

FERGUSON TOWNSHIP BOARD OF SUPERVISORS
Regular Meeting Agenda
Monday, January 21, 2019
7:00 PM

I. CALL TO ORDER

II. CITIZENS INPUT

III. SPECIAL REPORTS

Clearwater Conservancy Scotia Young Forest Conservation Initiative – Mr. Kevin Abbey

IV. APPROVAL OF MINUTES

1. January 7, 2019, Board of Supervisors Regular Meeting
2. Budget Special Meetings: November 13 and 15, 2018

V. UNFINISHED BUSINESS

1. Public Hearing Ordinance establishing new Sec27-216 Source Water Protection Overlay District
2. Public Hearing Resolution amending the Personnel Policy Manual

VI. NEW BUSINESS

1. Consent Agenda
2. Public Hearing Resolution certifying Local CATA Match
3. Presentation of Harner Farm Concept Plan
4. King Wealth Strategies LDP modification request
5. Appointment to Ferguson Township Vacancy Board
6. National Citizen Survey Discussion and Contract Authorization
7. Beaver Branch Preservation Discussion
8. Pennsylvania Cap and Trade Petition
9. Discussion of 2019 Donation Requests

VII. REPORTS

1. COG Committee Reports
2. Other Regional Reports
3. Staff Reports

VIII. COMMUNICATIONS TO THE BOARD

IX. CALENDAR ITEMS – JANUARY/FEBRUARY

X. ADJOURNMENT



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TOWNSHIP OF FERGUSON

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**Board of Supervisors
Regular Meeting Agenda
Monday, January 21, 2019
7:00 p.m.**

I. CALL TO ORDER

II. CITIZENS INPUT

IV. SPECIAL REPORTS

- 1. CLEARWATER CONSERVANCY SCOTIA YOUNG FOREST CONSERVATION INITIATIVE –**
Mr. Kevin Abbey 10 minutes

V. APPROVAL OF MINUTES

1. January 7, 2019, Board of Supervisors Organizational Meeting
2. January 7, 2019, Board of Supervisors Regular Meeting
3. Special Budget Meetings: November 13 and 15, 2018

VI. UNFINISHED BUSINESS

- 1. A PUBLIC HEARING ON AN ORDINANCE OF THE TOWNSHIP OF FERGUSON, CENTRE COUNTY, PENNSYLVANIA, AMENDING THE CODE OF ORDINANCES, CHAPTER 27, ZONING ORDINANCE, PART 2, DISTRICT REGULATIONS, BY ESTABLISHING A NEW SECTION 27-216 CONCERNING SOURCE WATER PROTECTION OVERLAY DISTRICT REQUIREMENTS. THE BOARD OF SUPERVISORS OF THE TOWNSHIP OF FERGUSON HEREBY ORDAINS: SECTION 1, CHAPTER 27, FERGUSON TOWNSHIP ZONING ORDINANCE, PART 2, DISTRICT REGULATIONS, SECTION 27-216, IS HEREBY ESTABLISHED TO READ AS FOLLOWS: §27-216. SOURCE WATER PROTECTION OVERLAY DISTRICT REQUIREMENTS. THE SOURCE WATER PROTECTION OVERLAY DISTRICT REQUIREMENTS ARE INTENDED FOR THE REGULATION OF LAND USES WITHIN THE SOURCE WATER PROTECTION OVERLAY DISTRICT FOR THE PURPOSE OF PROTECTING GROUNDWATER AND SURFACE WATER, WHILE DEFINING SOURCE WATER TERMS, REQUIRING ADDITIONAL REVIEW FROM PUBLIC WATER SUPPLIERS, PROVIDING FOR CERTAIN REGULATED LAND USES AND ACTIVITIES WITHIN THE SOURCE WATER PROTECTION OVERLAY DISTRICT, PROVIDING LAND DEVELOPMENT DESIGN STANDARDS, THE REQUIREMENT OF ENVIRONMENTAL EMERGENCY RESPONSE PLANS, AND ESTABLISHING THE MEANS FOR ENFORCEMENT OF THE ORDINANCE.** 20 minutes

Narrative

Planning and Zoning staff began the process of developing the Source Water Protection Overlay Ordinance and Map at the beginning of 2016 with the assistance of an informal steering committee. Since that time, the draft ordinance has undergone numerous updates to both the ordinance and overlay map. In early 2018, the Board of Supervisors appointed members to an Ad Hoc Board, with added agricultural expertise, to review remaining issues within the draft. The Ad Hoc Committee

developed a list of twenty-seven recommendations, most of which have been incorporated into the latest draft. The ordinance establishes protection from high-risk land uses around predetermined Zone I radii and establishes a Township Wide Zone II area throughout the remaining area of the Township. Facility Profile Sheet requirements have been deleted from the ordinance, however, public water suppliers can now take part in the review of Regulated Land Uses and Activities. Staff addressed comments the Board of Supervisors reviewed at the January 7, 2019 meeting, advertised the ordinance and issued a public hearing notification to property owners within proposed Zone I areas. Provided with the agenda is a copy of the ordinance as advertised for public hearing, as well as compiled comments received from the State College Borough Water Authority Executive Director that were discussed at the January 7th Regular Meeting.

Recommended motion: That the Board of Supervisors adopt the ordinance amending Chapter 27, Zoning, Part 2, District Regulations of the Code of Ordinances by establishing Section 216, Sourcewater Protection Overlay District Requirements inclusive of establishing the Sourcewater Ordinance Protection Overlay District as described in Appendix A of the ordinance.

Staff Recommendation

That the Board of Supervisors **adopt** the ordinance.

- 2. A PUBLIC HEARING ON A RESOLUTION OF THE TOWNSHIP OF FERGUSON, CENTRE COUNTY, PENNSYLVANIA, AMENDING THE FERGUSON TOWNSHIP PERSONNEL POLICY MANUAL BY AMENDING SECTION 6, REGULAR PAY PERIODS; SECTION 12, VACATION; SECTION 13, PERSONAL DAYS; SECTION 15, MILITARY LEAVES OF ABSENCE; SECTION 21, EMPLOYMENT OF RELATIVES; AND SECTION 36, SEXUAL HARRASSMENT COMPLAINTS.**

10 minutes

Narrative

Provided with the agenda is a copy of the resolution as advertised for public hearing amending the Ferguson Township Personnel Policy Manual. The advertised amendments include changes to the policies relative to pay periods; vacation time off increments; personal time off increments; employment of relatives; military leaves of absence; and sexual harassment complaints. Since the Board reviewed the proposed changes at the January 7th Regular Meeting, an additional amendment to the Military Leaves of Absence Policy was added to reflect a requirement of the employee to notify the Township of any changes to their military service schedule as soon as practical. Otherwise, all changes that were reviewed at the January 7th Regular Meeting remain unchanged. Provided with the agenda is an attachment showing the redlined changes to each policy.

Recommended motion: That the Board of Supervisors adopt the resolution amending the Ferguson Township Personnel Policy Manual.

Staff Recommendation

That the Board of Supervisors **adopt** the resolution.

VII. NEW BUSINESS

1. CONSENT AGENDA

5 minutes

- a. Treasurer's Report – December 2018
- b. Voucher Report – December 2018

- 2. A PUBLIC HEARING ON A RESOLUTION OF THE TOWNSHIP OF FERGUSON, CENTRE COUNTY, PENNSYLVANIA CERTIFYING PROVISION OF LOCAL MATCH FOR STATE OPERATING AND CAPITAL FINANCIAL ASSISTANCE TO THE CENTRE AREA TRANSPORTATION AUTHORITY.**

10 minutes

Narrative

Provided with the agenda is a copy of the resolution advertised for public hearing establishing the Township's contribution to the Centre Area Transportation Authority (CATA) for operating funds in the amount of \$113,069.00 and capital funding in the amount of \$17,743.00 for the CATA fiscal year beginning July 1, 2019 and ending June 30, 2020. Last year's contributions were \$108,573.00 for operating funds and \$17,890.00 for capital funding. Also provided with the agenda is the Local Match Shares document for the upcoming fiscal year.

Recommended motion: That the Board of Supervisors adopt the resolution certifying provision of local match for state operating and capital financial assistance to the Centre Area Transportation Authority.

Staff Recommendation

That the Board of Supervisors **adopt** the resolution.

3. PRESENTATION OF HARNER FARM CONCEPT PLAN

20 minutes

Narrative

Aspen Whitehall Partners, LLC and Aspen Route 26 Partners, LLC are proposing the development of the 27-acre portion of the Harner Farm south of Whitehall Road. The proposed development includes 36 single-family lots ranging in size from 0.25 acres to 0.50 acres and two commercial lots. Two public roads will be constructed to serve the project. Under Chapter 22-302, Preapplication Conference, a potential applicant for a subdivision or land development can request a conference with the Planning Commission for the purpose of discussing or reviewing such proposed subdivision or land development. The Planning Commission held the Preapplication Conference at their December 4, 2018, meeting and provided comments directly to the applicant. Those comments are included within the memo in your packet along with the Concept Plan Narrative.

Staff Recommendation

That the Board of Supervisors **review and comment** on the proposed concept plan for Harner Farms.

4. KING WEALTH STRATEGIES LAND DEVELOPMENT PLAN – MODIFICATION REQUEST

10 minutes

Narrative

On June 26, 2018, Penn Terra Engineering, Inc. submitted, on behalf of the owners/applicants, Laura and Thomas King, a proposed conversion of the existing residential rental property located at 222 Blue Course Drive to their financial planning business office. Tax Parcel 24-12-12 contains .269 acres and is zoned General Commercial and lies within the Corridor Overlay. The existing building has a total of 2,800 ft.² with 1,400 ft.² on both the first floor and the basement. The Zoning Hearing Board granted previous variance requests related to parking setbacks, buffer yard, distance between driveways and parking stall length. At this time, the applicant is requesting a Modification from Chapter 22, Part 5, Section 510.C.2, Grading, which states: in all cases, the bottom of the excavations or fills shall be a minimum of five feet from the property line of developed lots. Staff is recommending the Board deny the requested modification as a retaining wall can be constructed as a viable alternative and alleviate the need for a modification from the subdivision and land development ordinance.

Recommended motion: That the Board of Supervisors deny the requested modification of Chapter 22, Part 5, Section 510.C.2, Grading for the King Wealth Strategies Land Development Plan.

Staff Recommendation

That the Board of Supervisors **deny** the request for modification.

5. APPOINTMENT TO FERGUSON TOWNSHIP VACANCY BOARD

10 minutes

Narrative

The Board authorized staff to accept applications from registered electors of the Township to serve on the Vacancy Board to appoint a successor to Ms. Carlson for Ward III Supervisor. The application period remained opened through January 17th and the applications for the vacancy are included with the agenda. The appointment is an annual appointment and the registered elector shall serve as chair of the Vacancy Board should it need to meet. The board will be required to meet if the Board of Supervisors is unable to decide on a successor for the seat by February 6th. If so, the Vacancy Board has 15 days to fill the vacancy before it proceeds to the Centre County Court of Common Pleas. Applications are currently being accepted through January 25th for the Board of Supervisors vacancy.

Recommended motion: That the Board of Supervisors appoint _____ to the Ferguson Township Vacancy Board.

6. NATIONAL CITIZEN SURVEY DISCUSSION AND CONTRACT AUTHORIZATION

20 minutes

Narrative

The 2019 Operating Budget includes a Township-wide community survey to update the community survey conducted in 2011. The Township should consider updating the community survey in order to evaluate how policies and programs implemented since 2011 have improved or worsened resident satisfaction across a number of services. Survey data will also be useful and allow for data-driven decisions as the Township moves forward with various projects. Additionally, the Board is asked to consider using the National Citizens Survey instrument from ICMA and the National Research Center, Inc. (NRC) given their 20 years of experience measuring needs and organizational performance for local government and the ability to benchmark the Township against other local government survey participants. Should the Board approve the National Citizens Survey (NCS) Basic services and the recommended add-on options, the appropriation for this project will include mailed and electronic survey submissions and customized options. The recommended add-on options for the Board to consider will provide a separate report on geographic subgroups, demographic subgroups, custom benchmark comparisons against similarly-situated communities to the Township, one open-ended question and an in-person presentation of results. Provided with the agenda is the National Citizens Survey for Ferguson Township document with brief descriptions of each service and two timeline scenarios.

Recommended motion: That the Board of Supervisors authorize the Township Manager to execute an agreement with the National Research Center to conduct the National Citizens Survey in Ferguson Township.

Staff Recommendation

That the Board of Supervisors **authorize** the Township Manager to execute an agreement with the National Research Center.

7. BEAVER BRANCH PRESERVATION DISCUSSION

10 minutes

Narrative

The 2017 Ferguson Township Strategic Plan states that "The Township is considered a 'Best Place to Live' by aspiring to create a sense of place, preserving agriculture and environmentally sensitive areas, and establishing a vibrant town center." The Ferguson Township Recreation, Parks, and Open Space Plan specifically recommends that the Township Official Map be revised to show the Beaver Branch Gorge identified to be preserved as Open Space. Identifying and taking the steps to preserving

the Beaver Branch Gorge is in alignment with goal four of the Strategic Plan, Environmental Stewardship. In particular, with steps a. and c.:

a. Identify and use existing tools to preserve the environment - Chesapeake Bay Tributary strategy, National Pollutant Discharge Elimination System, source water protection, conservation easements, climate action plans, referendums, agricultural conservation easements, etc. (Board, Staff)

c. Identify and preserve natural resources and environmentally significant areas (Staff, Board, Planning Commission, possible ad hoc advisory group).

In addition to identifying the area for Open Space Preservation on the Official Map, the Board should consider several action options, as suggested by steps a. and c., including, but not limited to inviting Ms. Nardone of Clearwater Conservancy to present strategies for preservation for lands that may be identified as priorities for FT Open Space Preservation and creating an ad hoc advisory group to discuss Open Space Preservation priorities based on the Strategic Plan, RPOS and the Ferguson Township Environmentally Sensitive Area Map.

8. PENNSYLVANIA CAP AND TRADE PETITION

10 minutes

Narrative

Ferguson Township should endorse the attached petition to Pennsylvania's Environmental Quality Board to establish, by regulation, an economy-wide auction greenhouse cap-and-trade system. By joining as a petitioner, the board would be living into its provision under Resolution 2017-14 to cooperate and lead by example to achieve net zero emissions by 2050, ensure our township's right to a sustainable energy future under the Community and Environmental Bill of Rights attached to our Home Rule Charter, and align our strategic priorities more deeply with Article 1, § 27 of the Commonwealth Constitution. The Clean Air Council is the lead petitioner. They are joined by Widener University Commonwealth Law School Environmental Law and Sustainability Center, and others. Professors at Widener co-authored Resolution 2017-14. The auction cap-and-trade as it is drafted would have the Commonwealth reduce emissions consonant with the most recent Intergovernmental Panel on Climate Change 1.5 C report and the Fourth National Climate Assessment, both of which were released this past fall. Signatories must join by the end of January 2019.

The auction-cap-and-trade program is described in the overview portion of the attached current draft of the Petition, as well as the attached Fact Sheet. The legal basis, which includes the obligation to act under Article I, § 27 of the Pennsylvania Constitution, is set forth in Part III of the Petition and the draft article (Exhibit C) by John Dernbach and Robert McKinstry, to be published in the Fall edition of the Michigan Journal of Environmental and Administrative Law. As set forth in the article, they believe that the Pennsylvania Environmental Rights Amendment creates a constitutional mandate for Pennsylvania to take meaningful action to curtail greenhouse gas emissions to the extent necessary to prevent the worst impacts and that the Pennsylvania Air Pollution Control Act provides sufficient legislative authority to adopt the proposed regulation. The proposed regulation will mandate the emissions 2 reductions that the most recent IPCC report indicates will be necessary to forestall the worst effects of climate disruption. The current draft of the regulation and Exhibit A to the Petition listing the petitioners is also attached.

The proposed regulatory structure will promote good government and economic development in several respects. First, it would create a measured and foreseeable path for the Commonwealth to do what is necessary to avoid the worst consequences of climate disruption. Second, in the decadal term, it will ameliorate the Commonwealth's severe and structural budget deficit without impairing environmental capital, through the auction of GHG allowances with a reserve price (i.e. setting a floor on the price at which allowances may be sold). McKinstry has described the fiscal impacts in the attached Impact of the Proposed Regulation. Third, if used wisely, some of the income could be used to provide seed capital for the infrastructure projects that will be necessary to adapt to the effects of

climate change, impacts our board recognizes. Finally, it will provide an incentive for investment in the types of projects that will be key to keeping Pennsylvania's--and by extension Ferguson Township's--economy strong as we transition to an economy that does not emit greenhouse gases.

Recommended motion: That the Board of Supervisors endorse the petition to Pennsylvania's Environmental Quality Board to establish, by regulation, an economy-wide auction greenhouse cap-and-trade system.

9. DISCUSSION OF 2019 DONATION REQUESTS

10 minutes

Narrative

The Board has appropriated a total of \$5,300 in "Undesignated Contributions" in the 2019 Operating Budget to be donated to organizations or events when requested. Several agencies have made or are anticipated to make requests for donations from the Township in the 2019 fiscal year including First Night (2020); Ferguson Seniors; People's Choice, 4th Fest; Home Nursing Agency Foundation; Wildlife for Everyone Foundation; Leadership Centre County; and Discovery Space. The Board appropriated the designations for Leadership Centre County and Discovery Space in the approved budget. Provided with the agenda are copies of requests received to date. Also provided with the agenda is the Township's Donation Policy adopted in 2012. Per the policy, all applications will be assessed in terms of need; cost effectiveness; financial viability; contribution to the community and the community involvement/response. Applications are reviewed by two Board members and a designee of the Township Manager, with recommendations forwarded to the Board of Supervisors for approval.

Recommended motion: That the Board of Supervisors designate _____ and _____, along with a designee of the Township Manager, to review the donation requests and present their recommendations to the Board of Supervisors.

Staff Recommendation

That the Board of Supervisors **appoint** a committee including two Board members and the Township Manager's designee to review donation requests for 2019 and present their recommendations to the Board of Supervisors.

V. STAFF AND COMMITTEE REPORTS

1. COG COMMITTEE REPORTS

10 minutes

- a. Public Safety Committee
- b. Ad Hoc Facilities Committee
- c. Human Resources Committee
- d. Finance Committee
- e. Joint Parks Capital Committee & CRPRA
- f. Transportation & Land Use Committee
- g. Public Services & Environmental Committee

2. OTHER REGIONAL REPORTS

5 minutes

- a. Steering Committee Parks & Rec Regional Comp Plan

3. STAFF REPORTS

20 minutes

- a. Township Manager
- b. Planning and Zoning Director
- c. Public Works Director
- d. Chief of Police

VI. COMMUNICATIONS TO THE BOARD

VII. CALENDAR ITEMS – JANUARY/FEBRUARY

VIII. ADJOURNMENT

FERGUSON TOWNSHIP BOARD OF SUPERVISORS

Organizational Meeting
Monday, January 7, 2019
7:00 pm

I. ATTENDANCE

The Board of Supervisors held its Organizational Meeting on Monday, January 7, 2019, at the Ferguson Township Municipal Building. In attendance were:

Board: Peter Buckland
Steve Miller
Tony Ricciardi

Staff: David Pribulka, Township Manager
Dave Modricker, Director of Public Works
Ray Stolinis, Director of Planning & Zoning
Chris Albright, Chief of Police

Others in attendance included: Wes Glebe; Bill Keough; Faith Norris, Recording Secretary

II. CALL TO ORDER

Mr. Buckland called the Monday, January 7, 2019, organizational meeting to order at 7:00 pm.

III. ELECTION OF OFFICERS

Mr. Buckland made a motion that Dave Pribulka act as temporary chair. Mr. Miller seconded the motion. The motion passed unanimously.

Mr. Pribulka asked for nominations for 2019 Chairperson.

Mr. Miller made a motion nominating Mr. Buckland. No other nominations were made.

Roll-Call Vote: Mr. Miller – YES; Mr. Buckland – YES; Mr. Ricciardi – YES.

Mr. Pribulka turned the meeting over to Mr. Buckland, the appointed chairperson for Ferguson Township Board of Supervisors.

Mr. Buckland requested nominations for Vice Chairperson.

Mr. Ricciardi made a motion nominating Mr. Miller. Mr. Buckland seconded the motion. No other nominations were made.

Roll-Call Vote: Mr. Buckland – YES; Mr. Miller – YES; Mr. Ricciardi – YES.

Mr. Buckland asked for nominations for Secretary/Treasurer.

Mr. Buckland made a motion nominating Mr. Pribulka.

Roll-Call Vote: Mr. Buckland – YES; Mr. Miller – YES; Mr. Ricciardi – YES.

IV. ANNUAL APPOINTMENTS

By the Board's unanimous consent, all but the Solicitor's position was appointed as a group.

Mr. Miller made a motion nominating Joseph Green as Solicitor.

Roll-Call Vote: Mr. Buckland – YES; Mr. Miller – YES; Mr. Ricciardi – YES.

The remaining positions were read for record. Mr. Pribulka noted Dan Miller from Pennoni Associates is no longer performing municipal work.

Local Services Tax Collector, Borough of State College (BSC)	Linda Welker
Health Officer	Brian O'Donnell
Certified Public Accountant – Auditor	Baker Tilly Virchow Krause, LLP
Sewage Enforcement Officer	Walt Schneider – Primary Cory Warner – Alternate James Royer - Alternate Robert Royer – Alternate
Earned Income and Net Profits Tax Collector	Centre Tax Agency
Tax Administrator	Eric Endresen
Consulting Engineers	Scott Brown, NTM Engineering-Stormwater/Lighting

Roll Call Vote: Mr. Buckland - YES; Mr. Miller - YES; Mr. Ricciardi - YES.

V. APPOINTMENTS TO AUTHORITIES, BOARDS & COMMISSIONS (ABCs)

Mr. Buckland reviewed the new established policy as noted in the agenda.

The Planning Commission has one open position.

Mr. Miller made a motion nominating Jerry Binney for Planning Commission.

Roll Call Vote: Mr. Buckland - YES; Mr. Miller - YES; Mr. Ricciardi - YES.

The Zoning Hearing Board has one open position.

Mr. Miller made a motion nominating Michael Twomley for Zoning Hearing Board.

Roll Call Vote: Mr. Buckland - YES; Mr. Miller - YES; Mr. Ricciardi - YES.

Mr. Miller made a motion nominating Stefanie Rocco for Alternate to Zoning Hearing Board

Roll Call Vote: Mr. Buckland - YES; Mr. Miller - YES; Mr. Ricciardi - YES.

The Tree Commission has three open positions.

Mr. Ricciardi made a motion nominating Marc McDill, Darlene Chivers and Scott Pflumm to the Tree Commission.

Roll Call Vote: Mr. Buckland - YES; Mr. Ricciardi – YES; Mr. Miller - YES.

The Tax Review Board has two open positions.

Mr. Miller made a motion nominating Thomas Hoy and Lisa Rittenhouse to Tax Review Board.

Roll Call Vote: Mr. Buckland - YES; Mr. Miller - YES; Mr. Ricciardi - YES.

The ICDA has two open positions.

Mr. Miller made a motion nominating Lisa Rittenhouse to ICDA. Mr. Buckland made a motion nominating Dan Harner.

Roll Call Vote: Mr. Buckland - YES; Mr. Miller - YES; Mr. Ricciardi - YES.

Mr. Buckland pulled the Centre Region Park & Rec Committee vote until such time as there would be a full voting Board present.

Mr. Miller made a motion nominating Wes Glebe to be the Board of Supervisors representative to State College Borough Water Authority.

Roll Call Vote: Mr. Buckland - YES; Mr. Miller - YES; Mr. Ricciardi - YES.

VI. APPOINTMENTS TO C.O.G. AND/OR REGIONAL COMMITTEES

Mr. Buckland nominated Mr. Miller for the Executive Committee.

Roll Call Vote: Mr. Buckland - YES; Mr. Miller - YES; Mr. Ricciardi - YES.

Mr. Buckland nominated himself for the Public Safety Committee on a temporary basis.

Roll Call Vote: Mr. Buckland - YES; Mr. Miller - YES; Mr. Ricciardi - YES.

Mr. Buckland nominated Mr. Miller for the Finance Committee.

Roll Call Vote: Mr. Buckland - YES; Mr. Miller - YES; Mr. Ricciardi - YES.

Mr. Buckland nominated Mr. Ricciardi for the Human Resources Committee.

Roll Call Vote: Mr. Buckland - YES; Mr. Miller - YES; Mr. Ricciardi - YES.

Mr. Ricciardi noted that the Human Resource Committee will meet at 12:15 p.m. instead of noon.

Mr. Buckland nominated himself for the Public Services & Environmental Committee.

Roll Call Vote: Mr. Buckland - YES; Mr. Miller - YES; Mr. Ricciardi - YES.

Mr. Buckland nominated Mr. Miller for the Parks Capital Committee.

Roll Call Vote: Mr. Buckland - YES; Mr. Miller - YES; Mr. Ricciardi - YES.

Mr. Buckland nominated himself as Primary and Ms. Dininni as Alternate on the Spring Creek Watershed Commission.

Roll Call Vote: Mr. Buckland - YES; Mr. Miller - YES; Mr. Ricciardi - YES.

Mr. Buckland nominated Mr. Ricciardi for the Centre Area Cable Consortium.

Roll Call Vote: Mr. Buckland - YES; Mr. Miller - YES; Mr. Ricciardi - YES.

Mr. Buckland nominated Mr. Endresen as Primary and Mr. Pribulka as Alternate to Centre County Tax Collection.

Roll Call Vote: Mr. Buckland - YES; Mr. Miller - YES; Mr. Ricciardi - YES.

VII. APPOINTMENT TO POLICE PENSION ADVISORY BOARD

Mr. Miller was noted as being the former Board member appointed to the Police Pension Advisory Board.

Mr. Buckland made a motion nominating Mr. Miller as the Board of Supervisors representative on the Police Pension Advisory Board. Mr. Ricciardi seconded the motion. The motion passed unanimously.

VIII. ESTABLISH MEETING DATES FOR 2019

Mr. Buckland stated for the record the policy for the 2019 Board of Supervisors meeting dates as presented.

Mr. Buckland moved that the Board of Supervisors **establish** its regular meeting schedule for 2019 as the first and third Monday of each month except that it will meet on February 19th and September 3rd and on the first two Monday's in December. Mr. Ricciardi seconded the motion. A discussion followed on whether to make Martin Luther King Day a holiday. Mr. Pribulka noted that

the Board will need to convene on January 21st for an advertised scheduled public hearing set for that date. The motion passed unanimously.

X. DESIGNATION OF DEPOSITORY

Mr. Buckland moved that the Board of Supervisors **appoint** Jersey Shore State Bank as the township's primary depository and any FDIC insured bank and the PA Local Government Investment Trust for investments per the townships investment policy. Mr. Miller seconded the motion. The motion passed unanimously.

XI. PUBLIC HEARINGS

- a. Public Hearing on Resolution Establishing the Agenda Order of Business for 2019

The resolution was provided with the agenda.

Mr. Buckland moved that the Board of Supervisors **adopt** the resolution establishing the agenda order of business for 2019. Mr. Miller seconded the motion.

No Public Comment was noted and comment period was closed.

Roll Call Vote for Resolution 2019-01: Mr. Buckland - YES; Mr. Miller - YES; Mr. Ricciardi - YES.

- b. Public Hearing on a Resolution Adopting the Ferguson Township Board of Supervisors Procedures

The resolution was provided with the agenda.

No Public Comment was noted and comment period was closed.

Mr. Buckland moved that the Board of Supervisors **adopt** the resolution adopting the Ferguson Township Board of Supervisors Procedures Manual. Mr. Ricciardi seconded the motion.

Roll Call Vote for Resolution 2019-02: Mr. Miller - YES; Mr. Ricciardi – YES; Mr. Buckland – YES.

XII. CITIZEN'S INPUT – None.

Mr. Buckland noted for those in attendance that there will be a Citizen's Input coming up at tonight's regular meeting.

XIII. ADJOURNMENT

With no further business to come before the Board of Supervisors, Mr. Buckland adjourned the meeting at 7:18 p.m.

Respectfully submitted,

Dave Pribulka, Township Manager
For the Board of Supervisors

FERGUSON TOWNSHIP BOARD OF SUPERVISORS

Regular Meeting
Monday, January 7, 2019
7:00 PM

I. ATTENDANCE

The Board of Supervisors held its first regular meeting of the month on Monday, January 7, 2019, at the Ferguson Township Municipal Building. In attendance were:

Board: Peter Buckland
Steve Miller
Tony Ricciardi

Staff: Dave Pribulka, Township Manager
Dave Modricker, Public Works Director
Ray Stolinas, Director of Planning & Zoning
Chris Albright, Chief of Police

Others in attendance included: Faith Norris, Recording Secretary; Wes Glebe; Bill Keough; Gerry Lynn Hamilton; Anna Nattucata; Bettina Welz; Bill Hechinger; Pam Steckler; Deborah a. Benedetti; Dale Roth; Bob Semson; Sue Jackson; Tom Sevensits; Tamela Sevensits; Susan Steinberg; Lewis Steinberg; Andy Reisinger; Charlene Harrison; Frank Pugliese; Jon Dietz; David Vanness; Connie Baggett; Michelle Spiering; Laua Kingship Carter; Mike Chobody; Don Cindy Koss.

II. CALL TO ORDER

Mr. Buckland called the Monday, January 7, 2019, regular meeting to order at 7:00 p.m.

III. CITIZENS INPUT

Ms. Steckler inquired on the status of the plastic bag ban. Mr. Pribulka responded that staff is currently researching the issue and the Board will discuss the matter in February.

IV. SPECIAL ACTION ITEM: ACCEPTANCE OF THE RESIGNATION OF MS. SARA CARLSON

Mr. Pribulka provided background on the procedures for resignation of a Board member. The remainder of the Ward III term ends December 31, 2019. Clarification was made on the Vacancy Board process. Following discussion, a motion was made.

Mr. Ricciardi moved that the Board of Supervisors **accept** the resignation of Ms. Carlson effective today (1-7-19) and direct staff to accept applications for a registered elector to serve on the Vacancy Board. Mr. Miller seconded the motion. The motion passed unanimously.

Ms. Carlson was thanked for her service on the Board of Supervisors.

V. APPROVAL OF MINUTES

Mr. Miller moved that the Board of Supervisors **approve** the December 10, 2018, Regular Meeting Minutes. Mr. Ricciardi seconded the motion. The motion passed unanimously.

VI. UNFINISHED BUSINESS

Mr. Buckland noted that the Greenbriar discussion was moved on the agenda until such time as the Citizen's Input could be heard.

a. REVIEW OF DRAFT SOURCEWATER PROTECTION OVERLAY DISTRICT ORDINANCE

Mr. Stolinas reviewed the proposed the history, red-lined changes and recommendations set forth to the Board by the Planning Commission. Discussion followed on each line item.

Follow-ups included geographical data types, schedule of fees in regards to review fees as an escrow and definition of a qualified professional.

Mr. Keough was recognized. He spoke about the term qualified professional and noted it was part of a Planning Commission discussion on the application of the term.

Discussion followed on allowing the term “scientifically plausible” to be added back into the document, referencing page 2. The Board consensus was to add the term *scientifically* back into the document. Mr. Stolinas continued with the reviewing recent communication received from the State College Borough Water Authority on ground water recharge and decommissioning of wells, specifically water purveyor and storage of hazardous materials regulations, registration with LEPC (Local Emergency Planning Committee) and Right to Know requests and exemptions. Mr. Pribulka will report back to the Board on whether hazardous material locations are exempt from Right-to-Know requests.

Discussion followed on adding language to Section 10.2 for Zone II map that includes “Seasonal high pond and streams”. Following discussion, the consensus was to add the above language. Mr. Stolinas continued with language for Blasting in Zone 1. Following the discussion the consensus was to include language suggested. Mr. Pribulka noted any late addition comments will be compiled and added for the January 21st public hearing. Mr. Buckland applauded those who had worked on and given feedback and stated that we have a much smarter and better focused ordinance.

Mr. Buckland stated at this point to move to what was item 1 under Unfinished Business.

b. UNIVERSITY AREA JOINT AUTHORITY DEMONSTRATION PROJECT – GREENBRIAR SUBDIVISION

Mr. Buckland introduced the item for discussion. Mr. Modricker reviewed the history of communication with Columbia Gas and UAJA, the Development’s background, research and costs analysis on potential updates to-date.

Mr. Hamilton was recognized. He reviewed the pro and con statements in detail on the Greenbriar Sewer Project. A handout was provided to the Board on the comments and history of the project thus far. Ms. Kingshipp Carter spoke on the concern and urgency for health and safety. Other residents spoke of their personal experiences with the Greenbriar development and the need for a conducive strategy moving forward, consider equitable cost-sharing with all involved parties, concern for open-ended fees not realized that may be passed on, and remediation costs.

Mr. Pribulka clarified some points of interest and misconceptions and stressed the importance of maintaining the structural integrity of the public right-of-way. Board discussion followed on open cutting and repaving the roadway versus the cost to directional bore.

Mr. Cory Miller from UAJA spoke on the concept of directional boring that is not allowed in the current specifications and explained what has and has not worked in the past for sewer projects. He noted there is a timeframe for ordering supplies and when construction can start on the project.

Following the project discussion, Mr. Buckland thanked those who came to the meeting and called for a five minute recess.

VII. **NEW BUSINESS**

a. CONSENT AGENDA

1. 2017-C17 Pay Application: \$110,573.00
2. Treasurer's Report – November 2018
3. Voucher Report – November 2018
4. Board Member Request – Beaver Branch Preservation
5. Board Member Request – Pennsylvania Cap and Trade Petition

Mr. Miller moved that the Board of Supervisors **approve** the Consent Agenda. Mr. Ricciardi seconded the motion. The motion passed unanimously.

b. PUBLIC HEARING RESOLUTION APPROVING A SETTLEMENT OFFER WITH NAVISTAR, INC. AND ALLEGHENY TRUCKS, INC. TO RESOLVE PENDING LITIGATION IN THE CENTRE COUNTY COURT OF COMMON PLEAS DOCKET #15-4057

Mr. Pribulka reviewed the resolution as presented.

Mr. Miller moved that the Board of Supervisors **adopt** the resolution approving a settlement offer with Navistar, Inc. and Allegheny Trucks, Inc., of \$27,500 to resolve pending litigation in the Centre County Court of Common Pleas. Mr. Ricciardi seconded the motion.

Roll call vote on Resolution 2019-03: Mr. Miller – YES; Mr. Ricciardi – YES; Mr. Buckland – YES.

Mr. Buckland noted the Presentation of Harner Farm Concept Plan has been postponed until the next Board meeting.

c. REVIEW OF DRAFT AMENDMENTS TO THE FERGUSON TOWNSHIP PERSONNEL POLICY MANUAL

Mr. Pribulka reviewed the policy and proposed amendments. Discussion followed on the amendments to policies relative to pay periods, as well as possible changes to FMLA leave requirements, paternity leave, remote work and compensation. Items will be followed-up on for discussion. A question was asked if the Board would support Martin Luther King Day as a holiday. It was noted that the Board will still need to meet due to the advertised Public Hearing for that Monday date. The Board's consensus was to pass the red-lined changes as presented at this time.

Mr. Buckland moved that the Board of Supervisors **direct** staff to prepare a resolution for public hearing amending the Ferguson Township Personnel Policy Manual. Mr. Ricciardi seconded the motion. The motion passed unanimously.

d. AUTHORIZATION OF ENGINEERING STUDY TO EVALUATE LENGTHENING TURN LANES AT THE INTERSECTIONS OF WEST COLLEGE AVENUE AND SCIENCE PARK ROAD AND WEST COLLEGE AVENUE AND BRISTOL AVENUE

Mr. Pribulka introduced the item in the absence of the Board member who requested the evaluation. If the engineering warrants are met to lengthen the turn lanes, the Township will complete the analysis in-house and submit results to PaDOT for review and approval. If the results support lengthening the turn lanes, the project could be included in the 2019 line striping contract.

Mr. Miller moved that the Board of Supervisors **direct** staff to conduct an engineering study to determine if turn lane lengths should be increased on West College Avenue at its intersections with

Science Park Road and Bristol Avenue. Further, that the Board direct staff to forward the results to the Pennsylvania Department of Transportation for review and approval, if warranted. And further, that the Board direct staff to add the pain line eradication and re-striping for the turn lane improvements to the 2019 line striping contract. Mr. Ricciardi seconded the motion.

Discussion followed on the process and approvals.

The motion passed unanimously.

e. AUTHORIZATION FOR TOWNSHIP STAFF TO SUBMIT A GREEN-LIGHT-GO ROUND 5 GRANT APPLICATION FOR TRAFFIC SIGNAL DETECTION IMPROVEMENTS AT VARIOUS INTERSE

Mr. Pribulka stated that this has been an annual exercise with PaDOT to continue upgrading signalized intersections in the Township with digital radar detection. If successful, the grant requires a 20% match from the Township.

Mr. Ricciardi moved that the Board of Supervisors **authorize** staff to submit a Green-Light-Go Round 5 Grant Application for traffic signal detection improvements at various intersections. Mr. Buckland seconded the motion. The motion passed unanimously.

VIII. STAFF AND COMMITTEE REPORTS

a. COG COMMITTEE REPORTS

1. Executive Committee. No report until next week.
2. Joint Parks Capital and Parks & Rec Authority. Mr. Buckland stated that both he and Ms. Dininni attended. Mr. Buckland presented the report in Ms. Dininni's absence. Highlights included two proposed action sports parks totally unrelated that impacts the local park areas. Details followed.

b. OTHER REGIONAL COMMITTEES - NONE

c. STAFF REPORTS

1. Township Manager. Highlights of the written report included Messrs. Buckland, Miller and Pribulka attendance at a meeting with board members of the Chamber of Business and Industry to discuss economic development projects; and attendance at an agricultural conservation easement closing on Harpster Farm property.
2. Planning and Zoning Director. The Active Plans List and end of year Permit Activity Report with comparisons were provided with the agenda.
3. Public Works Director. No written report. Mr. Modricker wished everyone a Happy New Year!

IX. COMMUNICATIONS TO THE BOARD

- a) Mr. Buckland received comments on issues heard at tonight's Board meeting, referring to the Greenbriar Demonstration Project.
- b) Mr. Buckland stated an article that he and Brandi Robinson from the Ferguson Township Climate Action Committee co-wrote entitled, "11 Policy Ideas to Protect the Planet" was recently in the Washington Post on reducing PA Greenhouse Gas Emissions. (This item was included with tonight's Consent Agenda.)

X. **CALENDAR ITEMS**

- a. Coffee and Conversation, January 12th, 8:00 a.m. – 9:30 a.m., Baileyville Community Hall.

XI. **ADJOURNMENT**

Mr. Buckland called for adjournment. With no further business to come before the Board of Supervisors, Ricciardi motioned to adjourn the meeting. The meeting adjourned at 9:36 p.m.

Respectfully submitted,

David Pribulka, Township Manager
For the Board of Supervisors

DRAFT

FERGUSON TOWNSHIP BOARD OF SUPERVISORS
BUDGET SPECIAL MEETING
TUESDAY, NOVEMBER 13, 2018, 6:00 P.M.

ATTENDANCE

Board of Supervisors:

Peter Buckland
Steve Miller
Laura Dininni
Tony Ricciardi

Township Staff:

Dave Pribulka, Township Manager
Dave Modricker, Public works Director
Eric Endresen, Finance Director
Chris Albright, Chief of Police

I. Call to Order

Mr. Buckland called the meeting to order at 6:00 p.m.

II. Citizen's Input – none

III. Presentation of the Draft 2019 Annual Operating Budget

a. Overview. Dave Pribulka presented an overview of the General Fund Budget, projections and initiatives. The major components for tonight's meeting are Public Works and Public Safety.

b. General Fund Revenues. Mr. Endresen reviewed revenues and detailed a breakdown of account funds and balances. Editorial corrections were noted.

c. General Fund.

i. Public Works

Mr. Modricker reviewed the line item funds and updates. More details followed on current and future projects and new items. Editorial corrections were noted.

Mr. Pribulka noted one item on educational assistance in regards to coursework. Details followed on the reimbursable funds and the requests for tuition courses for employees. Clarification was made on what the tuition funds are for.

Buildings review of projected and budgeted followed with a discussion on HVAC inspection systems.

There was a discussion on the projected cost of the new LEED Gold Public Works. Messrs. Modricker and Buckland agreed that the projection for the facility is a conservative estimate depending on the economics of the structure.

Mr. Pribulka noted that this is a meeting vs. a worksession and that action can be taken on items at budget meetings. Mr. Buckland noted to leave the projection as stated in the budget for the LEED Gold Public Works Facility.

Mr. Modricker continued with Refuse and Recycling budget review.

There was discussion on Ferguson Township Park Maintenance Schedule. A follow-up will be done.

Following a discussion on Equipment Rentals, a motion was made to decrease the budget due to a new piece of equipment that will be purchased in place of a rental.

Mr. Buckland moved that the Board of Supervisors **decrease** the 2019 Equipment budget to \$5,500. Mr. Ricciardi seconded the motion.

A question was raised by a Board member on other services that may be needed in regards to the hydrodig/grappler. A follow-up will be done following the equipment purchase to see at that time what is needed in the budget.

The motion passed unanimously.

There was discussion on reasons for the special contract for plowing per a Board member's inquiry. Details followed on comparison being done on contract plowing vs. Township plowing. Mr. Buckland requested a cost comparison estimate to be done and brought back to the Board.

A question was raised on what areas the contractor services for the herbicides. A detailed discussion followed. Follow-up on Township spraying, if any.

A clarification was made that the Pine Hall TTD will be included in the cost comparison estimate that Mr. Buckland requested.

Discussion followed on signal, signs and supplies. An estimate was done by Mr. Modricker per a previous discussion with a Board member and colleagues on replacement costs of bike paths' wooden signs with metal signs. The estimate is about \$5,000 for materials. Details and discussion followed.

Mr. Ricciardi moved that the Board of Supervisors **add** \$5,000 to the Public Works Signals and Street Signs and Supplies, line 433 budget. Mr. Miller seconded the motion. Discussion followed on cost, improvements, comparative to regional signs and standards.

The motion passed unanimously.

Some discussion on intergrading park maintenance into the Ferguson Public Works schedule.

It was clarified per a Board member's request that the budget appropriation for bike repair stations is under the Capital Reserve Park Fund 30.

Discussion followed on 2018 accomplishments, Tree Commission, Environmental Stewardship, Arborist protective equipment, request for intern to assist with Street Tree Inventory and General Expense increase.

Mr. Buckland moved that the Board of Supervisors **increase** General Expense to \$1,000 in the 2019 budget. Ms. Dininni seconded the motion. The motion passed unanimously.

A lengthy discussion followed on the budgeted amount for Oak Wilt.

ii. Public Safety

Chief Albright reviewed 2018 accomplishments, implementations, effective uses, cold cases update and community events. Editorial corrections were noted.

Chief Albright noted that about 53% of the overtime budget is reimbursable by another entity. Details followed.

Fuel pricing update. Vehicles to be phased out of service. Details followed.

A question was asked on the CIT training program. Chief Albright discussed details of the training that is held at the Township building twice a year and the budgeted amount towards the program. Ms. Carlson stated that the ride-along she had done with one of the officers noted how valuable the training is for crisis intervention. Mr. Pribulka noted that he would like to expand the program attendance to non-uniform employees to help with crisis de-escalations.

Noted was that Ordinance Enforcement Services is reimbursable.

d. Liquid Fuels

Review of Revenue and Expenditures by Messrs. Pribulka and Modricker.

It was clarified that Liquid Fuels Funds can carry over from year to year if not used per a Board member's inquiry.

Mr. Pribulka discussed the Agility Program cost savings that originated in 2017 with a grant from PaDOT. Mr. Buckland requested best practices to reduce the use of salt. Discussion followed with the Agility Program in respect to mowing a specific property right-of-way. A suggestion from a Board member was to make the property in question pollinator friendly according to the structure of the maintenance agreement and a course of action.

It was clarified that an adjustment will be made to Revenue for the Liquid Fuels grant funds received in the General Fund that will be transferred to the Liquid Fuels Fund.

e. Capital Reserve Fund

Mr. Pribulka reviewed the line items and grant requests.

Discussed Developer Contributions revenue in response to a Board member's question. An example was a field lighting project done in 2015 at the Silvi Baseball Complex. Fund Balance discussion followed.

Discussed adding \$20,000 for community survey update appropriated in the Capital Improvement Plan.

Mr. Miller moved that the Board of Supervisors **add** \$20,000 for the Community Survey Update appropriated in the Capital Improvement Plan 401.750. Mr. Ricciardi seconded the motion. Discussion followed.

The motion passed unanimously.

Information Technology. Discussion on Ethernet switch for new Public Works garage. Server and web site redesign project discussions followed. If the site redesign project remains in the budget, an RFP will go out to solicit vendors and information to follow to the Board in 2019. The Board's consensus was to have input from the Board and public on web site interface and the RFP.

Mr. Endresen noted that the Community Survey is included in the General Fund under Contract Services. The previous motion to add \$20,000 was withdrawn.

Discussion followed on security cameras and space project for the administration building.

Generator discussion on looking into a battery unit generator; however, was not dependable per Mr. Modricker's discussion with vendor. Mr. Buckland requested details of that information be forwarded to the Board.

Songbird Sanctuary. Mr. Pribulka requested this topic be put on hold until the executive session next week. Details followed on the appropriation on the settlement.

LEED Gold Public Works building breakdown reviewed by Mr. Modricker. Board discussion followed on what items would be spent on for 2019.

Mr. Buckland moved that the Board of Supervisors **remove** the furniture and appliances from the 2019 budget. Ms. Carlson seconded the motion. Discussion followed on reduced amount for the budget.

Mr. Buckland moved to amend the motion to add computer and phone equipment. Ms. Dininni seconded the motion. The motion passed unanimously.

The motion passed unanimously on the original motion.

Discussion followed on replacement doors, specifically definition of man doors.

Mr. Pribulka reviewed items for the Planning in Mr. Stolinas's absence. Review followed on carry over funds and appropriated contracts. A question was raised why the Community Survey was not included. Mr. Pribulka responded that the survey is more of an overarching survey, not necessarily a Planning focus. It was clarified that the Parks Open Space Plan is in the Parks budget.

New Equipment review. A discussion followed on carry over to use for the engineering fleet and will be looking into grant options. A question was raised if training for the mechanics would be necessary for maintenance on electric vehicles. Mr. Modricker will look into the green conference coming up and what type of training it entails.

Ornamental street lighting reviewed. A discussion followed on the tone and intensity of lighting in response to a Board member's question.

There was discussion on the Stormwater Fee Feasibility Study. The structure in Phase 2.1 regarding the Township implementing a fee was clarified in response to a Board member's question.

Given the time, Mr. Pribulka suggested tabling the Transportation Improvement Fund review and discussion to the next scheduled budget meeting. With the consensus of the Board, item G was moved to Thursday's budget meeting.

Mr. Pribulka discussed the Park Hills Drainage Improvements. Mr. Pribulka noted an item will be added to a future agenda for awarding the project. Details on suggested amendments were discussed.

For clarification of the recommendation is that Phase 1 increased to \$275,000 for full design and engineering. Details followed on 2018 budgeted funds already available to begin the project that will reduce the amount, if approved at the upcoming Board meeting. Discussion followed on the increased request and the need for more information before voting on the recommendation. Mr. Pribulka suggested to table the vote on proceeding with the project until the next Board meeting to review the new information. Project details were discussed.

Mr. Buckland moved that the Board of Supervisors **remove** the Park Hills Drainage Improvements Phase 1 Utility Easements Construction from the budget. Ms. Dininni seconded the motion. Discussion followed on design and engineering and reduction of some costs. The motion passed unanimously.

Storm pipe conditions and Chesapeake Bay Pollutant Reduction funding was reviewed.

There was discussion on Township Parks. A question was raised on how to get something on the list for potential safety updates and funds diverted for the update if needed, an example was provided and a response was given.

f. Regional Capital Recreational Projects Fund

Discussion was held on the fee-in-lieu amounts and unaccounted funds not listed on the budget. A question was raised on funds for Regional Parks.

Ms. Dininni moved that the Board of Supervisors **remove** the word Regional from the narrative. Mr. Miller seconded the motion. Discussion followed on reasons for the fee-in-lieu funds and where it should be appropriated and restricted to.

Mr. Buckland clarified some points and asked for more information on the policy for fee-in-lieu funds.

Ms. Dininni withdrew the previous motion.

The fee-in-lieu will be made an agenda item for an upcoming Board meeting for informational purposes to give the Board more clarity on where it should be placed in the budget. Another clarification request was for mills.

Regional Park Capital Improvements. Clarification was requested for accounting on Parks for Improvements vs. Projects. Messrs. Pribulka and Endresen reviewed and noted it was in line with the Chart of Accounts.

IV. Adjournment

Mr. Buckland called for adjournment. Ms. Dininni motioned to adjourn the meeting.

Respectfully submitted,

David Pribulka, Township Manager
For the Board of Supervisors

DRAFT
FERGUSON TOWNSHIP BOARD OF SUPERVISORS
BUDGET SPECIAL MEETING
THURSDAY, NOVEMBER 15, 2018, 6:00 P.M.

ATTENDANCE

Board of Supervisors:

Peter Buckland
Steve Miller
Laura Dininni

Township Staff:

Dave Pribulka
Eric Endresen

I. Call to Order

The Chairman called the special meeting to order at 6:00 p.m.

II. Citizens' Input – None

III. Draft 2019 Annual Operating Budget - continuation

A. GENERAL FUND

i. Administration

Mr. Pribulka asked if there were any questions on Revenue from Tuesday's special meeting. There were none.

There was discussion on Marcellus Shale Impact Fee. This will be a follow-up item.

Discussion followed on each line item under each topic.

Mr. Pribulka noted a follow-up for a discussion on social media/survey tools for community engagement, i.e. PlaceSpeak.

A Board member noted under Legal fees about the importance of on-time billing.

Mr. Endresen reviewed the Information Technology (IT) section of the budget.

Mr. Modricker discussed the automated robotics tool that is used to measure pavement distresses. Details followed on this subject.

Mr. Pribulka noted that there will be a future discussion with the Board on employing an IT manager for the Township.

Economic Development was reviewed and discussion followed. The consensus of the Board was to revisit the Economic Development discussion. The list of items to revisit was noted. Mr. Pribulka stated that there was a quorum at this meeting and any action would need to be unanimous with the Board members in attendance.

ii. Planning & Zoning

Mr. Pribulka reviewed the line items for Planning and Zoning.

A clarification was made that no land development plan was submitted for Whitehall Road Regional Park. Other editorial changes were noted.

Noted was to revisit the recommendations for the sign ordinance next year. Discussion followed.

A board member noted to revisit the Playground Inspector item at a future meeting when the full board would be present.

Mr. Buckland recused himself on the voting discussion on Spring Creek Watershed Monitoring and Sustainable Communities due to conflict of interest.

Discussion was held on budget structure and categories.

Mr. Modricker noted the solar design was for roof top and ground mounted but nothing on Traffic Signals in reference to the line item Sustainable Communities – public works maintenance facility.

Discussion followed on fee-in-lieu accounting.

iii. Finance

Mr. Endresen reviewed the line items under each topic. Discussions and editorial changes followed.

Noted, converted to bi-weekly payroll that makes it a more efficient process.

Noted, working on efficiencies to pay vendors in a timely manner.

Expansion of management document system that improves workflow efficiencies.

The current auditor has been contracted for another 3 years. Mr. Endresen noted that it is a possibility that the Township will do an RFP in forthcoming years.

In response to a Board member's question, Mr. Endresen noted the funds collected for Centre Tax Agency taxes is shown in Revenue. More detail followed on what the agency charges in percentage and that it is reconciled at the end of the calendar year.

There was discussion on how fund transfers work to pay debt service and other items.

The TIF funds were briefly discussed.

iv. Centre Region Council of Governments

Mr. Pribulka reviewed the line items. Editorial changes were noted.

There was discussion on the COG formula.

There was discussion on Donation policy and organizations. Noted, to place letters of request on a future agenda.

- v. Other Special Revenue, Small and Fiduciary funds were discussed.

There was a lengthy discussion on Street Light Fund and Hydrant Fund.

General Obligation was discussed by Mr. Endresen.

There was discussion on Tudek Trust and Butterfly Gardens.

Mr. Modricker discussed in detail the Transportation Improvement Fund.

Noted, next Monday will be an executive session.

- vi. Adjournment

Mr. Buckland called for adjournment. Ms. Dininni motioned to adjourn the meeting.

Respectfully submitted,

David Pribulka, Township Manager
For the Board of Supervisors



TOWNSHIP OF

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TO: Ferguson Township Board of Supervisors

FROM: Raymond J. Stolinas, Jr., AICP, Director of Planning & Zoning

DATE: January 17, 2019

SUBJECT: Source Water Protection Overlay District Draft Ordinance
State College Borough Water Authority Comments

At the January 7th Board of Supervisors meeting, the Planning & Zoning Director outlined comments from Brian Heiser, State College Borough Water Authority on the latest draft of the Source Water Protection Overlay Ordinance. The following outline comments and responses from that meeting:

1. On Page 2, Section 2, Statutory Authority, "Consider adding language which clarifies that water suppliers are not empowered to regulate land use". **Municipal authority to regulate land use through zoning is governed under Act 247, the PA Municipalities Planning Code as Source Water Protection will be regulated under the existing Ferguson Township Zoning Ordinance as an overlay district.**
2. On Page 4, "Has the definition for "Closed or Undrained Depression, Community On-Lot Disposal System and Groundwater Recharge" been removed since they are no longer being used?" **Yes, the Ad Hoc Source Water Advisory Board recommended deletion of these terms if not used within the document. Board of Supervisors concurred with this recommendation.**
3. On Page 10, "Consider modifying "Upon a well decommissioning by the water purveyor..." **Revised**
4. On Page 13, "Why was 1.a. eliminated? How will the water supplier know if the proposed project is permitted in the zoning district. If it is not permitted, will there be any reason for a review request being made to the water supplier?" **It is the responsibility of the Township Zoning Administrator and Planning & Zoning staff to determine the location of a parcel in a designated zoning district, not the water purveyor responsibility.**
5. On Page 13, "I believe 1.b. is no longer applicable since Section 7 of this document is proposed to be removed." **Revised**
6. On Page 17, "Item Number 43 needs to be a permitted use in all zones, DEP provides strict design criteria for the storage, handling, use of regulated substances and containment structures within such facilities to protect the integrity of the water source. This requirement would be redundant, allow DEP to continue to be the regulating body for items A. and B. **Well Building and Water Production Facilities are permitted within Zones I and II. Items A. and B. remain.**
7. On Page 17, Item C. poses a security risk should this information accidentally be released. Reportable quantities of hazardous materials must be reported annually to the Centre County LEPC, including storage locations. In the event of an emergency this information is made available to first responders by the LEPC. **It is the Township Manager's determination that an exemption in the PA Right-to-Know Law exists that would preclude the Township from disclosing that information. The requirement is included in the ordinance for the public hearing, but may be removed if the Board desires.**
8. Page 21, Section 11.A.5. "Remove the word "either". **Removed**

9. Page 21, Section 11.A.8. “Consider adding A.2.c. **Added**
10. Page 21, Section 11.A.12. “Since it is possible that the water provider may not own all the land within Zone I (well permitted prior to 10/9/95), the water provider should be permitted to review and comment. Consider including a provision for the water provider to review and comment. ***“We have included the following language: “Prior to PA DEP permit approval and Zoning Hearing Board consideration of Special Exception, a water purveyor shall have the opportunity to review and comment on proposed blasting activity within any delineated Zone I radius.”***

Staff received an additional email from Brian Heiser on January 17, 2019, which have not been incorporated into the ordinance:

1. Page 4, Section 3, Definitions, Dolomite “Replace carbonite with carbonate”.
2. Page 10, Section 5, “Add the term radius to distances” and “Consider adding: It should be noted that there are many areas within Zone II that are more sensitive than other areas thereby making it imperative that development in Zone II should not be treated equally across the entire Zone II.”
3. Page 11, Section 6, 1. Remove parentheses from "All plans shall be on sheet sizes consistent with (the Township subdivision and land development ordinance)." and 6. Reword to say "Map should also include Source Water Protection Zones on a base map using the most recent available aerial photography"
4. Section 11. Land Development Design Standards A.2 through 4. “Should replace qualified professional with a qualified registered professional geologist or engineer.”

ORDINANCE # _____

AN ORDINANCE OF THE TOWNSHIP OF FERGUSON, CENTRE COUNTY, PENNSYLVANIA, AMENDING THE CODE OF ORDINANCES, CHAPTER 27, ZONING ORDINANCE, PART 2, DISTRICT REGULATIONS, BY ESTABLISHING A NEW SECTION 27-216 CONCERNING SOURCE WATER PROTECTION OVERLAY DISTRICT REQUIREMENTS. THE BOARD OF SUPERVISORS OF THE TOWNSHIP OF FERGUSON HEREBY ORDAINS: SECTION 1, CHAPTER 27, FERGUSON TOWNSHIP ZONING ORDINANCE, PART 2, DISTRICT REGULATIONS, SECTION 27-216, IS HEREBY ESTABLISHED TO READ AS FOLLOWS: §27-216. SOURCE WATER PROTECTION OVERLAY DISTRICT REQUIREMENTS. THE SOURCE WATER PROTECTION OVERLAY DISTRICT REQUIREMENTS ARE INTENDED FOR THE REGULATION OF LAND USES WITHIN THE SOURCE WATER PROTECTION OVERLAY DISTRICT FOR THE PURPOSE OF PROTECTING GROUNDWATER AND SURFACE WATER, WHILE DEFINING SOURCE WATER TERMS, REQUIRING ADDITIONAL REVIEW FROM PUBLIC WATER SUPPLIERS, PROVIDING FOR CERTAIN REGULATED LAND USES AND ACTIVITIES WITHIN THE SOURCE WATER PROTECTION OVERLAY DISTRICT, PROVIDING LAND DEVELOPMENT DESIGN STANDARDS, THE REQUIREMENT OF ENVIRONMENTAL EMERGENCY RESPONSE PLANS, AND ESTABLISHING THE MEANS FOR ENFORCEMENT OF THE ORDINANCE

SECTION 1. PURPOSE AND INTENT

The purpose of this Ordinance is to protect the health, safety, and welfare of residents and the ecosystems of the township, provide protections for sources of public drinking water supplies, and safeguard the future supply of safe and sustaining drinking water. The designation of a Source Water Protection Overlay District, as provided herein, and the regulation of activities within such Source Water Protection Overlay District are intended to reduce the potential for ground water and surface water contamination and minimize adverse environmental impacts.

The Source Water Protection Overlay District further intends to:

- Protect groundwater-based public and private water supply sources within the Township from contamination.
- Minimize the risk from spills, leaks and other discharges into groundwater within the Source Water Protection Overlay District.
- Manage land use activities that store, handle, and produce hazardous materials or regulated substances which can contaminate water supply sources through inadequate management.
- Encourage Best Management Practices (BMP) to limit degradation of groundwater and surface water quality.
- Provide many of the Source Water protections that are set forth as goals in the existing Source Water Protection reports or plans formulated by such entities as the State College Borough Water Authority, Pennsylvania State University, Bellefonte Borough Water Authority, College Township Water Authority, and any other private water companies utilizing groundwater within the Township for public consumption.
- Update ordinance requirements periodically, taking into account any new technologies or practices in agricultural operations. When new technologies, farming practices, or development activities could lead to unacceptable harm to people or our source water that

is scientifically plausible but uncertain, the township shall take actions to avoid or diminish that harm.

- Help mitigate the impacts of a changing climate on the groundwater and surface water resources within the Township by defining the Source Water Protection Overlay District to be the entire Township, thereby including the future southwest extension of the Zone II area.

SECTION 2. STATUTORY AUTHORITY

Section 1428 of the Federal Safe Drinking Water Act Amendments of 1986 requires the States to establish Wellhead Protection Programs to protect groundwater from contamination. In Pennsylvania, the responsibilities for development and implementation of Source Water (Wellhead) Protection Programs is shared between water suppliers, the Commonwealth, and local municipal governments. The Pennsylvania Department of Environmental Protection (PA DEP) recognizes that, in Pennsylvania, DEP is responsible for regulating water suppliers and discharges of contaminants. Pennsylvania DEP also recognizes that it is the responsibility of local governments to regulate land use. Ferguson Township is empowered to regulate land use activities through the Pennsylvania Municipalities Planning Code, Act 247 of 1968, as amended, which provides authorization to the Township to enact ordinances regulating development and land uses to ensure the public health, safety, and welfare; provisions for safe, reliable, and adequate water supply; considering current and future water resources availability, uses, and limitations (including provisions adequate to protect water supply sources).

SECTION 3. DEFINITIONS

For the purposes of this Section, certain terms and words used herein shall be interpreted as presented below.

- A. Words used in the present tense include the future tense; the singular number includes the plural; and the plural number includes the singular; words of masculine gender include feminine gender; and words of feminine gender include masculine gender.
- B. The word "includes" or "including" shall not limit the term to the specific example, but is intended to extend its meaning to all other instances of like kind and character.
- C. The word "person" includes an individual, firm, association, organization, partnership, trust, company, corporation, or any other similar entity.
- D. The words "shall" and "must" are mandatory; the words "may" and "should" are permissive.
- E. The words "used or occupied" include the words "intended, designed, maintained, or arranged to be used, occupied or maintained".

Agriculture: Any use of land or structures for farming, dairying, pasturage, land tilling, horticulture, floriculture, arboriculture, silviculture, or animal husbandry.

Agricultural Business: A farm that is actively producing agricultural products for purchase and sale. It may include any farm marketing or agricultural tourism endeavor such as farm markets, farm direct marketing, farm stays, farm visits, roadside markets or stands, U-Pick operations, community supported agriculture, rural tourism, farm museums, corn mazes, cider mills, vineyards and wineries, pumpkin patches, petting farms, on-farm retail meat shops, on-farm retail dairies and creameries, on-farm woolen goods shops, maple syrup farms, Christmas tree farms, multi-farmers' markets, on-farm retail nurseries, on-farm gift shops, on-farm flowers, herbs and

spices stores, on-farm bakeries, on-farm restaurants or cafes, and other value added production facilities.

Agricultural Erosion and Sedimentation Control Plans: A site specific plan identifying BMPs to minimize accelerated erosion and sedimentation from agricultural runoff, required by Chapter 102 (relating to erosion and sedimentation control). The agricultural erosion and sediment control components of a conservation plan may meet this requirement, if allowed under Chapter 102.

Agricultural Operation: An enterprise that is actively engaged in the commercial production and preparation for market of crops, livestock, and livestock products; and in the production, harvesting, and preparation for market of use of agricultural, agronomic, horticultural, silvicultural, and aquacultural crops and commodities.

Agricultural Service Business: A business engaged in providing services for agricultural operations, including sales and service of farm implements, fertilizer/pesticide/herbicide, agricultural product storage and distribution facilities, testing services, and seed and feed operations.

Alteration: As applied to land, a change in topography as a result of the moving of soil and rock from one location or position to another, also the changing of surface conditions by causing the surface to be more or less impervious; land disturbance. This term shall not apply to agricultural plowing and tilling activity.

Alteration, Structural: Any change or rearrangement in the supporting members of an existing building such as bearing walls, columns, beams, girders, or interior partitions, as well as any change in doors, windows, means of ingress and egress, or any enlargement to or diminution of a building or structure, or the moving of a building from one location to another.

Aquifer: A water-bearing layer of rock that will yield water in a usable quantity to a well or spring.

Best Management Practices (BMPs): Schedule of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of "waters of the United States." BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. Additionally, agricultural practices are intended to be consistent with the Pennsylvania Nutrient Management Chapter.

Carbonate: A sediment formed by the organic or inorganic precipitation of mineral compounds characterized by the fundamental chemical in CO_3 , the principal element in limestone and dolomite strata.

Detention Basin: An impoundment structure designed to manage stormwater runoff by temporarily storing the runoff and releasing it at a predetermined rate.

Dolomite: A rock that contains a variable portion of magnesium carbonite and calcium carbonite.

Existing Use: The use of a property as of the date this ordinance was adopted.

Expansion: An increase in the size of an existing structure or use, including the physical size of a property, building, parking lot, and other improvements.

Extraordinary Development Proposal: A land development plan application that exceeds the prescribed 90-day time limit as outlined in Section 508. Approval of Plats as stipulated within the Act of 1968, P.L. 805, No. 247, the PA Municipalities Planning Code.

Fracture Trace: Natural, linear-drainage, soil-tonal and topographic alignments, usually visible on aerial photographs, which are commonly the surface manifestations of corresponding zones of fracture concentration within underlying bedrock. Particularly in soluble rocks (e.g., limestone and dolomite), fracture zones cause increased bedrock porosity and permeability, resulting in rates of groundwater movement that are greater than the surrounding bedrock.

Freight and Trucking Terminal: A facility for the receipt, transfer, short-term storage and dispatching of freight and goods transported by truck.

Hazardous Material: Materials which are classified by the U.S. Environmental Protection Agency and the Pennsylvania Department of Environmental Protection as having the potential to damage health, impair safety, or pose a significant actual or potential hazard to water supplies if such material were discharged into land or water of the Township. Hazardous materials include but are not limited to: inorganic mineral acids or sulfur, fluorine, chlorine, nitrogen, chromium, phosphorous, selenium, arsenic and their common salts, lead, coal tar acids (such as phenols and cresols) and their salts, petroleum products, pesticides, herbicides, solvents, thinners, fertilizers, and radioactive material.

Impermeable: Impervious, impenetrable to moisture.

Incinerator: An apparatus for burning waste material at high temperatures until it is reduced to ash. For the purposes of this ordinance, the term "incinerator" shall apply to industrial use only and shall not apply to incinerators which are used as an accessory to agricultural operations.

Integrated Pest Management Plan: A plan which provides for the use of multiple pest management tactics which minimize the risk of undesirable environmental and health effects.

Intermittent or Vernal Pond: Transient surface water bodies formed in closed depressions after heavy precipitation due to poor internal drainage. This poor drainage may be due to residual clay.

Karst: A type of topography that is formed over limestone, dolomite, or gypsum by bedrock solution, and that is characterized by closed depressions, sinkholes, caves, and underground conduit drainage.

Land Development: (1) The improvement of one lot or two or more contiguous lots, tracts or parcels of land for any purpose involving: (i) a group of two or more residential or nonresidential buildings, whether proposed initially or cumulatively, or a single nonresidential building on a lot or lots regardless of the number of occupants or tenure; or (ii) the division or allocation of land or space between or among two or more existing or prospective occupants by means of, or for the purpose of streets, common areas, leaseholds, condominiums, building groups, or other features. (2) A subdivision of land. (3) Development in accordance with § 503 (1.1) of the PA Municipalities Planning Code.

Limestone: A rock that by chemical precipitation or the accumulation of organic remains consists mainly of calcium carbonate.

Multifamily Dwelling: Three or more dwelling units, with the units stacked one above another.

Nutrient Management Act: The PA Nutrient Management Act of 1993, which is applicable to agricultural operations with over 2,000 pounds of animal weight per acre that generate or utilize manure. The act requires the development of a plan demonstrating that nutrients which are land applied do not exceed crop uptake.

Nutrient/Manure Management Plan: A plan prepared by a qualified professional establishing application rates for manure/fertilizer on agricultural lands to achieve a proper balance of nutrients and minimize nutrient contamination of groundwater.

Open-Loop Geothermal System: A type of geothermal heating and/or cooling system that utilizes a water-supply well and a water pump to deliver ground water to a water-source heat pump. The discharge water from the water-source heat pump may be returned to the subsurface through a recharge well or infiltration bed, or may be discharged into a pond, lake, or stream. A spring may also be the source of the ground water supply.

Preparedness, Prevention, and Contingency (PPC) Plan: A written plan that identifies an emergency response program, material and waste inventory, spill and leak prevention and response, inspection program, housekeeping program, security and external factors, which is developed and implemented to control potential discharges of pollutants other than sediment into waters of this Commonwealth. (See Section 12).

Qualified Professional: A person, who by education, experience, certification or licensure, has demonstrated expertise in a particular field. For the purpose of this ordinance, fields may include, but is not necessarily limited to professional engineering, geology, hydrogeology and soil sciences.

Regulated Substance: A product or waste, or combination of substances that, because of the quantity, concentration, physical, chemical, or infectious characteristics which if not properly treated, stored, transported, used or disposed of, or otherwise managed, would create a substantial present or potential threat to public health through direct or indirect introduction into groundwater resources and the subsurface environment. Such hazardous materials include, but are not limited to, substances regulated under Federal or State environmental, pollution control, hazardous materials, and drinking water laws and regulations.

Release: The spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing of one or more Regulated Substances upon or into any land or water within the Source Water Protection Overlay District. Release includes, without limitation, leakage of such materials from failed or discarded containers or storage systems and disposal of such materials into any on-site sewage disposal system, dry-well, catch basin, swale, drainage way.

Retention Basin: An impoundment in which stormwater is stored and not released during the storm event. Stored water may be released from the basin at some time after the end of the storm.

Secondary Containment Area: An additional layer of impervious material creating a space in which a release of a regulated substance from a storage tank may be detected before it enters the environment. This space permits a monitoring zone for leak detection methods.

Sinkhole: A localized, gradual, or rapid sinking of the land surface to a variable depth, occurring in areas of carbonate bedrock; generally characterized by a roughly circular outline, a distinct breaking of the ground surface, and downward movement of soil into bedrock voids.

Source Water Protection Area: The surface and subsurface area surrounding a water well, well field, spring, or infiltration gallery supplying a public water system, through which contaminants are reasonably likely to move toward and reach the water source. The Source Water Protection Area shall consist of the following zones:

- A. **Zone I:** The protective zone immediately surrounding a well, spring, or infiltration gallery which shall be a one-hundred (100') to four-hundred (400') foot radius, depending on site-specific source and aquifer characteristics.
- B. **Zone II:** The zone encompassing the portion of the aquifer through which water is diverted to a well or flows to a spring or infiltration gallery. Zone II shall be one-half (1/2) mile radius around the source unless a more detailed delineation is approved.
- C. **Zone III:** The zone beyond Zone II that contributes surface water and groundwater to Zones I and II.
- D. For the purpose of this Ordinance, the **Ferguson Township-Wide Source Water Protection Zone II Overlay District** encompasses the entire area of Ferguson Township.

Source Water Protection Overlay District: Wellhead protection areas surrounding public water supply wells, including Zones I, II, and the Township-Wide Source Water Protection Zone II.

Storage Tank: Any Aboveground (AST) or Underground (UST) storage tank which is used for the storage of any regulated substance.

Storage Tank – Aboveground (AST): One or a combination of stationary tanks with a total capacity in excess of 250 gallons, including underground pipes and dispensing systems connected thereto within the emergency containment area, which is or was used to contain an accumulation of regulated substances, and the volume of which, including the volume of piping within the storage tank facility, is greater than 90% above the surface of the ground. The term includes tanks which can be visually inspected, from the exterior, in an underground area. The term does not include the following, or pipes connected thereto:

- A. A tank of 1,100 gallons or less capacity used for storing motor fuel or motor oil for noncommercial purposes.
- B. A tank used for storing heating oil for consumptive use on the premises where stored.
- C. A pipeline facility, including gathering lines, regulated under:
 - (i) The Natural Gas Pipeline Safety Act of 1968 (49 U.S.C.A. App. §§1671 – 1687).
 - (ii) The Hazardous Liquid Pipeline Safety Act of 1979 (49 U.S.C.A. §§ 2001 – 2015).
 - (iii) An interstate or intrastate pipeline facility regulated under State laws comparable to the provisions of law referred to in clause (A) or (B).
- D. A surface impoundment, pit, pond, or lagoon.
- E. A stormwater or wastewater collection system.
- F. A flow-through process tank including, but not limited to, a pressure vessel and oil and water separators.
- G. A nonstationary tank liquid trap or associated gathering lines directly related to oil and gas production or gathering operations.
- H. Tanks which are used to store brines, crude oil, drilling, or frac fluids and similar substances or materials which are directly related to the exploration, development, or production of crude oil or natural gas regulated under the Oil and Gas Act (58 P.S. §§601.101 – 601.605).
- I. Tanks regulated under the Surface Mining Conservation and Reclamation Act (52 P.S. §§1396.1 – 1396.31).

- J. Tanks used for the storage of products which are regulated under the Federal Food, Drug, and Cosmetic Act (21 U.S.C.A. §§6018.101 – 6018.1003).
- K. Tanks regulated under the Solid Waste Management Act (35 P.S. §§ 6018.101 – 6018.1003) including, but not limited to, piping, tanks, collection and treatment systems used for leachate, methane gas and methane gas condensate management.
- L. A tank of 1,100 gallons or less in capacity located on a farm used solely to store or contain substances that are used to facilitate the production of crops, livestock, and livestock products on the farm.
- M. Tanks which are used to store propane gas.
- N. Tanks containing radioactive materials or coolants that are regulated under the Atomic Energy Act of 1954 (42 U.S.C.A. §§2011-2297).
- O. Tanks regulated under the act of May 2, 1929 (P.L. 1513, No. 451), known as the Boiler Regulation Law (35 P.S. §§1301 – 1500).
- P. Equipment or machinery that contains regulated substances for operational purposes such as hydraulic lift tanks and electrical equipment tanks.
- Q. A tank that contains a de minimis concentration of regulated substances.
- R. An emergency spill or overflow containment tank that is expeditiously emptied after use.
- S. Other tanks excluded by regulations promulgated under the Storage Tank and Spill Prevention Act.

Storage Tank - Exempted: Any tank or container which contains hazardous or petroleum substances, either above or underground, which is otherwise unregulated by the Storage Tank and Spill Prevention Act (STSPA), as amended. For the purpose of this ordinance, exempted tanks are limited to the following: on-premise heating fuel tanks, farm or residential motor fuel tanks with a capacity of 1,100 gallons or less, and tanks, drums, or containers with a capacity of less than 110 gallons which contain hazardous materials.

Storage Tank Facility: One or more stationary tanks, including any associated intrafacility pipelines, fixtures, monitoring devices, and other equipment. A facility may include aboveground tanks, underground tanks, or a combination of both. The associated intrafacility pipelines, fixtures, monitoring devices, and other equipment for an aboveground storage tank shall be that which lies within the secondary containment area.

Storage Tank – Underground (UST): Any one or combination of tanks (including underground pipes connected thereto) which are used to contain an accumulation of regulated substances, and the volume of which (including the volume of the underground pipes connected thereto) is 10% or more beneath the surface of the ground. The term shall not include:

- A. Farm or residential tanks of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes.
- B. Tanks used for storing heating oil for consumptive use on the premises where stored unless they are specifically required to be regulated by Federal law.
- C. A septic or other subsurface sewage treatment tank.
- D. A pipeline facility (including gathering lines) regulated under:
 - (i) The Natural Gas Pipeline Safety Act of 1968 (Public Law 90-481, 82 Stat. 720, 49 U.S.C. App. § 1671 et seq.).
 - (ii) The Hazardous Liquid Pipeline Safety Act of 1979 (Public Law 96-129, 93 Stat. 989, 49 U.S.C. § 2001 et seq.).
- E. An interstate or intrastate pipeline facility regulated under State laws comparable to the provisions of law in paragraph (4).

- F. Surface impoundments, pits, ponds, or lagoons.
- G. Storm water or wastewater collection systems.
- H. Flow-through process tanks.
- I. Liquid traps or associated gathering lines directly related to oil or gas production and gathering operations.
- J. Storage tanks situated in an underground area (such as a basement, cellar, working mine, drift, shaft, or tunnel) if the tank is situated upon or above the surface of the floor.
- K. Except for tanks subject to the requirements of 40 CFR 280 (relating to technical standards and corrective action requirements for owners and operators of underground storage tanks (UST), tanks regulated pursuant to the act of July 7, 1980 (P.L.380, No.97), known as the Solid Waste Management Act including, but not limited to, piping, tanks, collection and treatment systems used for leachate, methane gas and methane gas condensate management.
- L. Any underground storage tank system whose capacity is 110 gallons or less.
- M. Any other tank excluded by policy or regulations promulgated pursuant to this act. (Def. amended May 10, 1996, P.L.171, No.34)
- N. Fire Suppression Tanks

Underground Injection Well: A bored, drilled, driven, or dug well for the emplacement of fluids into the ground (except open loop geothermal heat pump systems).

Vertical Closed-Loop Borehole: A borehole which is constructed to receive heat exchanger loop pipes and grout material. Fill material may be used below a minimum depth of 20 feet below grade as the subsurface conditions warrant.

Water-Source Heat Pump: A heat pump that uses a water-to-refrigerant heat exchanger to extract heat from the heat source.

Water Table: Upper surface of the zone of saturation in soil or rock.

Wetland: Those areas that are inundated or saturated by surface or ground water at frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions including swamps, marshes, bogs, fens, and similar areas.

SECTION 4. APPLICABILITY

- A. This ordinance applies to land uses located or proposed within the area delineated as the Source Water Protection Overlay District, and to those land uses on parcels located within a Source Water Protection Overlay District.
- B. To the extent otherwise permitted or regulated by Federal, state and/or county statutes and regulations, the owners and/or occupiers of lots and tracts of land which are primarily utilized for the purpose of single or multi-family residential dwellings are permitted to utilize and store fuels, hazardous chemicals, pesticides, fertilizers, inflammable liquids and gases, and toxic and regulated substances listed as part of this ordinance in such quantities and in such manner as is associated with normal and responsible household use, and such limited authorization shall not be deemed a Regulated Land Use and Activity for the purposes of this Ordinance.

- i. For commercial and retail establishments that sell pre-packaged fuels, hazardous chemicals, pesticides, fertilizers, inflammable liquids and gases, and toxic and regulated substances packaged for home uses, these packaged materials shall be exempt from the requirements of this Ordinance.
- C. Both existing and proposed Agricultural Operations and/or Service Businesses defined under Section 3 shall be exempt from this ordinance, provided that individual farmers coordinate and implement best management practices through Conservation, Manure Management, Agricultural Erosion & Sedimentation, and Nutrient Management Plans and any other applicable county, state or federal regulations.
- D. On-site sewage disposal systems, both existing and proposed, must participate and fulfill requirements outlined in the regional Act 537 Plan, and comply with the Ferguson Township Chapter 18, Sewers and Sewage Disposal, Part 5, Sewage Management Program.
- E. Silvicultural and timber harvesting operations and activities shall comply with the Commonwealth's Chapter 102 regulations for Erosion & Sedimentation control and Chapter 105 permits for wetlands and streams through the Centre County Conservation District.

SECTION 5. ESTABLISHMENT AND DELINEATION OF SOURCE WATER PROTECTION OVERLAY DISTRICT AND WELLHEAD PROTECTION ZONES

The "Source Water Protection Overlay District" shall be defined as the entire area within the boundaries of Ferguson Township as set forth on the map marked as **Appendix A**, and incorporated herein by reference thereto. Source Water Protection zones have been established by the State College Borough Water Authority under the "*Source Water Protection Report, January 2007 (Revised in May 2017)*" for **Zones I and II**, and the Pennsylvania State University for **Zone II**. The Rock Springs Water Company retains established well locations within western Ferguson Township, as the Overlay Map includes a prescribed **Zone I** delineation around the well site.

- A. **Zone I:** A protective area immediately surrounding a public water supply with a radius defined by the most recently adopted State College Borough Water Authority "Source Water Protection Report", as amended:
 - 1. **DeArmit Well Field:** Wells 1, 2 & 3 = 400'
 - 2. **Wellfield #4 (Nixon):** Wells 41, 43 & 53 = 400'
 - 3. **Wellfield #5 (Chestnut Ridge):** Well 55 = 135' and Well 57 = 140'
 - 4. **Wellfield #7 (Kocher):** Wells 71, 73 & 78 = 400' and Well 79 = 140'
 - 5. **Wellfields #1 and #3 (Thomas/Harter):** No wells located within township boundary
 - 6. **Penn State University Wellfields:** Well 28A = 400' and Well 37 = No Radius
 - 7. **Rock Springs Water Company:** 400' radius around existing wells
 - i. Upon a well decommissioning by the water purveyor, the prescribed radius shall no longer be in effect upon notice of the water purveyor to Ferguson Township.
- B. **Zone II:** The area encompassing the portion of the aquifer through which water is diverted into a well and typically defined by DEP as a ½ mile radius around a well unless a more

detailed delineation is conducted. Detailed delineation was conducted as part of the State College Borough Water Authority under the “*Source Water Protection Report, January 2007 (Revised in May 2017)*” and outlined as the Source Water Protection Overlay District in **Appendix A**.

- C. Consistent with the Safe Drinking Water Act, for all construction permit applications accepted by the Department of Environmental Protection after October 9, 1995, a water supplier who is developing a community water system well, spring, or infiltration gallery that is installed for a new system or as an expansion of an existing system shall:
1. Own or substantially control through a deed restriction, or other methods acceptable to the Department, the Zone I wellhead protection area in order to prohibit activities within Zone I that may have a potential adverse impact on source water quality or quantity.
 2. Discontinue the storage, use, or disposal of a potential contaminant within the Zone I wellhead protection area unless the chemical or material is used in the production or treatment, or both, of drinking water.
 3. Eliminate the storage of liquid fossil fuel within the Zone I wellhead protection area except for providing auxiliary power to the public water system to ensure the uninterrupted of essential services during power failures or as a primary heating source only when the use of natural gas or propane gas is not a viable option.
 4. Construct any new and replacement liquid fossil fuel tanks that are within the Zone I wellhead protection area aboveground within the pump house or an enclosed, locked structure using an impermeable secondary containment structure of greater capacity than the fuel storage tank.

SECTION 6. BOUNDARY INTERPRETATION

Each application for a subdivision, land development, or zoning permit required for a Regulated Land Use and Activity (Table 1) containing land within the Source Water Protection Overlay District shall be submitted in accordance with such other applicable provisions of Ferguson Township ordinances. Any area of the Source Water Protection Overlay District that falls within the subject lot or lots shall be shown on the site plan through shading of such area or areas and identification of the impacted wellfield.

Any applicant seeking subdivision, land development or zoning permit approval for a Regulated Land Use and Activity (Table 1) in a Source Water Protection Zone shall have the burden to present evidence of the boundaries of the District in the area in question. This evidence must include applicable geographic data with respect to the property and any other pertinent documentation for consideration. The Township’s qualified professional and Planning & Zoning staff shall evaluate the information and shall make determination regarding the boundaries of lands within a particular Source Water Protection Zone. This information shall include:

1. All plans shall be on sheet sizes consistent with (the Township subdivision and land development ordinance).
2. Proposed name or identifying title of project.
3. Name and address of the landowner and developer of the project site.
4. Plan date and date of the latest revision to the plan, north point, graphic scale and written scale. All plans shall be at a scale of one hundred (100’) feet to the inch.

5. Total acreage and boundary lines of the project site and the tract of land on which the project site is located.
6. A location map, for the purpose of locating the project site to be developed, at a minimum scale of two thousand (2,000') feet to the inch, showing the relation of the tract to adjoining property and to all highways, streets, Township boundaries, and other identifiable landmarks existing within one thousand (1,000) feet of any part of the tract of land on which the project site is proposed to be developed. Map should also include Source Water Protection Zones along with the most recent aerial photography.

SECTION 7. PUBLIC WATER SUPPLIER REVIEW

- A. Prior to the commencement of any subdivision, land development or new Regulated Land Uses and Activities, as outlined in Table 1. below, the Ferguson Township Department of Planning and Zoning shall furnish a copy of plans or proposed permit application information to public water suppliers such as the State College Borough Water Authority, the Pennsylvania State University, Borough of Bellefonte, or the Rock Springs Water Company under the following requirements:
 1. The owner/applicant shall submit all pertinent information to demonstrate to the Public Water Supplier the following:
 - a. The owner/applicant meets the provisions for Regulated Land Uses and Activities in Table 1.
 2. Ferguson Township shall offer public water suppliers an opportunity to review and comment on proposed land development plans of Regulated Land Uses and Activities. Upon land development application submission, Ferguson Township Planning & Zoning staff shall forward copies of the plans and request public water supplier to review and comment within 45-days of receipt. Extraordinary development proposals may necessitate an extension of public water supplier review time, which may prompt a public water supplier request to extend the 45-day review time. All costs associated with public water supplier review shall be borne by the land development applicant. The public water supplier may waive further review of the proposed development plan, depending upon the physical location of the proposed project, and must notify Ferguson Township Planning staff, in writing, that the public water supplier opts to waive land development plan review.

SECTION 8. REGULATED LAND USES AND ACTIVITIES

The Regulated Land Uses and Activities, under Table 1. contained in this section, sets forth various Regulated Land Uses and Activities to the extent of regulation permitted in each of the zones in the Source Water Protection Overlay District. In the event of judicial decision affecting any of the Land Uses and Activities or regulations set forth herein, it is the intent of this Ordinance that any provision found to be illegal shall be stricken, and the remaining provisions shall remain in full force and effect.

Full authority for the administration/application of all criteria, terms, and conditions of this section shall be with the Zoning Administrator. Land uses and activities shall be regulated as follows:

**TABLE 1.
REGULATED LAND USES AND ACTIVITIES**

	<u>LAND USE AND ACTIVITIES</u>	<u>ZONE I</u>	<u>TOWNSHIP-WIDE SOURCE WATER PROTECTION ZONE II</u>
1.	Kennels	NOT PERMITTED	<p>A. Proof of a manure management plan and manure storage areas shall be designed in a manner to contain any accidental releases and provide optimal protection of groundwater resources.</p> <p>B. Provide a detailed description of the storage, handling, use of Regulated Substances and description of the containment structures for hazardous material storage.</p> <p>C. A detailed description of disposal procedures for Regulated Substances and wastes and name, address and telephone number of any waste haulers used.</p> <p>D. Site map location of where hazardous materials are stored, handled and used.</p>
2.	Pet Care/Daycare Facilities	NOT PERMITTED	
3.	Veterinary Office/Clinic	NOT PERMITTED	
4.	Mining and Quarrying <i>[Special Exception]</i>	NOT PERMITTED	<p>A. Location map and site plan, drawn to scale not less than 1" = 100', showing property boundaries, stockpile areas, existing reclaimed and unreclaimed lands, proposed maximum acreage of all affected lands, erosion and sedimentation control all applicable private drinking water supplies or public drinking water sources and all existing or proposed solid waste disposal areas.</p> <p>B. A detailed report by a Certified Geologist with experience in hydrogeology attesting to the depth of the seasonal water table, and plan showing benchmarked elevations for depth of excavation.</p>
5.	Regional Civic- or Faith-Based Place of Assembly	NOT PERMITTED	<p>A. Provide a detailed description of the storage, handling, use of Regulated Substances and description of the containment structures for hazardous material storage.</p> <p>B. A detailed description of disposal procedures for Regulated Substances and wastes and name, address and telephone number of any waste haulers used.</p>
6.	Regional Business-Based Place of Assembly	NOT PERMITTED	
7.	Bed and Breakfast having four to ten rooms as an accessory use to an owner-occupied single-family dwelling unit	NOT PERMITTED	<p>C. Site map location of where hazardous materials are stored, handled and used.</p>
8.	Farm Café	NOT PERMITTED	
9.	Commercial Cemeteries <i>[Special Exception]</i>	NOT PERMITTED	<p>A. All caskets shall be encased in concrete grave liners as defined by the Federal Trade Commission in regulations at part 453, as amended.</p>
10.	Mortuaries <i>[Special Exception]</i>	NOT PERMITTED	<p>A. Provide a detailed description of the storage, handling, use of Regulated Substances and description of the containment structures for hazardous material storage.</p> <p>B. A detailed description of disposal procedures for Regulated Substances and wastes and name, address and telephone number of any waste haulers used.</p> <p>C. Site map location of where hazardous materials are stored, handled and used.</p>
11.	Convenience Food Stores	NOT PERMITTED	
12.	All Retail Establishments for the sale, service, and rental of goods	NOT PERMITTED	
13.	Barbers and beauticians, caterers, health clubs, photographic equipment and processing, reading rooms, shoe repair, tailors and laundromats	NOT PERMITTED	
14.	Eating and Drinking Establishments	NOT PERMITTED	
15.	Automobile Service Stations and Garages	NOT PERMITTED	
16.	Hotels and Motels	NOT PERMITTED	<p>A. Provide a detailed description of the storage, handling, use of Regulated Substances and description of the containment structures for hazardous material storage.</p>
17.	Public and Private Garages for the storage and maintenance of motor vehicles	NOT PERMITTED	

18.	Storage and display of motor vehicles, motorcycles, mobile homes, passenger vehicles and light trucks, recreational vehicles, boats and marine craft held for sale or rental	NOT PERMITTED	<p>B. A detailed description of disposal procedures for Regulated Substances and wastes and name, address and telephone number of any waste haulers used.</p> <p>C. Site map location of where hazardous materials are stored, handled and used.</p>
19.	Archery, pistol, shotgun and skeet ranges [Special Exception]	NOT PERMITTED	<p>A. Mitigation plan for the abatement of lead contamination within range lanes and trap access.</p>
20.	Printing Establishments	NOT PERMITTED	<p>A. Provide a detailed description of the storage, handling, use of Regulated Substances and description of the containment structures for hazardous material storage.</p> <p>B. A detailed description of disposal procedures for Regulated Substances and wastes and name, address and telephone number of any waste haulers used.</p> <p>C. Site map location of where hazardous materials are stored, handled and used.</p>
21.	Incinerators [Conditional Use]	NOT PERMITTED	<p>A. Provide a detailed description of the storage, handling, use of Regulated Substances and description of the containment structures for hazardous material storage.</p> <p>B. A detailed description of disposal procedures for Regulated Substances and wastes and name, address and telephone number of any waste haulers used.</p> <p>C. Site map location of where hazardous materials are stored, handled and used.</p>
22.	The manufacture, processing or bulk storage of natural gas, petroleum, gasoline and other petroleum derivatives and explosives [Conditional Use]	NOT PERMITTED	<p>A. Provide a detailed description of the storage, handling, use of Regulated Substances and description of the containment structures for hazardous material storage.</p> <p>B. A detailed description of disposal procedures for Regulated Substances and wastes and name, address and telephone number of any waste haulers used.</p> <p>C. Site map location of where hazardous materials are stored, handled and used.</p>
23.	Wholesale Distribution and Warehouses	NOT PERMITTED	<p>A. Provide a detailed description of the storage, handling, use of Regulated Substances and description of the containment structures for hazardous material storage.</p> <p>B. A detailed description of disposal procedures for Regulated Substances and wastes and name, address and telephone number of any waste haulers used.</p> <p>C. Site map location of where hazardous materials are stored, handled and used.</p>
24.	Auto Wrecking, Junk, and Scrap Establishments [Conditional Use]	NOT PERMITTED	<p>A. Provide a detailed description of the storage, handling, use of Regulated Substances and description of the containment structures for hazardous material storage.</p> <p>B. A detailed description of disposal procedures for Regulated Substances and wastes and name, address and telephone number of any waste haulers used.</p> <p>C. Site map location of where hazardous materials are stored, handled and used.</p>
25.	Commercial or Industrial production, manufacturing, assembly, processing, cleaning, repair, storage or distribution of goods, equipment materials, foodstuffs and other products not involving a retail activity except as an accessory use	NOT PERMITTED	<p>B. A detailed description of disposal procedures for Regulated Substances and wastes and name, address and telephone number of any waste haulers used.</p> <p>C. Site map location of where hazardous materials are stored, handled and used.</p>
26.	Light manufacturing, assembly, processing, fabrication and packaging of components into finished or remanufactured products, where all	NOT PERMITTED	

	work occurs inside the building and all raw products and finished products are stored within the building		
27.	Research engineering or testing laboratories and fabrication of models or test equipment used in research [Conditional Use]	NOT PERMITTED	
28.	Manufacture, use and storage of Hazardous materials as a Principal Activity [Conditional Use]	NOT PERMITTED	
29.	Commercial Slaughtering Facilities	NOT PERMITTED	<p>A. Provide a detailed description of the storage, handling, use of Regulated Substances and description of the containment structures for hazardous material storage.</p> <p>B. A detailed description of disposal procedures for Regulated Substances and wastes and name, address and telephone number of any waste haulers used.</p> <p>C. Site map location of where hazardous material are stored, handled and used.</p>
30.	Taxidermy Shop	NOT PERMITTED	<p>A. Provide a detailed description of the storage, handling, use of Regulated Substances and description of the containment structures for hazardous material storage.</p> <p>B. A detailed description of disposal procedures for Regulated Substances and wastes and name, address and telephone number of any waste haulers used.</p> <p>C. Site map location of where hazardous material are stored, handled and used.</p>
31.	Land Application of Bio-Solids	UNDER PA DEP PERMIT CONDITIONS OF APPROVAL	
32.	Underground Injection Wells, Natural Gas Well Extraction Pads for Horizontal Drilling and Hydraulic Fracturing, Compressor Stations	NOT PERMITTED	NOT PERMITTED
33.	Liquid Petroleum Transmission Lines	NOT PERMITTED	NOT PERMITTED
34.	Commercial or Municipal Composting Facilities	NOT PERMITTED	A. Storage facilities shall be designed to have an impervious storage and loading surface, prevent infiltration of rain and surface water into storage areas and provide diking to prevent runoff from storage & loading areas.
35.	Golf Course	NOT PERMITTED	<p>A. All herbicides and pesticides shall be applied in accordance with label directions, and must be applied in accordance with an approved Nutrient Management Plan.</p> <p>B. Irrigation schedules shall be coordinated with pesticide and nutrient application to minimize the possibility of leaching/runoff.</p> <p>C. Coordination with the Penn State Cooperative Extension Service to develop and implement an Integrated Pest Management Plan.</p>
36.	Geothermal Exchange Systems (Open and Closed Loop)	NOT PERMITTED	A. Placement of such systems shall comply with the standards set forth in Chapter 10 – Well Drilling of the Centre Region Building Safety & Property Maintenance Code.
37.	Storage Tanks-Aboveground (AST)	NOT PERMITTED	<p>A. Submittal of an approved registration form indicating compliance with Permit Requirements of the Storage Tank and Spill Prevention Act (STSPA, Act of 1989, P.L. 169, No. 32) standards.</p> <p>B. Above-ground Storage Tanks shall not be located within 200' of a Zone I Boundary.</p>
38.	Storage Tanks-Underground (UST)	NOT PERMITTED	A. Submittal of an approved registration form indicating compliance with Permit Requirements of

			the Storage Tank and Spill Prevention Act (STSPA, Act of 1989, P.L. 169, No. 32) standards. B. Underground Storage Tanks shall not be located within 200' of a Zone I Boundary.
39.	Storage of Road Salt and De-Icing Materials	NOT PERMITTED	A. All salt and associated sand mix piles must be stored on an impermeable surface and covered with a waterproof material. Stockpiles shall not be located near surface waters, in flood plains, or areas with steep slopes, and shall be designed to prevent surface water runoff. Snow containing road salt shall not be brought to sites within (200') of Zone 1 for disposal. Environmentally friendly snow and ice removal products and procedures are encouraged.
40.	Application of Road Salt and De-Icing Materials		A. Ferguson Township shall monitor and record amounts of salts or de-icing materials applied to township roads during each storm event.
41.	Withdrawal or diversion of 10,000 gpd for any consecutive 30-day period from ground or surface water sources		A. Registration of the amount of the water withdrawal is required by the Susquehanna River Basin Commission.
42.	Abandonment of Wells		A. Abandonment of Wells shall comply with the standards set forth in Chapter 10 – Well Drilling of the Centre Region Building Safety & Property Maintenance Code.
43.	Well Building/Water Production Facilities		A. Provide a detailed description of the storage, handling, use of regulated substances and description of the containment structures for hazardous material storage. B. A detailed description of disposal procedures for Regulated Substances and wastes and name, address and telephone number of any waste haulers used. C. Site map location of where hazardous materials are stored, handled and used.
44.	Freight or Truck Terminals	NOT PERMITTED	A. Provide a detailed description of the storage, handling, use of Regulated Substances and description of the containment structures for hazardous material storage. B. A detailed description of disposal procedures for Regulated Substances and wastes and name, address and telephone number of any waste haulers used. C. Site map location of where hazardous materials are stored, handled and used.
45.	Medical Marijuana Growing and Processing Facility	NOT PERMITTED	A. Provide a detailed description of the storage, handling, use of regulated substances and description of the containment structures for hazardous material storage. B. A detailed description of disposal procedures for Regulated Substances and wastes and name, address and telephone number of any waste haulers used. C. Site map location of where hazardous materials are stored, handled and used.

SECTION 9. ADMINISTRATION

- A. The Zoning Administrator is hereby designated as the Township official responsible for the administration and enforcement of this Ordinance. The Ferguson Township Zoning Hearing Board shall hear variances and/or appeals from the written determinations and orders of the Zoning Administrator regarding applications, enforcement notices, cease and desist orders, and other matters, and shall also hear substantive and procedural challenges to the validity of this Ordinance.

- B. Uses of lots or tracts of land in existence on the date of enactment of this Ordinance which are Regulated Land Uses and Activities shall be deemed to be "Nonconforming Uses" of land under the terms of this Ordinance. Such Nonconforming Uses of land may be continued by the present or any subsequent owner as long as:
1. Such use is and remains otherwise lawful and in compliance with all federal, state and county environmental, pollution control, hazardous material, and drinking water laws and regulations;
 2. Such Non-Conforming use has not been and is not discontinued for a period of twelve (12) consecutive months;
 3. Such Nonconforming Use is not, after the date of enactment of this Ordinance, materially altered, changed or expanded;
 4. Such Nonconforming Use is not an actual known source of groundwater contamination as a result of a specific violation notice from the PA Department of Environmental Protection, the United States Environmental Protection Agency, or any other pertinent county, state or federal regulatory agency;
 5. Such use shall upgrade its technology on a regular basis, as the technology required by applicable law is changed, or upon request of the Township, in order to minimize the risks associated with such use to the community water resources. Such upgrades shall be a necessity to support the right to continue with the Nonconforming Use.
- C. A Regulated Land Use and Activity under Table 1 shall be deemed to be new or materially altered, changed or expanded if:
1. The land use which constitutes the Regulated Land Use and Activity was not previously present and conducted upon the lot or tract of land in question;
 2. The production and/or storage capacity of the Regulated Land Use and Activity is increased except for fluctuations resulting from the delivery of supplies to replenish stocks up to previously reported levels and the decrease attributable to proper use of the substances;
 3. The types of any substances which give rise to the Regulated Land Use and Activity is changed;
 4. The number of types of substances which give rise to the Regulated Land Use and Activity is changed;
 5. The quantity of any substances which give rise to the Regulated Land Use and Activity is materially increased; or
 6. The land area subject to the Regulated Land Use and Activity is enlarged in any respect.
- D. Application for a Special Exception shall be made to the Ferguson Township Zoning Hearing Board in writing on such form as may be prescribed by the Zoning Administrator, and such application shall include, at a minimum, a detailed description of each of the activities to be conducted upon the lot or tract of land in question which constitute a

Regulated Land Use and Activity, including a listing of all substances which are to be stored, handled, used, or produced in connection with each Regulated Land Use and Activity being proposed, and which substances are subject to regulation by federal, state, and/or county governmental authorities.

- E. The Ferguson Township Zoning Hearing Board shall issue a written determination approving or disapproving the application for a Special Exception, or conditioning the granting of the Special Exception upon adherence to any or all of the following requirements by the applicant for the Special Exception, where the Zoning Hearing Board has found that such adherence is reasonably necessary to fulfill the groundwater protection purposes of this Ordinance:
 - 1. The installation of containment facilities and systems so as to prevent the contamination of groundwater by substances regulated by federal, state, and/or county governmental authorities;
 - 2. The preparation and filing (with the Zoning Administrator) of a Spill Contingency Plan addressing the means by which any potential contamination of groundwater will be controlled, collected, and remediated, including emergency contacts and identification of potential contaminants;
 - 3. Regular inspection and/or monitoring by the owner, occupant, the Zoning Administrator, and/or third parties of the Regulated Land Use and Activity area;
 - 4. Compliance by the applicant with the provisions of the Ferguson Township Subdivision and Land Development Ordinance pertaining to sanitary sewage disposal, water supply, storm water management, and easements.
- F. Other items that may be required to characterize environmental or physical conditions of the subject property.

SECTION 10. LAND DEVELOPMENT DESIGN STANDARDS

A. General Requirements

- 1. The subdivision of land within Zone I for any purpose other than for the specific protection of the groundwater within this area shall be prohibited.
 - i. All Land Development Plans shall contain a note acknowledging the proposed project location in relation to Appendix A "Source Water Protection Overlay Map" zones. In addition, all land development plans shall note the applicant's compliance with all state and federal laws regarding chemical storage and use.
- 2. In Zone II, land development plans for Regulated Land Uses and Activity shall comply with the following requirements, in addition to Plan Review Procedures and Requirements within the Ferguson Township Subdivision and Land Development Ordinance:

A qualified professional shall review aerial photos, soils, geologic, and other available related data including any Source Water Protection Study or Report, as the data

relates to the subject property. The qualified professional shall also conduct a site inspection of the property. Based on the above information, the professional shall prepare a map of the site showing the following:

- a. Closed depressions
 - b. Open sinkholes
 - c. Seasonal high ponds and streams
 - d. Intermittent streams
 - e. Bodies of water or streams
 - f. Surface drainage patterns
 - g. Intermittent or vernal ponds
 - h. Lineaments, faults and fracture traces
 - i. Excavations and quarries
 - j. Outcrops of bedrock
3. Based on the map prepared pursuant to Section 10, paragraph A.2. above, and in conjunction with other mapping and information submitted for compliance with the requirements of the Subdivision and Land Development Ordinance, the registered design professional shall prepare a report demonstrating compliance with the requirements of this section, including any recommended mitigating measures designed to ensure compliance.
 4. The Ferguson Township qualified professional, or other appointed agent, shall review the information and recommendations made by the applicant's qualified professional and shall then report to the Ferguson Township Planning Commission and the Board of Supervisors whether the proposal meets the design requirements of this section.
 5. During construction activity, all excavations shall be protected against storm water ponding.
 6. All buildings, structures, impervious surfaces, and utilities shall be situated, designed, and constructed so as to minimize the risk of new sinkhole formation and of the accelerated introduction of contaminants and pollution into the Source Water protection area through existing or future sinkholes.
 7. Buildings, structures, impervious surfaces, utilities, and swimming pools shall not be located within fifty (50) feet of any features identified in Section 10, paragraph A.2.b.
 8. All commercial, industrial and non-residential salt or de-icing storage areas, gasoline, or other chemical storage areas shall not be located within one hundred (100') feet of any features identified in Section 10, paragraph A.2.b., A.2.c. and A.2.e.
 9. Detention, retention and infiltration facilities shall be in compliance with Chapter 26, Part 1, Stormwater Management.
 10. Storm water retention facilities, French drains, and other areas of concentrated infiltration of storm water shall be in compliance with Chapter 26, Part 1, Stormwater.
 11. Blasting activity permitting is required by the PA DEP Bureau of Mining Programs in accordance with provisions of the Administrative Code of 1929, Section 1917-A and 25 PA Code Chapter 211. For the purpose of the Source Water Protection Overlay

District and Map, blasting activity shall be permitted by Special Exception within any delineated Zone I radius. Blasting must be done per PA DEP's standards and regulations. PA DEP Limits the number and size of blasts that can go off in a sequence to limit ground motion.

- i. Prior to PA DEP permit approval and Zoning Hearing Board consideration of Special Exception, a water purveyor shall have the opportunity to review and comment on proposed blasting activity within any delineated Zone I radius.

SECTION 11. ENVIRONMENTAL EMERGENCY RESPONSE PLANS

Ferguson Township contains a variety of land uses and activities with the potential for additional development throughout the township. Some activities can pose moderate to high risk of causing environmental degradation or the endangerment of public safety through active releases of toxic, hazardous, or other pollutant materials. It is the intent of this ordinance to require such activities to follow the PA Department of Environmental Protection "***Guidelines for the Development and Implementation of Environmental Emergency Response Plans***" that encourages the consolidation of State and Federal pollution incident prevention and emergency response programs into a single plan. The Guideline has been made part of this Ordinance as Appendix B.

SECTION 12. SEVERABILITY

- A. The provisions of this Ordinance are severable, and should any article, section, subsection, paragraph, clause, phrase or provision of this Ordinance be declared by a court of competent jurisdiction to be invalid, such judgment shall not affect the validity of this Ordinance as a whole or any part or provision thereof, other than the part so declared to be invalid.
- B. Approvals issued pursuant to this Ordinance do not relieve the applicant of the responsibility to secure the required permits or approvals for activities regulated by other applicable code, rule or ordinance.

SECTION 13. REPEALER

Any ordinance of the Township which is inconsistent with any of the provisions of this ordinance is hereby repealed to the extent of the inconsistency only.

SECTION 14. EFFECTIVE DATE

This Ordinance, and all of its terms and provisions, shall become effective (30) thirty days after its adoption.

ORDAINED and ENACTED this 21st day of January 2019.

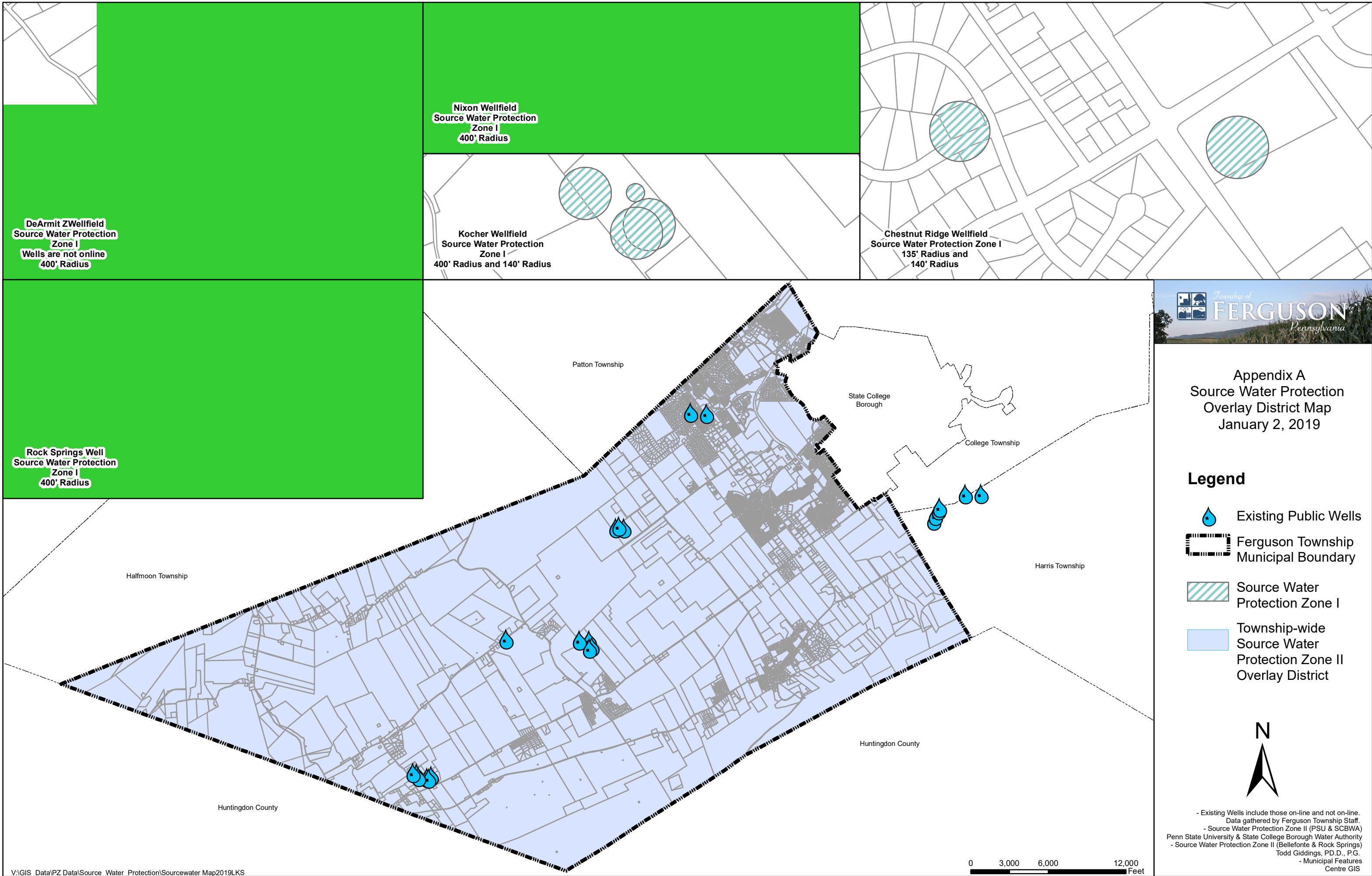
TOWNSHIP OF FERGUSON

By: _____
Peter Buckland, Chairperson
Board of Supervisors

[S E A L]

ATTEST:

David G. Pribulka, Secretary



DeArmit Z Wellfield
 Source Water Protection
 Zone I
 Wells are not online
 400' Radius

Nixon Wellfield
 Source Water Protection
 Zone I
 400' Radius

Kocher Wellfield
 Source Water Protection
 Zone I
 400' Radius and 140' Radius





Chestnut Ridge Wellfield
 Source Water Protection Zone I
 135' Radius and
 140' Radius

Rock Springs Well
 Source Water Protection
 Zone I
 400' Radius



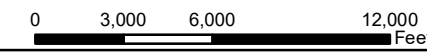
Appendix A
 Source Water Protection
 Overlay District Map
 January 2, 2019

Legend

-  Existing Public Wells
-  Ferguson Township Municipal Boundary
-  Source Water Protection Zone I
-  Township-wide Source Water Protection Zone II Overlay District



- Existing Wells include those on-line and not on-line.
 Data gathered by Ferguson Township Staff.
 - Source Water Protection Zone II (PSU & SCBWA)
 Penn State University & State College Borough Water Authority
 - Source Water Protection Zone II (Bellefonte & Rock Springs)
 Todd Giddings, P.D., P.G.
 - Municipal Features
 Centre GIS



"APPENDIX B"



**COMMONWEALTH OF PENNSYLVANIA
Department of Environmental Protection**

**Guidelines for the Development and Implementation
of Environmental Emergency Response Plans**

400-2200-001

**PA Department of Environmental Protection
PO Box 2063
Harrisburg, PA 17105-2063**

**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

DOCUMENT ID: 400-2200-001

TITLE: Guidelines for the Development and Implementation of Environmental Emergency Response Plans

EFFECTIVE DATE: April 2001
Minor changes were made throughout the document on September 7, 2004
Minor changes were made throughout the document on August 6, 2005

AUTHORITY The Federal Clean Water Act, the Pennsylvania Clean Streams Law (35 P.S. §§691.1-691.1001), the Pennsylvania Solid Waste Management Act, the Pennsylvania Storage Tank Act, the Oil Pollution Act and regulations promulgated thereunder.

POLICY: To plan and provide effective and efficient response to emergencies and accidents for any situation dealing with the public health, safety and the environment.

PURPOSE: To improve and preserve the purity of the Waters of the Commonwealth by prompt adequate response to all emergencies and accidental spills of polluting substances for the protection of public health, animal and aquatic life and for recreation.

BACKGROUND: This document is being revised to add regulatory references in Table 1 and Procedures, Item A. Revisions were made to Procedures, Items A, C, D and F. Some telephone contact names, telephone contact numbers and bureau names have been updated in Appendices IV and V. Bureau and division names have been changed on the cover page of the Addendum.

APPLICABILITY: This document provides a one stop requirement to comply with the state and federal laws and regulations dealing with emergency planning and response and pollution prevention and contingency planning requirements (plans such as PIP, SPCC, SWPPP, etc.) for all activities to be carried out in the Commonwealth.

DISCLAIMER: The policies and procedures outlined in this guidance are intended to supplement existing requirements. Nothing in the policies or procedures shall affect regulatory requirements.

The policies and procedures herein are not an adjudication or a regulation. There is no intent on the part of DEP to give the rules in these policies that weight or deference. This document establishes the framework within which DEP will exercise its administrative discretion in the future. DEP reserves the discretion to deviate from this policy statement if circumstances warrant.

PAGE LENGTH: 48 Pages

LOCATION: Vol. 33, Tab 56

**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**Guidelines for the Development and Implementation of
Environmental Emergency Response Plans**

This document (400-2200-001) provides a one stop requirement to comply with the state and federal laws and regulations dealing with emergency planning and response and pollution prevention and contingency planning requirements (i.e., PIP, SPCC, SWPPP, etc) for all activities to be carried out in the Commonwealth.

The use of the document and compliance with it are required as part of applying for any permit or requesting approval of any action that has a potential to cause pollution of the Commonwealth's air, water and land resources. The manual is also available to download from the DEP website at: www.dep.state.pa.us.

The document may be revised from time to time or as the need arises due to changes in state/federal laws and regulations. If you have suggestions for improvement to this document or desire that future revisions be sent to you, please provide the following information to the Department.

Date this request made: _____

Name _____

Street or Route _____

City _____

State _____ Zip Code _____

Telephone _____ E-mail _____

This manual could be improved by _____

- Yes, send me future revisions to the manual
- Yes, please notify me of any revisions for downloading from DEP web site.

Send to: Director, Environmental Emergency Response
Pennsylvania Department of Environmental Protection
Field Operations Deputate, RCSOB 16th Floor
P.O. Box 2063
Harrisburg, PA 17105-2063

Guidelines for the Development and Implementation of Environmental Emergency Response Plans

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Guidelines for the Development and Implementation of Environmental Emergency Response Plans

INTRODUCTION

A wide variety of industrial activities, both manufacturing and commercial, exist in Pennsylvania. Many of these activities have the potential for causing environmental degradation or endangerment of public health and safety through accidental releases of toxic, hazardous, or other polluttional materials.

In recognition of this fact, several State and Federal regulatory programs have been developed to encourage the use of preventive approaches to deal with unwarranted releases of toxic, hazardous, or other pollutants to the environment.

Table 1 lists these programs and defines the statutory and regulatory basis for each. A more detailed summary of each program is shown in Table 2 which illustrates the similarities among them. A review of the regulations and guidelines pertaining to each program more clearly illustrates these similarities. The main differences between the programs are the types of industrial activities and the nature of the polluting materials addressed.

The Department's objective is to consolidate the similarities of the State and Federal pollution incident prevention and emergency response programs into one overall program. Industrial and commercial installations which have the potential for causing accidental pollution of air, land or water, or the endangerment of public health and safety are required to develop and implement **Preparedness, Prevention and Contingency (PPC) Plans** which encompass the other Departmental program requirements.

A PPC Plan is required for any NPDES Application for Storm Water Discharge General Permits or Water Management Permits. A special addendum has been added to the document for NPDES Stormwater discharge applicants.

In the case of regulated storage tank facilities, with an aggregate aboveground storage capacity > 21,000 gallons, a **Spill Prevention Response (SPR)** plan is required. This SPR plan, in **addition to the contents** of a PPC plan, requires a specific downstream notification requirement. Those storage tank facilities that already have a PPC plan need only update the PPC plan and include the downstream notification requirement.

The Department strongly recommends that regulated facilities consolidate all required plans into one single document. For those facilities required to develop plans under SARA Title III, the Department will support deviation from the format suggested in this guidance document to ensure consistency with the SARA Title III plans provided that all required information is included in the one plan.

TABLE 1
STATE AND FEDERAL POLLUTION INCIDENT
PREVENTION AND EMERGENCY RESPONSE PROGRAMS

Plan	Implemented By	State and Federal Laws Which Apply	State and Implementing Regulations	Effective Date of Regulations
Spill Prevention Control and Countermeasure (SPCC)	U.S. EPA*	Federal Clean Water Act	40 CFR 112	1973
Preparedness, Prevention, and Contingency (PPC), or Contingency Planning	Pa. DEP as part of the Hazardous Waste Program	Pa. Solid Waste Management Act	25 Pa. Code Ch. 262a, 264a, 265a, 266a	5/01/99
	Pa. DEP as part of the Residual Waste Program	Pa. Solid Waste Management Act	25 Pa. Code Ch. 287, 288, 289, 293, 295 and 297	7/4/92
	Pa. DEP as part of the Municipal Waste Program	Pa. Solid Waste Management Act	25 Pa. Code Ch. 273, 277, 279, 281, 283 and 284	4/9/88
	Pa. DEP as part of the Oil and Gas Program ¹	Pa. Clean Streams Law, Pa Solid Waste Management Act	25 Pa. Code Ch. 91.34, 25 Pa. Code Ch. 78	1971
	Pa. DEP as part of the Water Quality Program.	PA Clean Streams Law	25 PA Code Chapter 91.34	1971
	Pa. DEP and US EPA as part of the NPDES Program	Federal Clean Water Act.	40 CFR 125 Subpart K	5/19/80
Spill Prevention Response (SPR) Plan	Pa. DEP as part of the Storage Tank Program	Pa. Storage Tank and Spill Prevention Act	Act 32-1989	8/89
Facility Response Plan (FRP)	US EPA* US Coast Guard	Oil Pollution Act	40 CFR 112	1990

(1) Complete information on PPC Plans required under the Oil and Gas Program can be found in the *Oil & Gas Operators Manual* available from the Bureau of Oil and Gas Management.

* Additional information is available from US EPA Region III, Philadelphia, PA, (215) 814-3292.

**TABLE 2
COMPARISON OF STATE AND FEDERAL POLLUTION
INCIDENT PREVENTION AND EMERGENCY RESPONSE PROGRAMS**

Aspect	Preparedness, Prevention, and Contingency (PPC) (Water)	Preparedness, Prevention, and Contingency (PPC) (Waste)	Spill Prevention Response (SPR) Plan	Spill Prevention Control, and Countermeasures (SPCC)
Purpose	Prevention/Control of accidental discharge of polluting materials to surface waste or groundwater	To minimize and abate hazards to human health and the environment from fires, explosions, or release of solid wastes to air, soil, or surface water	Prevention/Control of accidental discharge of regulated substances and downstream notification requirements	Prevention of accidental discharges of oils and hazardous substances into the waters of the United States
Types of Industrial Activities Affected	All industrial activities having potential for accidental pollution	Activities which generate, store, recycle, treat, transport, or dispose of solid wastes, activities associated with drilling and operating oil and gas wells	Activities pertaining to above ground storage facilities with >21,000 gallons of regulated substances	Non-transportation related activities with potential for discharge of oil and hazardous substances
Activities Covered?	Transportation, storage, processing of raw materials, intermediates, products, fuels, wastes	Generation, storage, transport, recycle, treatment, disposal of hazardous wastes; processing and disposal of residual or municipal wastes; road spreading operations, brine disposal	Storage and handling of regulated substances	Production, storage, processing, refining, handling, transferring, distributing
What Pollution Materials are Addressed?	All polluting materials	Any hazardous, residual, municipal, or medical wastes	Hazardous Substances and Petroleum	Oil and hazardous substances defined pursuant to Sec. 311 of the Clean Water Act

**TABLE 2 (Cont.)
COMPARISON OF STATE AND FEDERAL POLLUTION
INCIDENT PREVENTION AND EMERGENCY RESPONSE PROGRAMS**

Aspect	Preparedness, Prevention, and Contingency (PPC) (Water)	Preparedness, Prevention, and Contingency (PPC) (Waste)	Spill Prevention Response (SPR) Plan	Spill Prevention Control, and Countermeasures (SPCC)
Hazards Addressed	Container leaks, ruptures, spills, floods, power failures, mechanical failure, human error, strikes, vandalism	Same plus fires and explosions	Same	Same
Plan Includes	Study of past incidents, training, preventive maintenance, housekeeping, security, backup equipment, internal, external communicator, spill containment, drainage controls, inspections	Same plus additional local notification, emergency coordination, and evacuation requirements	Same, plus downstream notification requirement	Same
Amendments to Plan Required for Significant Facility or Operational Changes?	Yes	Yes	Yes	Yes
Emergency Incident Report Required?	Yes	Yes	Yes	Yes
Annual Notification/Updated	No	No	Yes	No

I. PROCEDURES FOR DEVELOPMENT AND REVIEW OF ENVIRONMENTAL EMERGENCY RESPONSE PLANS

A. Who Must Develop These Plans?

PPC

In general, any manufacturing or commercial installation which has the potential for causing accidental pollution of air, land, or water or for causing endangerment of public health and safety through accidental release of toxic, hazardous, or other polluting materials must develop, maintain, and implement a PPC Plan.*

Manufacturing or commercial waste water dischargers, which are required to obtain NPDES permits, must develop PPC plans in order to satisfy the requirements of Chapter 101 of the Department's Rules and Regulations. In addition to NPDES discharges there are a variety of other non-NPDES manufacturing or commercial installations which may be directed by the Department to develop PPC plans on a case-by-case basis.

Manufacturing or commercial installations which generate hazardous waste, or which involve treatment, recycling, storage, or disposal of hazardous waste must develop PPC plans in conformance with Chapter 262a, 264a, and 265a of the Department's regulations. Generators, of between 100 and 1,000 kilograms of hazardous waste per month, may not be required to have a PPC plan if they comply with the Preparedness and Prevention requirements in the regulations. (Note: hazardous waste transporters must also develop PPC plans under Chapter 263a. A separate PPC guidance document has been developed for transporters.)

A person who owns or operates a residual waste disposal or processing facility must develop a PPC plan under Chapters 287, 288, 289, 293, 295, and 297 of the residual waste regulations.

A person who owns or operates a municipal waste disposal or processing facility must develop a PPC plan under Chapters 273, 277, 279, 281, 283, and 284 of the municipal waste regulations.

In regards to the Oil and Gas Program, PPC Plans are required under the Clean Streams Law for approval of road spreading operations, drilling and operating oil and gas wells, and brine disposal wells. These plans are required under 25 Pa. Code Chapters 91.34 and 78.55. In addition, PPC Plans are required for NPDES and Part II Water Quality Management Permits. The Plan requirements are contained in the Oil and Gas Operators Manual

SPR

Facility owners with aboveground storage tank aggregate capacity > 21,000 gallons of a regulated substance.

*Note: PPC plans developed by hazardous waste generators and/or treatment, recycling, storage or disposal facilities, which would not otherwise be required to obtain NPDES or Water Quality Protection Part II permits, generally need only to address the PPC planning requirements as they pertain to their hazardous waste activity (unless otherwise directed by the Department).

B. How Do Existing Emergency Response Plans Fit in With Newer Program Requirements?

It should be noted that oil-related Spill Prevention, Control, and Countermeasure (SPCC) plans, which are or have been developed pursuant to EPA's oil-related SPCC regulations, should also be considered as part of an installation's overall PPC plan. Some installations may elect to integrate their oil-related SPCC plan with the PPC or SPR plan elements, or may elect to keep it as a separate chapter, or appendix, to the PPC or SPR plan.

Likewise, the additional downstream notification requirement of an SPR plan can be added to an existing plan to satisfy the "Storage Tank and Spill Prevention Act," providing all required elements of a SPR plan are completed for the existing plan.

Other types of existing emergency response plans should be handled in a similar manner.

C. Development and Submission of Plans for Review and Approval.

The plan must be developed in accordance with good engineering practice by someone who is familiar with the day-to-day operations at the site. If an outside consultant is employed for this purpose, he must be authorized to conduct a thorough study of the material storage, handling, usage, disposal, and waste management practices conducted at the installation.

Section II outlines the general content and format of PPC and SPR plans.

In general, plans should be submitted for review and approval by the Department in conjunction with applications for NPDES Water Quality Management, Storage Tank, Residual Waste Management, Municipal Water Management, or Hazardous Waste Management permits, as follows:

1. NPDES dischargers should submit (2) copies of the PPC plan for review, along with the NPDES application materials. All Stormwater General Permit applicants must complete and implement the Plans before or at the same time as application submission.

Facilities which are not required to obtain NPDES permits, but which must obtain Water Quality Protection Part II permits, should submit (2) copies of the PPC plan for review, along with the Part II permit application.

2. Residual waste disposal/processing/transfer/composting facilities are required to develop and submit a PPC Plan as part of the residual waste permit application. Facilities permitted under permit-by-rule are required to develop PPC Plans and maintain them on site.
3. Municipal waste disposal/processing, transfer/composting facilities are required to develop and submit a PPC plan as part of the municipal waste permit application. Facilities permitted under permit-by-rule are required to develop PPC plans and maintain them on site.

Other facilities which are not normally required to obtain NPDES or WQM Part II permits may also be required to develop and submit a PPC Plan, should conditions warrant, pursuant to Chapter 92 of the Department's regulations.

4. Hazardous waste generators are required to develop PPC plans and to maintain them on site. They are required to submit PPC plans to the Department for review upon request by the Department.
5. Hazardous waste treatment, recycling, storage, or disposal facilities should submit one copy of the PPC plan for each copy of the Hazardous Waste Part B permit application being submitted. In these situations the PPC plan is considered as part of the overall Hazardous Waste Part B permit application. Final PPC plan approval will accompany the issuance of a Hazardous Waste Management permit.
6. Aboveground storage tank facilities (with aggregate capacity >21,000 gallons) are required to submit one copy of the SPR plan to the appropriate regional DEP office for review. This plan must be developed in consultation with county and municipal emergency management agencies. Facilities that already have a PPC plan can update the PPC plan with the downstream notification requirement to satisfy this obligation.
7. Oil and gas well operators must prepare and implement a plan describing the measures to prevent pollution of the surface water and groundwater and for the control and disposal of polluttional substances and waste. A copy of the plan must be provided to the Department upon request.

D. Distribution of the Plan

A copy of the plan and any subsequent revisions must be maintained on-site. All members of the installation's organization for developing, implementing, and maintaining the plan and all emergency coordinators must review the plan and be thoroughly familiar with provisions.

In addition to the site copy and the copy submitted to the Department, other facility plans should be made available to the following agencies, to the extent which they may become involved in an actual emergency (see Description of PPC Plan Elements, Part E.1.):

Submission of copies to all of these entities is a legal requirement for hazardous waste facilities. Bulk aboveground storage tank facilities are required to submit copies to emergency management agencies, as noted below.

1. County and local Emergency Management Agencies. (This is a legal requirement for storage tank facilities with >21,000 gallons of above ground storage.)
2. Local Fire Service Agencies and/or Hazmat Team
3. Local Emergency Medical Service Agencies
4. Local Police

E. Implementation of the Plan

The provisions of the plan must be carried out whenever emergency situations arise which endanger public health and safety, or the environment.

F. Revisions of the Plan

The PPC Plan must be periodically reviewed and updated, if necessary. At minimum, this must occur when:

1. Applicable Department regulations are revised;

2. The plan fails in an emergency;
3. The installation changes in its design, construction, operation, maintenance, or other circumstances, in a manner that materially increases the potential for fires, explosions or releases of toxic or hazardous constituents; or which changes the response necessary in an emergency;
4. The list of emergency coordinators changes;
5. The list of emergency equipment changes; or
6. As otherwise required by the Department.

In addition to the above, the SPR or PPC plans must also be revised upon the removal or addition of a storage tank(s).

II. PLAN CONTENT AND FORMAT

General Instructions

- A. Table 3 outlines the basic elements of a PPC and SPR Plan. Each of these elements is further described in this guidance document. Certain plan elements may not be entirely applicable or appropriate for a specific manufacturing or commercial installation. In these cases the person preparing the plan should act accordingly and should provide a brief explanation as to why the plan element(s) in question is not applicable or appropriate.
- B. The most important thing to remember in developing your plan is that the actual effectiveness of the plan will depend upon its simplicity and readability.

Plans which are composed of several volumes of overly detailed narrative discussions and specifications tend to discourage the reader or user. Diagrams, charts, tables, maps, and plans must be easily readable and understandable, particularly in times of an actual emergency.

The plan should additionally be indexed or tabbed in such a way that the key portions which pertain to emergency response can be quickly referred to.

TABLE 3
ELEMENTS AND FORMAT OF A PPC AND SPR PLAN

- A. Description of Facility**
 - 1. Description of the Industrial or Commercial Activity
 - 2. Description of Existing Emergency Response Plans
 - 3. Material and Waste Inventory
 - 4. Pollution Incident History
 - 5. Implementation Schedule for Plan Elements Not Currently in Place

- B. Description of How Plan is Implemented by Organization**
 - 1. Organizational Structure of Facility for Implementation
 - 2. List of Emergency Coordinators
 - 3. Duties and Responsibilities of the Coordinator
 - 4. Chain of Command

- C. Spill Leak Prevention and Response**
 - 1. Pre release Planning
 - 2. Material Compatibility
 - 3. Inspection and Monitoring Program
 - 4. Preventive Maintenance
 - 5. Housekeeping Program
 - 6. Security
 - 7. External Factor Planning
 - 8. Employee Training Program

- D. Countermeasures**
 - 1. Countermeasures to be Undertaken by Facility
 - 2. Countermeasures to be Undertaken by Contractors
 - 3. Internal and External Communications and Alarm Systems
 - 4. Evacuation Plan for Installation Personnel
 - 5. Emergency Equipment Available for Response

- E. Emergency Spill Control Network**
 - 1. Arrangements with Local Emergency Response Agencies
 - 2. Notification Lists
 - 3. Downstream Notification Requirement for Storage Tanks

DESCRIPTION OF PLAN ELEMENTS

A. Description of Facility

1. Description of the Industrial or Commercial Activity

- Briefly describe the nature of the industrial or commercial activity which occurs at the site. Include a general discussion of products manufactured, manufacturing processes used, wastes generated, etc.
- On a copy of a 7 1/2 minute USES map show the following:
 - Facility location
 - Facility name
 - Facility ID #
 - Name of 7 1/2 minute USES quadrangle
 - County
 - Location of facility site and site boundaries
 - Location of each storage tank
 - Location of surface drainage courses leading away from the site, and major surface streams and tributaries near the site
 - Location of any known public and private surface water intakes downstream from the site
- Include a drawing which shows the following:
 - General layout of the site
 - Property boundaries
 - Areas occupied by manufacturing or commercial activities
 - Raw materials and product storage
 - Loading and unloading operations
 - High risk areas where spills and leaks most likely would occur
 - Waste handling, storage, and treatment facilities
 - Drains, pipes, and channels which lead away from potential leak or spill areas
 - Outfall pipes which discharge to surface streams or drainage channels
 - Secure and open-access areas
 - Entrance and exit routes to the site

2. Description of Existing Emergency Response Plans

- Briefly describe any existing plan, which has been previously developed by the installation, for the purpose of pollution incident prevention or emergency response preparedness. If the plan has previously been

approved by the Department, this should also be noted, along with the date of approval.

- Provide a brief discussion as to how the existing plan relates to the overall PPC or SPR Plan being developed. The degree to which the existing plan encompasses some, or all, of the PPC/SPR Plan elements should also be noted. When the PPC has been developed and an SPR plan is needed, the downstream notification requirement information can be added as an addendum.

Similar plans which have been prepared for agencies other than DEP should also be described and cross-referenced to the maximum extent possible to the PPC Plan elements so as to minimize rewriting. For example, an oil related Spill Prevention Control and Countermeasure (SPCC) Plan which has been developed to comply with EPA's regulations 40 CFR 112, may be treated as an appendix, or as a separate chapter, to the overall PPC/SPR Plan for an installation.

3. Material and Waste Inventory

- Identify and list by common chemical name and trade name, the locations, sources and quantities of raw chemical materials, commercial chemical products, manufacturing chemical intermediates, and process wastes managed at the installation which have the potential for causing environmental degradation or endangerment of public health and safety through accidental releases. Requests for confidentiality of this information will be handled in accordance with Department regulations.

Detailed descriptions must be available for materials that have a high potential for spills, discharges, explosions, or fires (such as those stored in bulk storage). Materials that have a low potential for spills, discharges, explosions, or fires (such as those used and stored in small quantities in a laboratory) should be minimally detailed.

This information should be used to evaluate the prevention, containment, mitigation, cleanup, and disposal measures which would be used in the event of a spill, discharge, explosion, or fire. As new materials are added to the list, their pollution potential should be evaluated.

- Attach to this plan the Material Safety Data Sheet (MSDS) for each material in storage (the MSDS must be completed to the extent it meets the requirements of 29 CFR 1910.1200(9) Hazardous Communications Standard Requirements).

4. Pollution Incident History

- List the previous pollution incidents, the date, the material or waste spilled, approximate amount spilled, environmental damage, and action taken to prevent a recurrence.

An important criteria in determining the effectiveness of the plan and its implementation is the history of incidents at the installation. A history of no incidents suggest that the practices and procedures at the site are effective. For a site with a history of incidents, it is important to

investigate the reasons for the spills and the response of the company in minimizing the potential for their recurrence.

5. Implementation Schedule for Plan Elements Not Currently in Place

- Provide a list of any missing or incomplete aspects of the plan and a time schedule when they will be implemented.

An implementation schedule, or any elements of the plan not currently in place, must be developed. Each missing or incomplete aspect of the plan should be addressed and discussed within the applicable elements of the plan. Missing or incomplete aspects must be implemented as soon as possible and in conformance with all Department regulations and requirements.

B. Description of How Plan is Implemented by Organization

1. Organizational Structure of Facility for Implementation

- Describe the organizational structure for implementation of the plan.
- Describe the duties and responsibilities of the individuals within the organization that will implement the plan.

Each installation must develop a permanent organizational structure for developing, implementing, and maintaining the plan. The exact nature and make-up of this structure will vary considerably, depending upon the size and complexity of the installation.

For example, a large manufacturing company may either establish a formal preparedness-response committee, or it may assign this responsibility to an existing organization within the company, such as a safety committee or a preventive maintenance group. A small manufacturing or commercial facility may only have one or two individuals responsible for developing and implementing the plan. However, the preparedness-response organization, regardless of its size, must be given both the responsibility and authority by management for developing, implementing, and maintaining the plan.

The main duties and responsibilities of the preparedness-response organizational structure should include identification of materials and wastes handled (materials inventory), identification of potential spill sources (risk assessment), establishment of spill-reporting procedures, visual inspection programs review of past incidents and spills, and countermeasures utilized. In addition, the preparedness-response organizational structure should be responsible for coordination needed to implement the goals of the plan, coordination of the activities for spill cleanup, notification of authorities and establishment of training and educational programs for installation personnel.

The preparedness response organizational structure should have the overall responsibility for periodically reviewing and evaluating the plan and instituting appropriate changes at regular intervals. The organizational structure should also be responsible for the review of new construction and process changes at an installation relative to the plan.

The organizational structure should also evaluate the effectiveness of the overall plan and make recommendations to management on related matters.

2. List of Emergency Coordinators

- Provide an up-to-date list of names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator. Where more than one is listed, one must be named as the primary coordinator, and others shall be listed in the order in which they will assume responsibility as alternates.

At all times there must be at least one employee either on the installation's premises or on-call with the responsibility for coordinating all emergency response measures. The emergency coordinator must be thoroughly familiar with all aspects of the plan, all operations and activities, the location and characteristics of all materials handled, the location of all records and the lay out of the installation. In addition, this individual should have the authority to commit the resources necessary to carry out the plan.

3. Duties and Responsibilities of the Coordinator

- Describe the duties and responsibilities of the emergency coordinator specific to your installation or activity in the event of an imminent or actual emergency.

During an emergency, the emergency coordinator should activate alarm systems, notify emergency response agencies, identify the problem, assess the health or environmental hazards, and take all reasonable measures to stabilize the situation. The emergency coordinator should also be responsible for follow-up activities after the incident such as treating, storing, or disposing of residues and contaminated soil, decontamination and maintenance of emergency equipment, and submission of any reports. Appendix I describes some example duties and responsibilities of the emergency coordinator.

4. Chain of Command

- Provide an internal list, by position, of key employees that must be contacted in the event of an emergency or spill.

List the positions, office telephone extensions, and home phone numbers (if applicable) of key employees, in the order of responsibility that would be contacted in the event of an emergency or spill.

This list, along with the notification procedure, should be posted on bulletin boards or other conspicuous locations around the installation.

C. Spill Leak Prevention and Response

1. Pre-release Planning

- Describe the sources and areas where potential spills and leaks may occur, the direction of flow of spilled materials, and the pollution incident prevention practices (see Appendix II) specific to the source or area.

- Provide separate drawings, plot plans (or include in the general layout drawings), showing sources and quantities of materials and wastes. Sources and areas where potential spills may occur, and pollution incident prevention practices (see Appendix II).

The plan should include a prediction of the direction of the flow of materials spilled as a result of equipment failure, accident, or human error. Particular care and attention should be paid to evaluating the following: raw materials storage, in plant transfer, process and materials handling, intermediary and product storage (if applicable), truck and rail car loading and unloading, and waste handling and storage. Describe and identify valving for the storage tank and system to be used to partition off each storage tank in case of a release.

Liquid storage areas must have containment capacity sufficient to hold the volume of the largest single container or tank, plus a reasonable allowance for precipitation based on local weather conditions and plant operations. Containment systems must be sufficiently impervious to contain spilled material or waste until it can be removed or treated. Tank or container materials must be compatible with the material or waste stored.

Pollution incident prevention practices to eliminate contaminated runoff, leaching, or windblowing must be implemented in non liquid storage areas. Provisions must be made to contain or manage contaminated run-off or leachate from these areas.

Piping, processing, and materials handling equipment at in-plant transfer, process, and materials handling areas must be designed and operated so as to prevent spills. Containment practices should be instituted at processing and handling areas including floor drains, storm sewers, or drainage swales to prevent an accidental discharge. Protection such as covers or shields to prevent windblowing, spraying, and releases from pressure relief valves from causing a discharge should be provided as appropriate.

Truck and rail car loading and unloading areas must have sufficient containment capacity to hold the volume of the largest tank truck or rail car loaded or unloaded at the installation, plus a reasonable allowance for precipitation. Any overhead piping must have adequate clearance over roadways. Containment systems must be sufficiently impervious to contain spilled material or waste until it can be removed or treated.

2. Material Compatibility

- Summarize the engineering practices followed with regard to material compatibility such as materials of construction, corrosion, etc.

Engineering practices with regard to material compatibility normally consist of an appraisal of the compatibility of construction materials of tanks, pipelines, etc., with their contents; the reaction of materials or wastes when intentionally or inadvertently mixed or combined; and, the compatibility of a container such as a storage tank or pipeline with its environment.

Specific consideration should be given to the procedures and practices delineating the mixing of materials and prohibiting mixing of incompatible materials which may result in fire, explosion, or unusual corrosion. Thorough cleaning of storage vessels and equipment before reuse should be standard practice to ensure that there is no residual incompatible with the next or later materials used. Coatings or cathodic protection should be considered for protecting buried pipelines or storage tanks from corrosion.

3. Inspection and Monitoring Program

- Describe the type and frequency of inspections and monitoring for leaks or other conditions that could lead to spills or emergency situations.

Typical inspections include the following: pipes, pumps, valves, and fittings for leaks; tanks for corrosion; tanks supports and foundations for deterioration; chemical material piles for windblowing; evidence of spilled materials along drainage ditches; effectiveness of housekeeping practices; damage to shipping containers; leaks, seeps, or overflows at waste treatment, storage, or disposal sites; etc. Areas that should be inspected include the following: storage, loading and unloading, transfer pipelines, waste treatment facilities, and disposal sites. The use of an inspection checklist may be useful in an inspection and monitoring program.

Routine monitoring should be performed to determine the physical conditions and liquid levels in tanks, the quality of plant site runoff in diked areas, etc., either by manual testing or in-situ instrumentation. Monitoring should be used to initiate a warning of the need for immediate corrective action to prevent a spill or other emergency condition. Monitoring systems should be used in conjunction with a communications or alarm system to immediately notify personnel of abnormal conditions.

An inventory system should also be considered for keeping track of those materials having the greatest potential for causing problems due to leaks, spills, or mishandling.

As a minimum, the frequency of inspection and monitoring must be in accordance with the applicable Department regulations and permits. Appendix II includes some additional inspection and monitoring examples.

4. Preventive Maintenance

- Describe the aspects of the preventive maintenance program for equipment and systems relating to conditions that could cause environmental degradation or endangerment of public health and safety.

Describe the procedures for the correction of those conditions by adjustment, repair, or replacement before the equipment or system fails.

A good preventive maintenance program includes the following:
(1) identification of equipment and systems to which the program should apply; (2) periodic inspections of identified equipment and systems; (3) periodic testing of equipment and systems, (such as routine calibration

of environmental monitoring equipment); (4) appropriate adjustment, repair, or replacement of parts; and (5) complete recordkeeping of the preventive maintenance activities, inspection and test results, calibration dates, repairs, replacement, and adjustments to the applicable equipment and systems.

5. Housekeeping Program

- Identify the areas and the type of housekeeping practices that should apply to reduce the possibility of accidental spills and safety hazards to plant personnel.

Examples of good housekeeping include the following: neat and orderly storage of chemicals; prompt removal of small spillage; regular refuse pickup and disposal; maintenance of dry, clean floors by use of brooms, vacuum cleaners, or cleaning machines; and, provisions for the storage of containers or drums to keep them from protruding into open walkways, pathways, or roads.

Dry chemicals should be swept or cleaned up to prevent possible washdown to drains and drainage ditches or windblowing of the material to other areas of the plant. Small liquid accumulations on the ground or on a floor in a building should be cleaned up to prevent discharge or transport to other areas. See Appendix I for additional examples.

6. Security

- Describe the security procedures employed at the installation to prevent accidental or intentional entry that could result in a violation of Departmental regulations, or injury to persons or livestock.

Security systems described in the plan should address, as necessary: fencing; lighting; vehicular traffic control; access control; visitors passes; locked entrances; vandalism; locks on drain valves and television monitoring. Security procedures must be in accordance with applicable Department regulations.

7. External Factor Planning

- Describe the possible effects of power outages, strikes, floods, snowstorms, etc., and the action to be taken to alleviate any resulting effects to public health and safety or the environment.

8. Employee Training Program

- Summarize the training program given to employees which will enable them to understand the processes and materials with which they are working, the safety and health hazards, the practices for preventing, and the procedures for responding properly and rapidly to spills.

At a minimum, the training program must be designed to ensure that personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment systems including, where applicable: procedures for using, inspecting, repairing, and replacing emergency and monitoring equipment; key parameters for

automatic cut-off systems; communications and alarm systems; response to fires and explosions; site evacuation procedures; and shut down of operations.

In addition the employee training program should address other aspects of the preparedness-response program such as preventive maintenance, inspection and monitoring, housekeeping practices, etc. The training program must be designed and conducted in accordance with applicable Department regulations. Records of the employees' attendance in the training program should be included in personnel files.

D. Countermeasures

1. Countermeasures to be Undertaken by Facility

- Provide specific countermeasures which will be undertaken by facility personnel in the event of a release. Include valve activations, equipment isolations, flow diversions, boom deployment, and any other activities which will be undertaken to halt the migration of the contaminant off site and to mitigate the consequence of the release.

2. Countermeasures to be Undertaken by Contractors

- Provide a list of emergency response contractors, phone numbers, and the services they will provide.

The services of nearby contractors should be investigated and arrangements made for the prompt performance of contractual services on short notice. Equipment suppliers should be contacted to determine the availability and means of delivery of equipment needed for removing pollution or hazards to the public health and safety. Describe arrangements with these contractors and the time frame in which they can respond with required equipment.

3. Internal and External Communications and Alarm Systems

- Describe the internal communications or alarm used to provide immediate emergency instruction (voice or signal) to installation personnel.
- Describe the external communications or alarm system used to summon emergency assistance from local police or fire departments.

Examples of communications or alarm systems are: hand held two way radios; CB radios; telephones; fire or police alarms; PA systems; beeper or voice pagers, etc.

4. Evacuation Plan for Installation Personnel

- Describe the evacuation plan for facility personnel where there is a possibility that evacuation could be necessary.

The plan must describe signals to be used to begin evacuation, primary evacuation route, and alternate evacuation routes (in cases where primary routes could be blocked by releases of hazardous materials, wastes, gases, or fires). Periodic drills should be conducted to evaluate the effectiveness of the plan.

5. Emergency Equipment Available for Response

- Provide an up-to-date list of available emergency equipment. The list must include the location, a physical description, and a brief description of the intended use and capabilities of each item on the list.
- Describe the procedures for maintenance and decontamination of emergency equipment.

All installations should have equipment available to allow personnel to respond safely and quickly to emergency situations. Some examples of emergency equipment are portable fire extinguishers, fire control equipment (including special extinguishing equipment such as that using foam, inert gas, or dry chemicals), spill control equipment, decontamination equipment, self contained breathing apparatus, gas masks, and emergency tool and patching kits. See Appendix III for more examples.

All equipment must be tested and maintained as necessary to assure its proper operation in time of emergency. After an emergency, all equipment must be decontaminated, cleaned, and fit for its intended use before normal operations resume.

E. Emergency Spill Control Network

1. Arrangements with Local Emergency Response Agencies and Hospitals

- Provide a list of local emergency response agencies and hospitals. Include the phone numbers and describe arrangements concerning the emergency services they will provide.

Arrangements must be made, as appropriate, to inform local emergency response agencies, and hospitals concerning the type of materials or wastes handled at the installation and the potential need for services. Arrangements should be made which will designate who will be the primary emergency response agency and who will provide support services during emergencies.

Efforts should be made to familiarize police, fire departments, emergency response teams, and the County Emergency Management Coordinator with the layout of the installation, the properties and dangers associated with the hazardous materials handled, places where personnel would normally be working, entrances to roads inside the facility, and the possible evacuation routes. At a minimum, this requirement must be in accordance with applicable Department regulations.

2. Notification Lists

- Provide a list of agencies and phone numbers that must be contacted in the event of an emergency or spill.

A list must be developed for notifying State, local, and Federal regulatory agencies of all spills. Such a list should include, as applicable: PA DEP (see Appendix IV); PA Emergency Management Agency; County Health Department; County EMA; PA Fish Commission; the National Response

Center (U.S. EPA and U.S. Coast Guard); local police and fire departments; the local sewage treatment plant (for discharges to sewer system); and downstream public water supplies, industrial water users, and recreation areas.

3. **Downstream Notification Requirement for Storage Tanks**

- This is an additional requirement of storage tank facilities with aggregate aboveground storage >21,000 gallons of regulated substances. It can be added to an updated PPC plan so as to meet the SPR plan requirement.

The requirement includes a 20-mile downstream Notification List, an annual notification requirement, and an annual Notification List update. Lists of downstream users may be developed from information provided by your county Emergency Management Agency.

Downstream Notification List shall include all municipalities and surface water users within 20 downstream miles of the tank facility. Surface water users include drinking water companies, and industries that utilize surface water intakes; and municipalities include each county, township, city and borough located within this downstream corridor. This list is to be developed via assistance from the local emergency management agency. (Refer to Appendix V for an example.)

Annual Written Notification must be given to downstream water users and municipalities on the Notification List. This written notification at a minimum must include a detailed inventory of the type and quantity of material in storage at the facility.

Annual Update must be developed each year in cooperation with the local Emergency Management Agency. This Notification List update will show any changes in contacts, users, telephone #'s needed for emergency downstream notification and the annual written notification. Also, any changes in the emergency response organization (such as telephone numbers) should be updated.

APPENDIX I
EXAMPLES OF AN EMERGENCY COORDINATOR'S DUTIES
AND RESPONSIBILITIES

Whenever there is an imminent or actual emergency situation, the emergency coordinator must immediately:

1. Activate facility alarms or communications systems, where applicable, to notify facility personnel; and
2. Notify local emergency response agencies including the Department.

Whenever there is an emission or discharge, fire, or explosion, the emergency coordinator must immediately identify the character, exact source, amount, and areal extent of emitted or discharged materials. He may do this by observation or review of records and, if necessary, by chemical analysis.

Concurrently, the emergency coordinator must assess possible hazards to human health or the environment that may result from the emission or discharge, fire, or explosion. This assessment must consider both direct and indirect effects of the emission, discharge, fire, or explosion.

If the emergency coordinator determines that the installation has had an emission, discharge, fire, or explosion which would threaten human health or the environment, he must immediately notify the applicable local authorities including the county emergency management agency and indicate if evacuation of local areas may be advisable; and immediately notify the Department in accordance with Appendix IV; the National Response Center; and the Pennsylvania Emergency Management Agency; and report the following:

- a. Name of the person reporting the incident
- b. Name and location of the installation
- c. Phone number where the person reporting the spill can be reached
- d. Date, time, and location of the incident
- e. A brief description of the incident, nature of the materials or wastes involved, extent of any injuries, and possible hazards to human health or the environment
- f. The estimated quantity of the materials or wastes spilled, and
- g. The extent of contamination of land, water, or air, if known.

When there is a release from an aboveground storage tank which threatens the water supply of downstream users, these downstream users (on the Downstream Notification List) must be notified within 2 hours of the release. Priority for notification is by closest proximity to the release site.

During an emergency, the emergency coordinator must take all reasonable measures necessary to ensure that fire, explosion, emission, or discharge do not occur, reoccur, or spread to other materials or wastes at the installation. These measures shall include where applicable, stopping manufacturing processes and operations, collecting and containing released materials or wastes, and removing or isolating containers.

If the installation stops operations in response to a fire, explosion, emission, or discharge, the emergency coordinator must ensure that adequate monitoring is conducted for leaks, pressure

buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

Immediately after an emergency, the emergency coordinator, with Departmental approval, must provide for treating, storing, or disposing of residues, contaminated soil, etc., from an emission, discharge, fire, or explosion at the installation.

The emergency coordinator must insure that in the affected areas of the installation, no material or waste incompatible with the emitted or discharged residues is processed, stored, treated, or disposed of until cleanup procedures are completed; and, all emergency equipment listed in the plan is cleaned and fit for its intended use before operations are resumed.

Within 15 days after the incident, the installation must submit a written report on the incident to the Department. The report must include the following:

- a. Name, address, and telephone number of the individual filing the report
- b. Name, address, and telephone number of the installation
- c. Date, time, and location of the incident
- d. A brief description of the circumstances causing the incident
- e. Description and estimated quantity by weight or volume of materials or wastes involved
- f. An assessment of any contamination of land, water, or air that has occurred due to the incident
- g. Estimated quantity and disposition of recovered materials or wastes that resulted from the incident, and
- h. A description of what actions the installation intends to take to prevent a similar occurrence in the future.

APPENDIX II POLLUTION INCIDENT PREVENTION PRACTICES

Pollution incident prevention practices can be divided into the following four categories: prevention, containment, mitigation and ultimate disposition. The listings below provide specific examples of each category.

1. PREVENTION

Visual Observations of:

- Storage facilities
- Transfer pipelines
- Loading and unloading areas
- Waste handling and storage areas

Detailed Inspections of:

- Pipes, pumps, valves, and fittings for leaks
- Tanks for corrosion (internal and external)
- Dry material or waste stockpiles for windblowing
- Tanks supports or foundations for deterioration
- Walls for stains
- Drainage ditches and areas around old tanks for evidence of spilled materials
- Primary or secondary containment for deterioration
- Housekeeping practices
- Shipping containers for damage
- Material or waste conveyance systems for leaks, spills, or overflows
- Integrity of stormwater collection systems
- Waste storage, treatment, or disposal sites for leaks, seeps, and overflows

Monitoring

- Liquid-level detectors
- Alarm systems
- Pressure and temperature gauges
- Analytical testing instrumentation
- Pressure drop shut-off devices
- Flow meters
- Valve positioning indicators
- Equipment operational lights
- Excess-flow valves
- Automatic runoff diversion devices
- Routine sample collection (including groundwater and monitoring wells)
- Redundant instrumentation
- Records (all monitoring results/findings)

Nondestructive Testing

- Hydrostatic pressure tests
- Acoustical emission tests
- Radiographic tests
- Magnetic particle tests
- Liquid Penetration
- Records of tank wall thicknesses and results of all testing

2. CONTAINMENT

Secondary Containment

- Dikes
- Curbs
- Depressed areas
- Storage basins
- Sumps
- Drip pans
- Liners
- Double piping
- Sewer collection systems

Flow Diversion

- Trenches
- Drains
- Graded pavement
- Grating
- Overflow structures
- Sewers
- Culverts

Vapor Control

- Water spray
- Vapor space
- Vacuum exhaust

Dust Control

- Hoods
- Cyclone collectors
- Bag-type collectors
- Filters
- Negative-pressure systems
- Water spraying

Sealing

- Foamed plastic compounds used for plugging leaks in tanks

3. MITIGATION

Physical Clean-up

- Brooms
- Shovels
- Plows

Labeling

- U.S. DOT or National Fire Protection Association's (NFPA) designation on tanks and pipelines
- Color coding of tanks and pipelines
- Warning signs

Vehicle Positioning

- Physical barriers (e.g., wheel chocks)
- Underlying drains
- Designated loading and unloading areas

Covering

- Tarpaulins over outdoor dry waste or material stockpiles
- Buildings or roofs over outside processes or stockpiles
- Vegetation, rock, or synthetic covering on surface impoundments

Pneumatic and Vacuum Conveying

- Loading and unloading by air pressure or vacuum
- Safety relief valves
- Dust collectors
- Air slide trucks and rail cars

Preventive Maintenance

- Periodic inspections
- Periodic testing to determine soundness of system
- Identification of equipment and systems that need to be upgraded, repaired, or replaced
- Appropriate adjustment, repair, or replacement of parts
- Complete recordkeeping of all repairs, upgrading, replacements, and adjustments; and all testing findings/results after system modifications were made

Good Housekeeping

- Neat and orderly storage of chemicals
- Prompt removal of small spillage
- Regular garbage pickup and disposal
- Maintenance of dry, clean floors by use of brooms, vacuum cleaners, etc.
- Maintenance of proper spacing for pathways and walkways between containers and drums
- Stimulation of employee interest in good housekeeping

Employee Training Programs

- Materials Inventory Systems
- Material Safety Data Sheets

Mechanical Clean up

- Vacuum systems
- Pumps
- Pump/bag system

Chemical Clean up

Sorbents

- activated carbon
- polyurethane and polyolefin spheres, beads, and foam belts
- amorphous silicate glass foam
- clay
- sawdust

Gelling agents

polyelectrolytes
polyacrylamide
butylstyrene copolymers
polyacrylonitrile
polyethylene oxide

Foams

rockwood alcohol
protein
fluoroprotein
aqueous film-forming foam
polar liquid foam
surfactant-based foam

Volatilization

distillation
stripping
evaporation

Carbon absorption
Coagulation/precipitation
Neutralization
Ion exchange
Chemical oxidation
Biological treatment

4. ULTIMATE DISPOSITION

Thermal oxidation
Land disposal
Recycle
Recover
Reuse
Detoxification

APPENDIX III EXAMPLES OF EMERGENCY EQUIPMENT

Special equipment is often required and may be needed quickly in an emergency. Examples include the following:

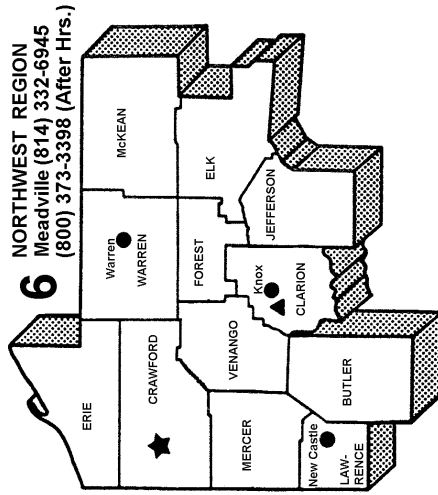
Aerial ladder	Forklift
Absorbant materials	Fuel Supply
Accident investigation kit	Geiger counter
Air compressor	Generator trailer
Air supply, for breathing equipment	Heaters, portable
Backhoe	Helicopter
Basket stretchers	Hydraulic spreader jacks
Bulldozer	Inhalator
Bullhorn	Jack hammer
Camera/photo equipment	Jacks
Cellar pump	Ladder Truck
Chain hoist	Lighting equipment, portable
Chain saw	Medical supplies
Chemical neutralizers	Metal saw (power)
Crane	Public address system
Cutters (power)	Radio
Decontamination equipment with a clean Resuscitator water supply (70-80°F)	Resuscitator
Ejector - smoke	Sand supply
Elevated platform truck	Self-contained breathing apparatus (SCBA)
Explosimeters	Self-contained underwater breathing apparatus (SCUBA)
Fans	Submersible pump
Firefighting equipment	Tank truck
First aid supplies	Tool box
Foam concentrate supply	Welding/cutting equipment
Foam generators	Water pump

**APPENDIX IV
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
EMERGENCY NOTIFICATION NUMBERS**

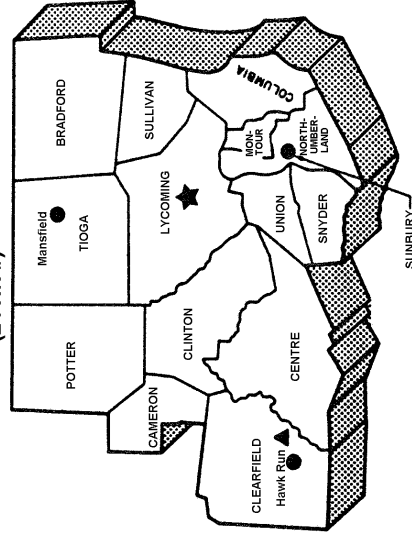
STATEWIDE EMERGENCY NOTIFICATION NUMBER (800) 541-2050 (PA ONLY)

OR (717) 787-4343

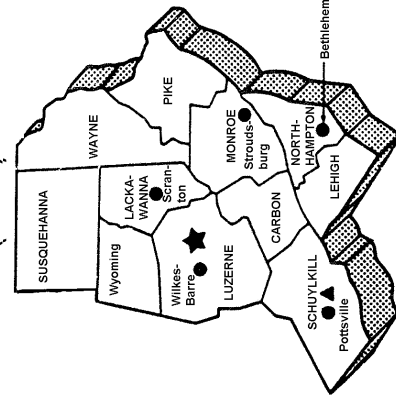
(To Be Used If There Is A Problem In Contacting The Region)



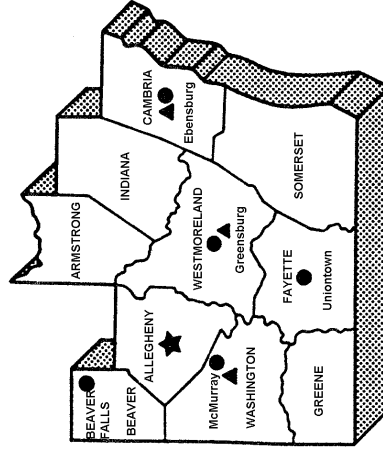
6 NORTHWEST REGION
Meadville (814) 332-6945
(800) 373-3398 (After Hrs.)



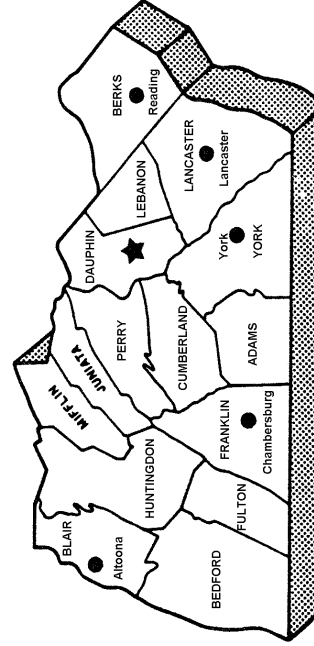
4 NORTHCENTRAL REGION
Williamsport (570) 327-3636
(24 Hr. #)



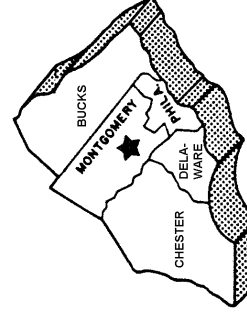
2 NORTHEAST REGION
Wilkes-Barre (570) 826-2511
(24 Hr. #)



5 SOUTHWEST REGION
Pittsburgh (412) 442-4000
(24 Hr. #)



3 SOUTHCENTRAL REGION
Harrisburg (717) 705-4700
(877) 333-1904



1 SOUTHEAST REGION
Norristown (484) 250-5900
(24 Hr. #)

LEGEND: ★ REGIONAL OFFICES ● DISTRICT OFFICES ▲ MINING OFFICES

APPENDIX V
PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
Field Operations--Environmental Cleanup Program
Regional Storage Tank List

Region	Contact
Southeast Regional Office 2 East Main Street Norristown, PA 19401-4915 Telephone: (484) 250-5900	Kathy Nagle
Northeast Regional Office 2 Public Square Wilkes-Barre, PA 18711-0790 Telephone: (570) 826-2511	Ron Brezinski
Southcentral Regional Office 909 Elmerton Avenue Harrisburg, PA 17110-8200 Telephone: (717) 705-4700	Gregory Bowman
Northcentral Regional Office 208 W. Third Street Williamsport, PA 17701 Telephone: (570) 327-3636	Steve Webster
Southwest Regional Office 400 Waterfront Drive Pittsburgh, PA 15222 Telephone: (412) 442-4000	Gale Campbell
Northwest Regional Office 230 Chestnut Street Meadville, PA 16335 Telephone: (814) 332-6945	Daniel F. Peterson

In the event no contact with the Regional Office is made, the Department Emergency number (717) 787-4343 shall receive calls during and after business hours, 24 hours daily and holidays and weekends.

Oil and Gas Management Program

South Regional Office 400 Waterfront Drive Pittsburgh, Pa 15222-4745 (412) 442-4000	David F. Janco
Northwest Regional Office 230 Chestnut Street Meadville, PA 16335 (814) 332-6945	Craig Lobins

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
Field Operations--Water Management

Region	Contact
Southeast Regional Office 2 East Main Street Norristown, PA 19401-4915 Telephone: (484) 250-5900	James Newbold
Northeast Regional Office 2 Public Square Wilkes-Barre, PA 18711-0790 Telephone: (570) 826-2511	Kate Crowley
Southcentral Regional Office 909 Elmerton Avenue Harrisburg, PA 17110-8200 Telephone: (717) 705-4700	Jim Spontak
Northcentral Regional Office 208 W. Third Street Williamsport, PA 17701 Telephone: (570) 327-3636	Daniel Alters
Southwest Regional Office 400 Waterfront Drive Pittsburgh, PA 15222 Telephone: (412) 442-4000	Steve Balta
Northwest Regional Office 230 Chestnut Street Meadville, PA 16335 Telephone: (814) 332-6945	Dave Milhous

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
Field Operations--Waste Management
Regional Contact

Region	Contact
Southeast Regional Office 2 East Main Street Norristown, PA 19401-4915 Telephone: (484) 250-5900	Facilities Manager
Northeast Regional Office 2 Public Square Wilkes-Barre, PA 18711-0790 Telephone: (570) 826-2511	Facilities Manager
Southcentral Regional Office 909 Elmerton Avenue Harrisburg, PA 17110-8200 Telephone: (717) 705-4700	Facilities Manager
Northcentral Regional Office 208 W. Third Street Williamsport, PA 17701 Telephone: (570) 327-3636	Facilities Manager
Southwest Regional Office 400 Waterfront Drive Pittsburgh, PA 15222 Telephone: (412) 442-4000	Facilities Manager
Northwest Regional Office 230 Chestnut Street Meadville, PA 16335 Telephone: (814) 332-6945	Facilities Manager

APPENDIX VI
IGMARS STORAGE FACILITY
Harrisonberg, PA
Example
DOWNSTREAM NOTIFICATION LIST FOR YEAR 1992

Facility	Address	Mile Mark	Contact	Telephone
Harrison County	PO Box 15 Harrison Co. Courthouse Harrisonberg, PA	-	Ronald Swoyer Co. Emergency Mgt. Coordinator	Office: (717) 674-1212 Emergency: (717) 674-3434
Greenly Township	PO Box 498, RD 1 Harrisonberg, PA 19865	0	Donald Trump	Office: (717) 765-3468 Emergency: (717) 765-4579
Harrisonberg City	PO Box 21, City Hall Harrisonberg, PA 19869	3	Jay Miller	Office: (717) 674-2185 Emergency: (717) 674-2194
Harrisonberg Water	Harrisonberg, PA	6	Richard Miles	Office: (717) 254-8904 Emergency: (717) 254-8910
Harrison Township	Harrison Township Building Krissville, PA 19872	10	Charles Davis Township Manager	Office: (717) 760-3120 Emergency: (717) 760-3123
Harrison Township Auth.	PO Box 234 Krissville, PA 19870	12	Kemp Olsen Auth. Manager	Office: (717) 760-2334 Emergency: (717) 760-2333
Villa Assoc.	Box 29 Krissville, PA 19880	14	George Kay	Office: (717) 675-8960 Emergency: (717) 675-8961
Harrison Water Auth.	Box 28 Krissville, PA 19879	16	Justine Keener	Office: (717) 675-9004 Emergency: (717) 675-9005

Igmars Emergency Coord.

Date

NOTE: This Downstream Notification List when annually updated should be dated for the year updated and signed by the storage tank facility's emergency coordinator.

ADDENDUM

**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**SUPPLEMENTAL GUIDANCE
FOR THE DEVELOPMENT AND IMPLEMENTATION OF
PREPAREDNESS, PREVENTION AND CONTINGENCY (PPC) PLANS
UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
STORM WATER PERMITTING PROGRAM**

September 2001

**BUREAU OF WATER STANDARDS AND FACILITY REGULATION
DIVISION OF PLANNING AND PERMITS**

FORWARD

The “Supplemental Guidance for the Development and Implementation of Preparedness, Prevention and Contingency (PPC) Plans under the National Pollutant Discharge Elimination System (NPDES) Storm Water Permitting Program” has been prepared to provide those owners, operators, and municipalities who must prepare Preparedness, Prevention and Contingency (PPC) Plans (in accordance with the General Permit for Discharges of Storm Water from Industrial Activities and the Department’s Chapter 91 regulations) with guidance on what storm water issues must be addressed. This supplemental guidance, when used with the existing guidance entitled “Guidelines for the Development and Implementation of Environmental Emergency Response Plans”, hereafter called the PPC guidance or guidelines, will provide complete information on incorporating the new storm water requirements into existing or new PPC Plans for facilities seeking coverage under the general permit to discharge storm water associated with industrial activity.

Section 1 provides an introduction to the regulatory requirements for storm water discharges, the General Permit for Discharges of Storm Water From Industrial Activities and the special condition within the permit to develop and implement a Preparedness, Prevention and Contingency Plan.

Section 2 follows the format of the original guidelines. Where changes must be incorporated to address the new storm water requirements, the necessary modifications or addendums are explicitly presented.

It is emphasized that the original guidance pertains to emergency response plans that include potential releases, their controls, and management practices that are applicable to facilities regardless of whether they discharge storm water associated with industrial activity. The supplemental guidance’s requirements, on the other hand, have specific requirements that focus exclusively on managing storm water discharges associated with industrial activity.

SECTION 1

INTRODUCTION

The Department of Environmental Protection is authorized by law to protect the quality of both surface and underground waters of the Commonwealth through the prevention and abatement of water pollution. Specifically, the federal Clean Water Act and the Pennsylvania Clean Streams Law require that all point source discharges of pollutants be authorized and regulated under a National Pollutant Discharge Elimination System (NPDES) permit. Point source discharges that are not regulated under a NPDES permit are in violation of the federal Clean Water Act and the Pennsylvania Clean Streams Law, and may be subject to applicable penalties and fines.

Recent revisions to the federal NPDES regulations (55 FR 47990; November 16, 1990) require that permit applications be submitted and NPDES permits be issued for storm water discharges associated with industrial activity (see the Bureau of Water Quality Management's "Notice of Intent Requirements for Coverage Under the General Permit for Discharges of Storm Water From Industrial Activities" for definition of industries covered). In accordance with the Department's regulations at 25 Pa. §§92.81 - 92.83, the Department of Environmental Protection has developed and issued a general NPDES permit that sets forth the requirements and conditions to control storm water discharges from industrial activities.

Special Permit Condition for the Development and Implementation of a PPC Plan

The General Permit for Discharges of Storm Water from Industrial Activities requires operators of facilities covered under the permit to develop and implement a Preparedness, Prevention and Contingency (PPC) Plan in accordance with 25 Pa. Code §91.34 and the PPC guidelines contained in this document prior to authorization to discharge under this general permit.¹ The PPC Plan, once implemented, will provide best management practices (BMPs) to control the discharges of pollutants to receiving waters. In general, the PPC Plan is required to identify potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges associated with industrial activity from the facility. In addition, the PPC Plan is required to describe the implementation of practices that are to be used to reduce the pollutants in storm water discharges associated with industrial activity at the facility.

This supplemental guidance provides the additional elements and requirements needed to address storm water issues in the PPC Plan required under the general permit. When used in conjunction with this document, the terms and conditions of the permit should be satisfied and the appropriate "spill prevention control" and "storm water control" - requirements should be addressed.

¹ See Part C.3.a. of the General permit.

SECTION 2

MODIFICATIONS TO EXISTING ELEMENTS AND FORMAT OF THE PPC PLAN

Modify or add to Section II of the PPC guidance, the elements beginning with A (Description of Facility). Each modification or addendum is identified explicitly in the following pages using the format contained in this document. In cases where no modifications to the original guidelines are necessary, the element heading is presented and the user is referred to the requirements in the PPC guidance. Again, users or developers of PPC Plans that meet the requirements of a general permit to discharge storm water associated with industrial activity must fulfill all of the requirements of the PPC guidance and the additional requirements and addendums of this supplemental guidance.

A. Description of Facility

1. Description of the Industrial or Commercial Activity

Add the following to the requirements in the original guidance for this section.

- Provide a narrative description of significant materials² that have been treated, stored or disposed in a manner to allow exposure to storm water within the three years prior to the issuance of the general permit and the present; the method of on-site storage or disposal; materials management practices that were employed to minimize contact of these materials with storm water runoff between the time of three years prior to the date of the issuance of this permit and the present; materials loading and access areas; the location and a description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff; and a description of any treatment the storm water receives.
- On the 7 1/2-minute USGS map show the following:
 - Provide an outline of the drainage area for each storm water outfall.
- On the drawings required in the original guidance show the following:
 - Indicate existing structural control measures to reduce pollutants in storm water runoff.
 - Identify commercial and industrial activities that are exposed to precipitation to include fueling stations, vehicle and equipment maintenance and/or cleaning areas, loading/unloading areas, locations used for treatment, storage or disposal of wastes, liquid storage tanks, and processing areas.

2. Description of Existing Emergency Response Plans

Refer to the requirements in the original guidance.

3. Material and Waste Inventory

Refer to the requirements in the original guidance.

² Significant materials includes, but is not limited to: raw materials; fuels, materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the facility is required to report pursuant to EPCRA Section 313; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with storm water discharges.

4. Pollution Incident History

Add the following to the requirements in the original guidance for this section.

- Provide a list of significant leaks and spills³ of toxic and hazardous pollutants that occurred in areas that are exposed to precipitation or that otherwise drain to a storm water conveyance at the facility after the date of three years prior to the effective date of the permit. This list shall be updated as appropriate during the permit.

5. Implementation for Plan Elements Not Currently in Place

Refer to the requirements in the original guidance.

B. Description of How Plan is Implemented by Organization

1. Organizational Structure of Facility for Implementation

Refer to the requirements in the original guidance.

2. List of Emergency Coordinators

Refer to the requirements in the original guidance.

3. Duties and Responsibilities of the Coordinator

Refer to the requirements in the original guidance.

4. Chain of Command

Refer to the requirements in the original guidance.

C. Spill Leak Prevention and Response

1. Pre-release Planning

Add the following to the requirements in the PPC guidance for this section.

- Assess the potential of various sources at the plant to contribute pollutants to storm water discharges. Each of the following shall be evaluated for the reasonable potential for contributing pollutants to runoff: loading and unloading operations; outdoor storage activities; outdoor manufacturing or processing activities; significant dust or particulate generating processes; and on-site waste disposal practices. Consider the toxicity of chemicals; quantity of chemicals used, produced, or discharged; the likelihood of contact with storm water; and history of significant leaks or spills of toxic or hazardous pollutants. The description shall specifically list any significant potential source of pollutants at the site and for each potential source, any pollutant or pollutant parameter of concern (e.g., biochemical oxygen demand).
- Describe pollution incident prevention practices in storage areas used for the storage of salts for deicing or other commercial or industrial purposes. Storage piles of salt used for deicing or other commercial or industrial purposes and which generate a storm water discharge associated with industrial activity which is discharged to a waters of the United States

³ Significant spills includes, but is not limited to: releases of oil and hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (see 40 CFR 110.10 and CFR 117.21) or section 102 of CERCLA (see 40 CFR 302.4).

shall be enclosed or covered to prevent exposure to precipitation, except for exposure resulting from adding or removing materials from the pile. Dischargers shall demonstrate compliance with this provision as expeditiously as practicable, but in no event later than October 1, 1995. Piles do not need to be enclosed or covered where storm water from the pile is not discharged to waters of the United States.

2. Material Compatibility

Refer to the requirements in the PPC guidance.

3. Inspection and Monitoring Program

Add the following to the requirements in the PPC guidance for this section.

- Identify qualified personnel to conduct site compliance evaluations for storm water discharges associated with industrial activities, but in no case, less than once per year. Such evaluations will provide the following:

Visually inspect areas contributing to storm water discharges associated with industrial activity for evidence of, or the potential for, pollutants entering the drainage system. Measures to reduce pollutant loadings should be evaluated to determine whether additional control measures are needed. Structural storm water management measures, sediment and erosion control measures, and other structural pollution prevention measures identified in the plan should be observed to ensure that they are operating correctly. A visual inspection of equipment needed to implement the plan, such as spill response equipment, should be made.

Based on the results of these inspections, potential pollutant sources identified (Section C) and control measures (i.e., good housekeeping, preventive maintenance, spill prevention and response), should be revised as necessary within 15 days of the inspection. The revision will provide for the implementation of any changes to the PPC plan in a timely manner, but in no case later than 90 days after the inspection.

A report summarizing the scope of the inspection, personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the PPC plan, and any actions taken as a result, should be retained for a period of at least one year after coverage under this permit terminates. This report will identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report should contain a certification that the facility is in compliance with the PPC plan and the permit. This report shall be signed in accordance to the signatory requirements stipulated in the general permit.

Where annual site inspections are shown in the plan to be impractical for inactive mining sites due to the remote location and inaccessibility of the site, site inspections required under this part should be conducted at appropriate intervals specified in the plan, but, in no case less than once in three years.

4. Preventive Maintenance

Add the following to the requirements in the PPC guidance for this section.

- Describe the aspects of the preventive maintenance program. This program should involve the timely inspection and maintenance of storm water management devices (e.g., cleaning oil/water separators, catch basins, etc.) as well as inspecting and testing plant equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters. Records of these maintenance procedures should be maintained.

5. Housekeeping Program

Add the following to the requirements in the PPC guidance for this section.

- Establish housekeeping protocols to ensure the proper handling of materials and the maintenance of a clean, orderly facility to prevent pollutants from entering separate storm water sewers and/or to prevent contact with storm water runoff.

6. Security

Refer to the requirements in the PPC guidance.

7. External Factor Planning

Refer to the requirements in the PPC guidance.

8. Employee Training Program

Add the following to the requirements in the PPC guidance for this section.

- Employee training should inform personnel responsible for implementing activities identified in the storm water pollution prevention plan or otherwise responsible for storm water management at all levels of responsibility of the components and goals of the storm water pollution prevention plan. Training should address topics such as spill response, good housekeeping and material management practices. A pollution prevention plan shall identify periodic dates for such training.

D. Countermeasures

1. Countermeasures to be Undertaken by Facility

Refer to the requirements in the PPC guidance.

2. Countermeasures to be Undertaken by Contractors

Refer to the requirements in the PPC guidance.

3. Internal and External Communications and Alarm Systems

Refer to the requirements in the PPC guidance.

4. Evacuation Plan for Installation Personnel

Refer to the requirements in the PPC guidance.

5. Emergency Equipment Available for Response

Refer to the requirements in the PPC guidance.

E. Emergency Spill Control Network

1. Arrangements with Local Emergency Response Agencies and Hospitals

Refer to the requirements in the PPC guidance.

2. Notification Lists

Refer to the requirements in the PPC guidance.

3. Downstream Notification Requirements for Storage Tanks

Refer to the requirements in the PPC guidance.

THE ELEMENTS F THROUGH J ARE ADDENDUMS TO THE ORIGINAL GUIDANCE.

The PPC plan should also meet the requirements stipulated in these addendums to the PPC guidance. All of the management practices required for facilities (including EPCRA Section 313 facilities) are to be implemented and described in the plan.

F. Storm Water Management Practices

- Provide a narrative considering the appropriateness of traditional storm water management practices (practices other than source control) and the use of BMPs to control storm water runoff and prevent storm water pollution. Based on an assessment of the potential of various sources at the plant to contribute pollutants to storm water, provide that measures determined to be reasonable and appropriate, be implemented and maintained.

Traditional storm water management practices are measures which reduce pollutant discharges by reducing the volume of storm water discharges, such as swales, or preventing storm water to run-on to areas of the site which conduct industrial activities. Low cost measures may include diverting rooftop or other drainage across grass swales, cleaning catch basins, and installing and maintaining oil and grit separators. Other measures may include infiltration devices and unlined retention and detention basins. Traditional storm water management practices can also include water reuse activities and snow removal activities.

- The PPC plan shall include a certification that the discharge has been tested or evaluated for the presence of non-storm water discharges. The certification shall include the identification of potential significant source of non-storm water at the site. A description of the results of any test and/or evaluation for the presence of non-storm water discharges, the evaluation criteria or testing method used, the date of any testing and/or evaluation, and the on-site drainage points that were directly observed during the test.

G. Sediment and Erosion Prevention

- In the PPC plan, identify areas which, due to topography, activities, or other factors, have a high potential for significant soil erosion, and identify measures to limit erosion.

Sediment and erosion prevention and control measures should be developed and implemented in accordance with Chapter 102 of the Department's rules and regulations and the Bureau of Soil and Water Conservation's "Erosion and Sediment Pollution Control Program Manual."

H. Additional Requirements for EPCRA, Section 313 Facilities⁴

- Describe the types of storm water controls (containment, drainage control and/or diversionary structures) that will be used in areas where Section 313 water priority chemicals are stored,⁵ processed or otherwise handled.

Storm water controls should provide for the following preventive systems or its equivalent: Curbing, culverting, gutters, sewers or other forms of drainage control to prevent or minimize the potential for storm water run-on to come into contact with significant sources of pollutants; or roofs, covers or other forms of appropriate protection to prevent storage piles from exposure to storm water and wind blowing.

- In addition to the minimum standards for EPCRA Section 313 facilities, the storm water pollution prevention plan will meet the following requirements for liquid storage areas, material storage areas other than liquids, truck and rail car loading and unloading areas for liquid Section 313 water priority chemicals:
 - Liquid storage areas where storm water comes into contact with any equipment, tank container, or other vessel used for Section 313 water priority chemicals.
- No tank or container shall be used for the storage of a Section 313 water priority chemical unless its material and construction are compatible with the material stored and conditions of storage such as pressure and temperature, etc.
- Secondary containment must be provided to contain the entire capacity of largest single container or tank plus sufficient freeboard to allow for precipitation, a strong spill contingency and integrity testing plan, and/or other equivalent measures. If the secondary containment and its upstream drainage system are subject to precipitation, an allowance for drainage for a 25-year, 24-hour storm event shall be provided over and above. Secondary containment shall be sufficiently impervious. Plant's treatment system may be substituted for secondary containment if it has sufficient excess holding capacity always available.
 - Material storage areas for Section 313 water priority chemicals other than liquids.
- Material storage areas for Section 313 water priority chemicals other than liquids which are subject to runoff, leaching, or wind shall incorporate drainage or other control features which will minimize the discharge of Section 313 water priority chemicals.

⁴ An "EPCRA, Section 313 Facility" means a facility that manufactures, imports, processes, or otherwise uses listed toxic chemicals and who, pursuant to Section 313 of Title III of SARA, are required to report annually their releases of those chemicals to any environmental media.

⁵ Section 313 water priority chemical means a chemical or chemical categories which: 1) Are listed at 40 CFR 372.65 pursuant to Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986; 2) are present at or above threshold levels at a facility subject to EPCRA Section 313 reporting requirements; and 3) that meet at least one of the following criteria: (i) Are listed in Appendix D of 40 CFR 122 on either Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols) or Table V (certain toxic pollutants and hazardous substances); (ii) are listed as a hazardous substance pursuant to Section 311(b)(2)(A) of the CWA at 40 CFR 116.4; or (iii) are pollutants for which EPA has published acute or chronic water quality criteria.

- Truck and rail car loading and unloading areas for liquid Section 313 water priority chemicals.
- These areas shall be operated to minimize discharges of Section 313 water priority chemicals. Protection such as overhangs or door skirts to enclose trailer ends at truck loading/unloading docks shall be provided as appropriate. Appropriate measures to minimize discharges of Section 313 chemicals may include: placement and maintenance of drip pans (including the proper disposal of materials collected in the drip pans where spillage may occur such as hose connections); a strong spill contingency and integrity testing plan; and/or other equivalent measures.
 - Areas where Section 313 water priority chemicals are transferred, processed or otherwise handled.
- Processing equipment and materials handling equipment shall be operated so as to minimize the discharges of Section 313 water priority chemicals. Materials used in piping and equipment shall be compatible with the substances handled. Drainage from process and materials handling areas shall minimize storm water contact with Section 313 water priority chemicals. Additional protection such as covers or guards to prevent exposure to wind, spraying, or releases from pressure relief vents from causing a discharge of Section 313 water priority chemicals to the drainage system shall be provided as appropriate. Visual inspections or leak tests shall be provided for overhead piping conveying Section 313 water priority chemicals without secondary containment.
 - For drainage originating from the above described areas, valves or other positive means should be used to prevent discharges or excessive leaks of Section 313 water priority chemicals. Where containment units are employed, such units may be emptied by pumps or ejectors; however, these shall be manually activated.

Flapper-type drain valves must not be used to drain containment areas. Valves used for the drainage of containment areas should not be used to drain non-containment areas. Valves used should be of the open-and-closed design.

If plant drainage is not engineered as above, the final discharge of all in-plant storm sewers should be equipped to be equivalent with a diversion system that could, in the event of an uncontrolled spill of a Section 313 water priority chemical, return the spilled material to the facility. Records shall be kept of the frequency and estimated volume (in gallons) of discharges from the containment areas.

- Records shall be kept of the frequency and estimated volume (in gallons) of discharges from containment areas.
- Other areas (other than those described above) of the facility from which runoff which may contain a Section 313 water priority chemical, or spills of Section 313 water priority chemicals could cause a discharge, shall incorporate the necessary drainage or other control features to prevent discharge of spilled or improperly disposed material and ensure the mitigation of pollutants in runoff or leachate.

- All areas of the facility shall be inspected at specific intervals for leaks or conditions that could lead to discharges of Section 313 water priority chemicals or direct contact of storm water with raw materials, intermediate materials, waste materials or products. In particular, plant piping, pumps storage tanks and bins, pressure vessels, process and materials handling equipment, and material bulk storage area shall be examined for any conditions or failures which could cause a discharge. Inspection shall include examination for leaks, wind blowing, corrosion, support or foundation failure, or other forms of deterioration or noncontainment. Inspection intervals shall be specified in the plan and shall be based on design and operational experience. Different areas may require different inspection intervals. Where a leak or other condition is discovered which may result in significant releases of Section 313 water priority chemicals to the drainage system, corrective action shall be taken. When a leak or noncontainment of a Section 313 water priority chemical has occurred, contaminated soil, debris, or other material must be promptly removed and disposed in accordance with this PPC Plan.
- Facility employees and contractor personnel using the facility shall be trained in and informed of preventive measures at the facility. Employee training shall be conducted at intervals specified in the plan, but not less than once per year, in matters of pollution control laws, and regulations and in the PPC Plan, and the particular features of the facility and its operation which are designed to minimize discharges of Section 313 water priority chemicals. The plan should designate a person who is accountable for spill prevention at the facility and who will set up the necessary spill emergency procedures and reporting requirements so that spills and emergency releases of Section 313 water priority chemicals can be isolated and contained before a discharge of a Section 313 water priority chemical can occur. Contractor or temporary personnel shall be informed of plant operation and design features in order to prevent discharges or spills from occurring.

If the installment of secondary containment structures or equipment listed above are not economically achievable at a facility, the PPC Plan should provide a spill contingency and integrity testing plan which provides a description of measures that ensure spills or other releases of toxic amounts of Section 313 water priority chemicals do not occur. The testing plan should contain the following:

- Detailed descriptions which demonstrate that secondary containment is not economically achievable;
- Description of response plans, personnel needs, and methods of mechanical containment such as the use of sorbents, booms collection devices, etc.); steps to be taken for removal of spilled Section 313 water priority chemicals; and access and availability of sorbents and other equipment;
- The testing component of the alternative plan must provide for conducting integrity testing of storage tanks at least once every five years, and

conducting integrity and leak testing of valves and piping a minimum every year; and

- A written and actual commitment of manpower, equipment and materials required to comply with this permit and to expeditiously control and remove quantity of Section 313 water priority chemicals that may result in a toxic discharge.
- Provide a certification by a Registered Professional Engineer. The Professional Engineer shall certify that he or she has examined the facility and is familiar with the provisions in the PPC Plan and can attest that the PPC Plan has been prepared in accordance with good engineering practices. The Professional Engineer must recertify the PPC Plan once a year.

I. Certification Requirements for Non-Storm Water Discharges

- Provide a certification meeting the requirements of Part C, Section 3(a) of the industrial activities stormwater general permit (PAG #3) relating to the presence of non-stormwater discharges in the system.

If a facility does not have access to an outfall, manhole, or other point of access to the ultimate conduit which receives the discharge, this section of the plan shall indicate why the certification was not feasible. A discharge that is unable to provide the certification required by this paragraph must also then notify the Department within 180 days of the effective date of the general permit in accordance with Section A.3. of the permit.

J. Signatory Requirements

The PPC plan must be signed in accordance with the signatory requirements stipulated in the general permit.

RESOLUTION NO. _____

A RESOLUTION OF THE TOWNSHIP OF FERGUSON, CENTRE COUNTY, PENNSYLVANIA, AMENDING THE FERGUSON TOWNSHIP PERSONNEL POLICY MANUAL BY AMENDING SECTION 6, REGULAR PAY PERIODS; SECTION 12, VACATION; SECTION 13, PERSONAL DAYS; SECTION 15, MILITARY LEAVES OF ABSENCE; SECTION 21, EMPLOYMENT OF RELATIVES; AND SECTION 36, SEXUAL HARRASSMENT COMPLAINTS.

BE IT RESOLVED, that the Board of Supervisors of the Township of Ferguson, Centre County, Pennsylvania, amend the Ferguson Township Personnel Policy Manual as follows:

A. Section 6, Regular Pay Periods, be amended as follows:

Add – Employees shall be paid bi-weekly, every other Friday resulting in 26 pays per year.

Delete – If a scheduled pay day falls on a holiday or weekend, paychecks will be distributed on the last Township business day before the holiday or weekend.

B. Section 12, Vacation, be amended as follows:

Add – Vacation may be taken in minimum of one half (1/2) hour increments. Time taken in less than one half (1/2) hour increments will be rounded up to the next half hour.

C. Section 13, Personal Days, be amended as follows:

Add – Personal time may be taken in minimum of one half (1/2) hour increments. Time taken in less than one half (1/2) hour increments will be rounded up to the next half hour.

D. Section 15, Military Leave of Absence, be amended as follows:

Add - An employee must notify Ferguson Township of any changes to their military service schedule as soon as practical.

E. Section 21, Employment of Relatives, be amended as follows:

Add – No person will be hired or transferred with the result that he/she will supervise, work with or under the direct supervision of his/her spouse, son, daughter, parent, parent-in-law, stepson, stepdaughter, brother, sister, brother-in-law, sister-in-law, first cousin, uncle, aunt, niece, nephew, or grandchildren.

F. Section 36, Sexual Harassment, Complaints, be amended as follows:

Add – In the event that a female employee would prefer to report a concern about sexual discrimination or harassment to a female, Angela Kalke is designated as the proper person to receive such communications.

ADOPTED, this 21st day of January, 2019.

**TOWNSHIP OF FERGUSON
BOARD OF SUPERVISORS**

By: _____
Peter Buckland, Chairman

[S E A L]

ATTEST:

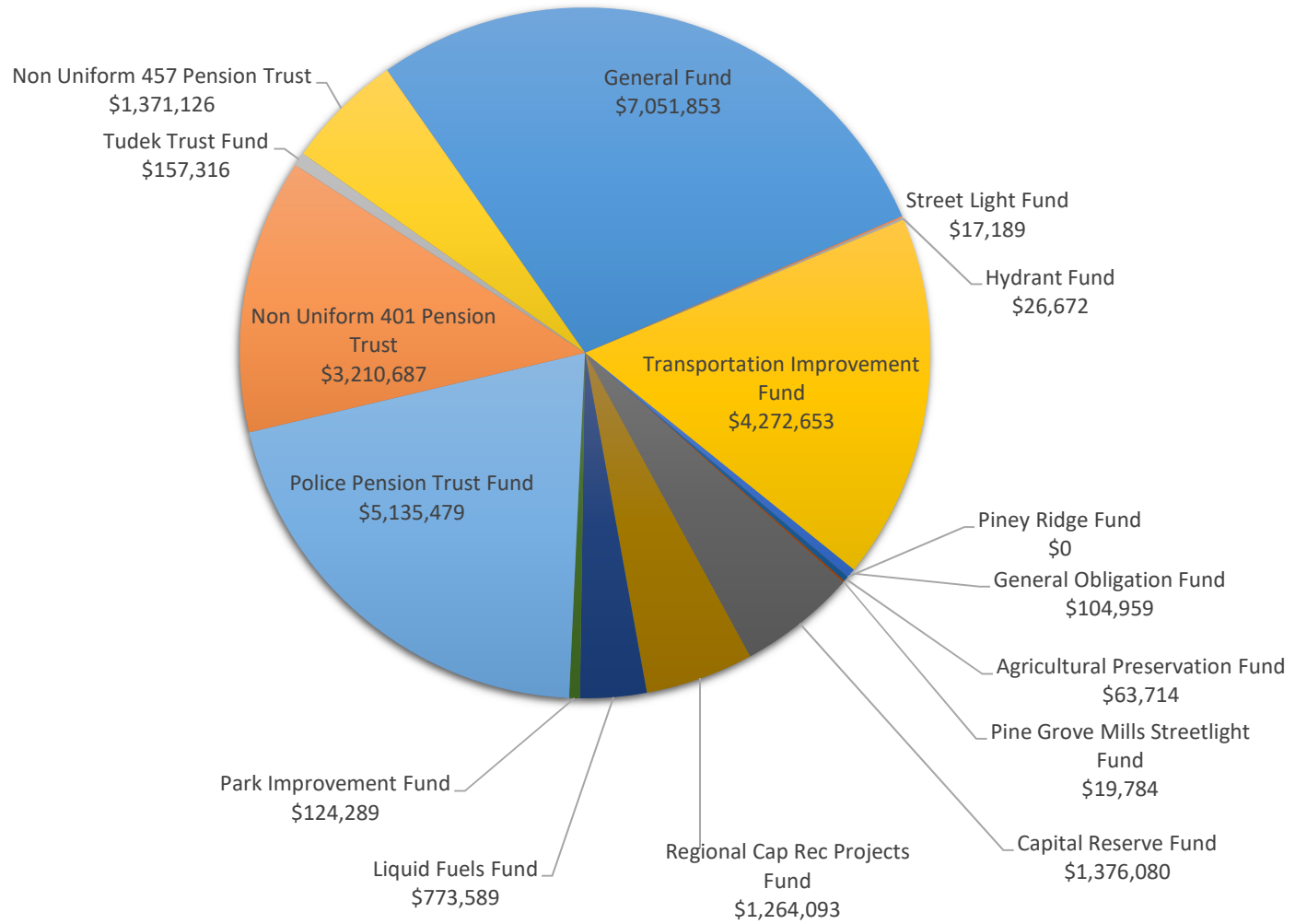
By: _____
David G. Pribulka, Secretary



MONTHLY TREASURERS REPORT

DECEMBER 2018

CASH BALANCES BY FUND - DECEMBER 31, 2018



Ferguson Township Treasurer's Report

December 31, 2018

Statement of Cash Balances

General Fund

Checking

Jersey Shore State Bank Operating (3245)	4,831,377.34
JSSB Flex Plan Checking (8757)	15,461.19
Ameriserv Money Market 2602	258,154.21
Ameriserv CD (0210) (matures 12/3/19)(1/3 of total)	260,472.15
PLGIT General Fund (3017)	623,846.72
PLGIT General Fund CDs (2)(mature 4/2/19, 9/11/19)	752,863.56

Investments

Morgan Stanley Brokerage Account (@ market)	309,677.40
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TOTAL GENERAL FUND

7,051,852.57

Other Funds

Fund 02 Street Lights

JSSB Checking (4836)	17,189.43
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Fund 03 Fire Hydrant

JSSB Checking (4844)	26,672.00
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Fund 16 General Obligation

JSSB Checking (4852)	104,958.99
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Fund 19 Agricultural Preservation

JSSB Checking (4879)	63,713.56
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Fund 30 Capital Reserve

Paypal Account	8,127.54
JSSB Checking (Employee Wellness Sinking Fund)(4909)	14,552.85
JSSB Capital Reserve Checking (3555)	34,859.65
JSSB Checking (Police Equipment Sinking Fund) (1711)	81,856.43
JSSB Checking (PW Equipment Sinking Fund)(4895)	968,925.29
JSSB Checking (Bldg Equipment Sinking Fund)(4887)	267,757.93

Fund 31 Regional Capital Recreation Projects

JSSB Checking (3547)	745,466.28
Ameriserv Money Market 2818	258,154.21
Ameriserv CD (0210) (matures 12/3/19)(1/3 of total)	260,472.15

Fund 32 Transportation Improvement

JSSB Checking (3539)	2,487,250.12
PLGIT Checking (3261) & Plus	2,811.63
PLGIT CDs (3)(mature 2/8/19, 6/3/19, 10/15/19)	1,263,964.98
Ameriserv Money Market 2693	258,154.21
Ameriserv CD (0210) (matures 12/3/19)(1/3 of total)	260,472.15

Fund 33 Pine Grove Mills Street Lights

JSSB Checking (4917)	19,783.94
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Fund 34 Park Improvement

JSSB Checking (4925)	124,288.75
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Ferguson Township Treasurer's Report

December 31, 2018

Statement of Cash Balances

Fund 35 Liquid Fuels

JSSB Checking (4933)	54,301.78
PLGIT Checking (3020)	164,699.59
PLGIT CDs (3020) (mature 2/8/19 & 2/26/19)	554,587.77

Fund 93 Tudek Memorial Trust

JSSB Checking (4976)	29,162.59
FNB Investments (@market)	128,153.10

TOTAL OTHER FUNDS	8,200,336.92
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TOTAL NON PENSION FUNDS	15,252,189.49
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Employer Pension Trust Funds

Fund 60 Police Pension Trust

JSSB Checking (4941)	6,404.96
PNC Enterprise Checking (9642)	30,576.68
PNC Investments (@market)(includes accrued interest)	5,098,497.48

Fund 65 Non Uniformed 401a Pension Trust

JSSB Checking (4968)	48.63
ICMA-RHS Employee Retirement Health Savings Trust (@ market)	67,946.17
ICMA-401 Employer Pension Investment Trust (@ market)	3,142,692.15

TOTAL PENSION TRUST FUNDS	8,346,166.07
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GRAND TOTAL	23,598,355.56
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Employee Pension Trust Funds

Fund 66 Non Uniformed 457 Pension Trust

ICMA-457 Employee Pension Investment Trust (@ market)	1,345,198.06
ICMA-ROTH IRA Employee Pension Investment Trust (@ market)	25,927.87

TOTAL	1,371,125.93
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Bank Reconciliation

Uncleared Checks by Fund

User: eendresen
Printed: 01/10/2019 - 3:31PM
Checks Before: 12/31/2018



Fund/Check No.	Check Date	Clear Date	System	Vendor/Employee No.	Vendor/Employee Name	Amount
01	GENERAL FUND					
0	12/30/2018	Uncleared	AP	10870	PNC INSTITUTIONAL INVESTMENTS	3,168.62
0	12/30/2018	Uncleared	AP	11216	VANTAGEPOINT TRANSFER AGENTS 401	7,879.66
0	12/30/2018	Uncleared	AP	11218	VANTAGEPOINT TRANSFER AGENTS 457	5,089.20
0	12/30/2018	Uncleared	AP	11381	VANTAGEPOINT TRANSFER AGENTS-706007 ROTH	226.19
6192	09/29/2017	Uncleared	AP	11577	CBICC	2,500.00
6255	10/13/2017	Uncleared	AP	11547	FOSTER DANIEL	250.00
6727	01/31/2018	Uncleared	AP	11597	WITHERS KARYN	15.00
7254	06/15/2018	Uncleared	AP	11738	GREENE HERBERT	25.00
7622	08/31/2018	Uncleared	AP	11756	TOMKEIL PAUL	40.00
7635	09/15/2018	Uncleared	AP	11702	BLUE KNOB AUTO	300.00
7773	10/15/2018	Uncleared	AP	11702	BLUE KNOB AUTO	300.00
7903	11/15/2018	Uncleared	AP	11702	BLUE KNOB AUTO	300.00
7908	11/15/2018	Uncleared	AP	10185	CENTRE CONCRETE COMPANY	76.52
7947	11/15/2018	Uncleared	AP	11344	PETERSON INDUSTRIES INC.	684.53
7957	11/15/2018	Uncleared	AP	10997	SIGNAL CONTROL PRODUCTS INC	2,640.55
7991	11/29/2018	Uncleared	AP	11217	FERGUSON TOWNSHIP POLICE ASSOCIATION	380.00
8001	11/29/2018	Uncleared	AP	10720	MORRISON SHAWN	25.00
8005	11/29/2018	Uncleared	AP	11332	NTM ENGINEERING INC	1,406.65
8006	11/29/2018	Uncleared	AP	10773	OLD DOMINION BRUSH	223.36
8012	11/29/2018	Uncleared	AP	11744	STARR UNIFORM	185.76
8013	11/29/2018	Uncleared	AP	11049	STITZERS IMPRINTING & ENGRAVING SPEC	11.25
8027	12/14/2018	Uncleared	AP	11702	BLUE KNOB AUTO	300.00
8033	12/14/2018	Uncleared	AP	10244	COMCAST BUSINESS	1,050.00
8038	12/14/2018	Uncleared	AP	11217	FERGUSON TOWNSHIP POLICE ASSOCIATION	1,189.74
8041	12/14/2018	Uncleared	AP	10409	FRED CARSON DISPOSAL INC.	185.00
8043	12/14/2018	Uncleared	AP	10486	HENDRICK RYAN	90.14
8044	12/14/2018	Uncleared	AP	10487	HERITAGE ELECTRIC	560.00
8050	12/14/2018	Uncleared	AP	10674	MCCORMICK TAYLOR INC	2,187.50
8056	12/14/2018	Uncleared	AP	10715	MORAN DEVON	3,259.64
8061	12/14/2018	Uncleared	AP	10816	PATCTECH	400.00

Fund/Check No.	Check Date	Clear Date	System	Vendor/Employee No.	Vendor/Employee Name	Amount
8062	12/14/2018	Uncleared	AP	11344	PETERSON INDUSTRIES INC.	599.69
8068	12/14/2018	Uncleared	AP	11050	STOCKER CHEVROLET INC	1,369.85
8070	12/14/2018	Uncleared	AP	11058	STOVER MCGLAUGHLIN	1,006.50
8079	12/14/2018	Uncleared	AP	11199	WILLIAMS BROTHERS	32.00
8083	12/30/2018	Uncleared	AP	10016	AFLAC	176.77
8084	12/30/2018	Uncleared	AP	10122	BOROUGH OF STATE COLLEGE	2,450.00
8085	12/30/2018	Uncleared	AP	11224	CAMPBELL DURRANT BEATTY PALOMBO & MILLER PC	760.23
8086	12/30/2018	Uncleared	AP	11384	CENTRAL PA DOCK & DOOR LLC	2,600.00
8087	12/30/2018	Uncleared	AP	10201	CENTRE COUNTY UNITED WAY	33.75
8088	12/30/2018	Uncleared	AP	10203	CENTRE DAILY TIMES	330.04
8089	12/30/2018	Uncleared	AP	10231	CLEARFIELD WHOLESALE PAPER COMPANY INC	436.56
8090	12/30/2018	Uncleared	AP	10241	COLONIAL PRESS	258.00
8091	12/30/2018	Uncleared	AP	10243	COLUMBIA GAS OF PA INC	2,120.66
8092	12/30/2018	Uncleared	AP	10250	COMMONWEALTH OF PA USTIF	495.00
8093	12/30/2018	Uncleared	AP	10297	DAVIDHEISERS INC	346.00
8094	12/30/2018	Uncleared	AP	10321	DLT SOLUTIONS LLC	1,200.00
8095	12/30/2018	Uncleared	AP	11217	FERGUSON TOWNSHIP POLICE ASSOCIATION	420.00
8096	12/30/2018	Uncleared	AP	10488	HERR JR CHARLES F	840.00
8097	12/30/2018	Uncleared	AP	10492	HIRERIGHT SOLUTIONS INC	250.00
8098	12/30/2018	Uncleared	AP	10506	HR EXCAVATING INC	1,079.00
8099	12/30/2018	Uncleared	AP	11253	INFRADAPT LLC	6,601.00
8100	12/30/2018	Uncleared	AP	10546	J C EHRlich CO INC	1,092.00
8101	12/30/2018	Uncleared	AP	10590	KISTLER OBRIEN	406.60
8102	12/30/2018	Uncleared	AP	10615	LAUDENSLAGER KEVIN J	91.56
8103	12/30/2018	Uncleared	AP	10661	MARTIN JOSH	750.00
8104	12/30/2018	Uncleared	AP	10669	MAXWELL TRUCK & EQUIPMENT LLC	27.39
8105	12/30/2018	Uncleared	AP	10674	MCCORMICK TAYLOR INC	16,250.00
8106	12/30/2018	Uncleared	AP	10762	NORTH CENTRAL DIGITAL SYSTEMS	385.67
8107	12/30/2018	Uncleared	AP	11332	NTM ENGINEERING INC	861.09
8108	12/30/2018	Uncleared	AP	10773	OLD DOMINION BRUSH	291.21
8109	12/30/2018	Uncleared	AP	10845	PENNSYLVANIA MUNICIPAL HEALTH INSURANCE CO OF	86,283.33
8110	12/30/2018	Uncleared	AP	11700	PETS COME FIRST	200.00
8111	12/30/2018	Uncleared	AP	10893	PRINT O STAT INC	112.00
8112	12/30/2018	Uncleared	AP	10932	RESERVE ACCOUNT	1,000.00
8113	12/30/2018	Uncleared	AP	11733	ROADSAFE TRAFFIC SYSTEMS INC	950.00
8114	12/30/2018	Uncleared	AP	10953	ROSE BRIAN	61.04
8115	12/30/2018	Uncleared	AP	11551	WELLS FARGO	206.41
8116	12/30/2018	Uncleared	AP	11192	WEST PENN POWER	3,297.83
8117	12/30/2018	Uncleared	AP	11194	WEX BANK	145.02

Fund/Check No.	Check Date	Clear Date	System	Vendor/Employee No.	Vendor/Employee Name	Amount
					Fund 01Total:	170,765.51
02	STREET LIGHT FUND					
81	03/15/2018	Uncleared	AP	11192	WEST PENN POWER	0.29
94	12/30/2018	Uncleared	AP	11192	WEST PENN POWER	254.53
					Fund 02Total:	254.82
03	HYDRANT FUND					
23	12/30/2018	Uncleared	AP	11035	STATE COLLEGE BOROUGH WATER AUTHORITY	10,093.75
					Fund 03Total:	10,093.75
19	AG PRESERVATION FUND					
11	09/15/2018	Uncleared	AP	11757	ORE AS QI FOR LARRY HARPSTER & SUZANNE HARPSTE	4,507.50
12	09/28/2018	Uncleared	AP	11758	HARPSTER DAWN	2,253.75
13	09/28/2018	Uncleared	AP	11759	HARPSTER HAROLD	2,253.75
					Fund 19Total:	9,015.00
30	CAPITAL RESERVE FUND					
513	12/14/2018	Uncleared	AP	11774	YSM	7,847.71
514	12/30/2018	Uncleared	AP	10122	BOROUGH OF STATE COLLEGE	567.05
515	12/30/2018	Uncleared	AP	11615	BY DESIGN CONSULTANTS INC	7,073.00
516	12/30/2018	Uncleared	AP	11783	KEYSTONE AERIAL SURVEYS INC	6,160.00
					Fund 30Total:	21,647.76
32	TRANSPORT IMPROVEMENT FUND					
2017036	10/15/2018	Uncleared	AP	10819	PATTON TOWNSHIP SUPERVISORS	9,898.12
2017042	12/14/2018	Uncleared	AP	11784	PA DEPT OF TRANSPORTATION-COMPTROLLER	29,384.08
2017044	12/30/2018	Uncleared	AP	10674	MCCORMICK TAYLOR INC	8,325.28
					Fund 32Total:	47,607.48
35	LIQUID FUELS FUND					
265	12/14/2018	Uncleared	AP	10509	HRI INC	552.66
					Fund 35Total:	552.66
93	TUDEK PARK TRUST FUND					
207	12/30/2018	Uncleared	AP	11192	WEST PENN POWER	18.37
					Fund 93Total:	18.37

Fund/Check No.	Check Date	Clear Date	System	Vendor/Employee No.	Vendor/Employee Name	Amount
					Grand Total:	259,955.35

Accounts Payable

Checks by Date - Detail by Check Number

User: eendresen
 Printed: 1/11/2019 7:58 AM



Check No	Vendor No Invoice No	Vendor Name Description	Check Date Reference	Void Checks	Check Amount
ACH	10870 121418	PNC INSTITUTIONAL INVESTMENTS POLICE PENSION WITHHELD	12/14/2018		3,148.83
Total for this ACH Check for Vendor 10870:				0.00	3,148.83
ACH	11218 121418	VANTAGEPOINT TRANSFER AGENTS 457	12/14/2018		4,981.50
Total for this ACH Check for Vendor 11218:				0.00	4,981.50
ACH	11381 121418	VANTANGEPOINT TRANSFER AGENT ROTH IRA	12/14/2018		84.51
Total for this ACH Check for Vendor 11381:				0.00	84.51
ACH	11216 121418	VANTAGEPOINT TRANSFER AGENTS 401	12/14/2018		7,664.28
Total for this ACH Check for Vendor 11216:				0.00	7,664.28
ACH	10870 122818	PNC INSTITUTIONAL INVESTMENTS PENSION WITHHELD	12/30/2018		3,168.62
Total for this ACH Check for Vendor 10870:				0.00	3,168.62
ACH	11216 122818	VANTAGEPOINT TRANSFER AGENTS 401	12/30/2018		7,879.66
Total for this ACH Check for Vendor 11216:				0.00	7,879.66
ACH	11218 122818	VANTAGEPOINT TRANSFER AGENTS 457	12/30/2018		5,089.20
Total for this ACH Check for Vendor 11218:				0.00	5,089.20
ACH	11381 122818	VANTANGEPOINT TRANSFER AGENT ROTH IRA	12/30/2018		226.19
Total for this ACH Check for Vendor 11381:				0.00	226.19
6	11726 17973	WATSON DIESEL UPFITTING OF PETERBILT TANDEM AXLE	12/06/2018		113,416.00
Total for Check Number 6:				0.00	113,416.00
23	11035 122818	STATE COLLEGE BOROUGH WATER A FIRE HYDRANTS	12/30/2018		10,093.75
Total for Check Number 23:				0.00	10,093.75
93	11192 1424-DEC18	WEST PENN POWER STREET LIGHTS	12/14/2018		690.44

Check No	Vendor No Invoice No	Vendor Name Description	Check Date Reference	Void Checks	Check Amount
	3057-DEC18	STREET LIGHTS			1,572.50
			Total for Check Number 93:	0.00	2,262.94
94	11192 3639-DEC18	WEST PENN POWER N ATHERTON ST	12/30/2018 01.433.036		254.53
			Total for Check Number 94:	0.00	254.53
207	11192 6563-DEC18	WEST PENN POWER 425 PARK CREST LANE	12/30/2018 93.454.249		18.37
			Total for Check Number 207:	0.00	18.37
263	10034 52683	ALPHA SPACE CONTROL COMPANY I 2018 PAVEMENT MARKING	12/14/2018		902.59
			Total for Check Number 263:	0.00	902.59
264	11228 574905	AMERICAN ROCK SALT COMPANY LI ADD 97.35 TONS OF STONE TO PO	12/14/2018		14,929.43
			Total for Check Number 264:	0.00	14,929.43
265	10509 1384233	HRI INC 9.5 MM M .3<3 15% RAP WMA	12/14/2018		552.66
			Total for Check Number 265:	0.00	552.66
266	10644 120118	LOWES COMPANIES INC CONCRETE MIX/	12/14/2018		635.95
			Total for Check Number 266:	0.00	635.95
509	10207 120518	CENTRE REGION CODE ADMINISTRAT 40% cost for building permit for township admin	12/05/2018 40% permit fee for Township.		537.93
			Total for Check Number 509:	0.00	537.93
510	10069 C18-176	CHRISTIAN T AUMILLER COMMERCIAL APPRAISAL FOR WHITE/ST	12/14/2018		6,000.00
			Total for Check Number 510:	0.00	6,000.00
511	10122 7083	BOROUGH OF STATE COLLEGE Payment for completion of State link/UCR bench	12/14/2018		19,868.75
			Total for Check Number 511:	0.00	19,868.75
512	11782 120318	SPICER'S GENERAL CONTRACTING & TUDEK PARK BARN ROOF	12/14/2018		20,000.00
			Total for Check Number 512:	0.00	20,000.00
513	11774 5869 5887	YSM SUBURBAN PARK MP SUBURBAN PARK MP	12/14/2018		2,406.86 5,440.85
			Total for Check Number 513:	0.00	7,847.71
514	10122 7169	BOROUGH OF STATE COLLEGE REIMBURSEMENT FOR THE NOV SERVICE	12/30/2018		567.05

Check No	Vendor No Invoice No	Vendor Name Description	Check Date Reference	Void Checks	Check Amount
			Total for Check Number 514:	0.00	567.05
515	11615 2414	BY DESIGN CONSULTANTS INC INTERIOR RENOVATIONS	12/30/2018		7,073.00
			Total for Check Number 515:	0.00	7,073.00
516	11783 6160.00	KEYSTONE AERIAL SURVEYS INC AERIAL PHOTOGRAPHY PER ATTACHED C	12/30/2018		6,160.00
			Total for Check Number 516:	0.00	6,160.00
8022	10031 140196	ALLIED MECHANICAL & ELECTRICA COMMERCIAL MAINTENANCE	12/14/2018		750.00
			Total for Check Number 8022:	0.00	750.00
8023	11242 1VYP-G4YR-79MC	AMAZON CAPITAL SERVICES INC MONITOR FOR TAX OFFICE AREA	12/14/2018		89.99
			Total for Check Number 8023:	0.00	89.99
8024	11638 121218	ARMORED REPUBLIC, LLC BALLISTIC PLATES/MICRO PLATE CARRIE	12/14/2018		974.11
			Total for Check Number 8024:	0.00	974.11
8025	10085 135572 135573	BASTIAN TIRE & AUTO CENTERS TIRES TIRES	12/14/2018		508.60 688.88
			Total for Check Number 8025:	0.00	1,197.48
8026	10100 P54890 R87971 R87975	BEST LINE EQUIPMENT NUT/SHEAR BOLT/HEX BOLT PROPANE PROPANE	12/14/2018		25.00 45.00 -15.00
			Total for Check Number 8026:	0.00	55.00
8027	11702 12/14/18	BLUE KNOB AUTO UNDERCOVER VEHICLE	12/14/2018		300.00
			Total for Check Number 8027:	0.00	300.00
8028	10122 7060 7155	BOROUGH OF STATE COLLEGE Fergusons portion of the National Tactical Office 2018 YARD WASTE RECYCLING COMPOST	12/14/2018		25.00 33,005.00
			Total for Check Number 8028:	0.00	33,030.00
8029	10184 118114	CENTRE COMMUNICATIONS INC MOBILE RADIO PROGRAMMING	12/14/2018		1,378.40
			Total for Check Number 8029:	0.00	1,378.40
8030	10203 3954193 3972218 3973979 103916883-10251	CENTRE DAILY TIMES BOS MTG NOV 19 BOS MTG PROPOSED BUDGET BOS MTG DEC 3RD AD FOR FULL TIME ROAD WORKER	12/14/2018		125.79 106.13 114.21 468.08

Check No	Vendor No Invoice No	Vendor Name Description	Check Date Reference	Void Checks	Check Amount
			Total for Check Number 8030:	0.00	814.21
8031	10225 4012741181	CINTAS CORPORATION # 536 BRUCE UNIF	12/14/2018		35.00
			Total for Check Number 8031:	0.00	35.00
8032	11376 113018 113018 113018	COLONIAL AUTO SUPPLY WIPER BLADES/HEADLIGHT/OIL FILTERS/ WIPER BLADES/BATTERY EXHAUST FLUID	12/14/2018		565.17 81.13 48.16
			Total for Check Number 8032:	0.00	694.46
8033	10244 73273859	COMCAST BUSINESS ETHERNET DEDICATED INTERNET	12/14/2018		1,050.00
			Total for Check Number 8033:	0.00	1,050.00
8034	10334 3523889	DULTMEIER SALES 12V SOLENOID VALVE	12/14/2018		184.78
			Total for Check Number 8034:	0.00	184.78
8035	10359 121418	ERIC ENDRESEN INCORRECT CHECKING ACCT	12/14/2018		230.00
			Total for Check Number 8035:	0.00	230.00
8036	10372 PASTA159719	FASTENAL COMPANY ECOLOCKNUT/DOM/ECO HCS/MED STICK	12/14/2018		525.22
			Total for Check Number 8036:	0.00	525.22
8037	10373 113018	FAYETTE PARTS SERVICE INC STARTER	12/14/2018		459.04
			Total for Check Number 8037:	0.00	459.04
8038	11217 100318 121418	FERGUSON TOWNSHIP POLICE ASSOC GAS MASKS UNION DUES WITHHELD	12/14/2018		769.74 420.00
			Total for Check Number 8038:	0.00	1,189.74
8039	10380 121718	FERGUSON TOWNSHIP SUPERVISORS NOV 18 TIF TRANSFER TAX	12/14/2018		87,507.09
			Total for Check Number 8039:	0.00	87,507.09
8040	10396 120118 120118 120118 120118	FISHER AUTO PARTS FILTER/OIL FILTER/SPARK PLUG/STARTER SMP TRAINING HOUK OIL/ANTIFREEZE ANTIFREEZE	12/14/2018		466.04 199.90 76.72 26.28
			Total for Check Number 8040:	0.00	768.94
8041	10409 48301	FRED CARSON DISPOSAL INC. COMMERCIAL WASTE SERVICE/RECYCLIN	12/14/2018		185.00

Check No	Vendor No Invoice No	Vendor Name Description	Check Date Reference	Void Checks	Check Amount
			Total for Check Number 8041:	0.00	185.00
8042	10475 29251	HANSON AGGREGATES PA INC DAY OF CARING CONCRETE	12/14/2018		386.25
			Total for Check Number 8042:	0.00	386.25
8043	10486 120618	RYAN HENDRICK CI YEARLY MEETING MEAL ALLOWANCE	12/14/2018		90.14
			Total for Check Number 8043:	0.00	90.14
8044	10487 7769	HERITAGE ELECTRIC FIXED FIVE PINE GROVE MILLS STREET L	12/14/2018		560.00
			Total for Check Number 8044:	0.00	560.00
8045	10506 10045	HR EXCAVATING INC SNOW EVENT 11/16/18	12/14/2018		498.00
			Total for Check Number 8045:	0.00	498.00
8046	10515 51705	HYDRAULIC SOLUTIONS INC REPAIR HYDRAULIC CYLINDER/WELD CC	12/14/2018		506.90
			Total for Check Number 8046:	0.00	506.90
8047	10536 604898	INTOXIMETERS MOUTNPIECE CUP	12/14/2018		150.00
			Total for Check Number 8047:	0.00	150.00
8048	10631 082218 082218	DANIEL LEWIS MILEAGE LEWIS TRAINING LEWIS	12/14/2018		74.90 195.10
			Total for Check Number 8048:	0.00	270.00
8049	10644 120118 120118 120118 120118 120118	LOWES COMPANIES INC BSH SDS PLUS 5/8" X 12 GRAY STEEL/MAIL BOX SNOW BRUSH SIGNS/LNX 6" TRUE TEMPTER 18 IN COMBO	12/14/2018		20.89 58.05 13.26 16.78 39.84
			Total for Check Number 8049:	0.00	148.82
8050	10674 18 5	MCCORMICK TAYLOR INC ES-387 ES-390	12/14/2018		1,722.50 465.00
			Total for Check Number 8050:	0.00	2,187.50
8051	10692 482128463	MIDSTATE TOOL & SUPPLY INC AIR OPERATED FLUID EVAC/EXTRACT/DI	12/14/2018		176.07
			Total for Check Number 8051:	0.00	176.07
8052	10710 121318	DAVID J MODRICKER EDUCATION REIMBURSEMENT MODRICK	12/14/2018		477.80

Check No	Vendor No Invoice No	Vendor Name Description	Check Date Reference	Void Checks	Check Amount
			Total for Check Number 8052:	0.00	477.80
8053	10712 113018	MONARCH CLEANERS PW UNIF CLN NOV 18	12/14/2018		609.80
			Total for Check Number 8053:	0.00	609.80
8054	10712 113018	MONARCH CLEANERS CHIEF'S UNIF CLN NOV 18	12/14/2018		23.26
			Total for Check Number 8054:	0.00	23.26
8055	10712 113018	MONARCH CLEANERS POLICE UNIF CLN NOV 18	12/14/2018		310.70
			Total for Check Number 8055:	0.00	310.70
8056	10715 120618	DEVON MORAN TUITION & BOOKS	12/14/2018		3,259.64
			Total for Check Number 8056:	0.00	3,259.64
8057	10756 711392-0 711392-0 711392-0 711392-0 711392-0	NITTANY OFFICE EQUIPMENT PAPER PAPER PAPER CREDIT CREDIT	12/14/2018		121.27 121.26 121.27 -99.31 -22.19
			Total for Check Number 8057:	0.00	242.30
8058	10760 113018	NOERRS GARAGE AIR FILTERS/OIL FILTERS/HVAC FILTER/B	12/14/2018		609.12
			Total for Check Number 8058:	0.00	609.12
8059	10762 INV290918 INV291430	NORTH CENTRAL DIGITAL SYSTEMS COPIER LEASE KYOCERA/ECOSYSM3550II COPIER LEASE KYOCERA/TASKALFA3010I	12/14/2018		108.80 130.98
			Total for Check Number 8059:	0.00	239.78
8060	10798 794237	PA ONE CALL SYSTEM MONTHLY ACITIVTY FEE/SUPPLEMENTAL	12/14/2018		77.16
			Total for Check Number 8060:	0.00	77.16
8061	10816 ALC 17395	PATCTECH PATCTECH SERVICES: NOVEMBER HOURS	12/14/2018		400.00
			Total for Check Number 8061:	0.00	400.00
8062	11344 156755 156946	PETERSON INDUSTRIES INC. HYDRUALIC ORING VALVE	12/14/2018		47.76 551.93
			Total for Check Number 8062:	0.00	599.69
8063	10864 3307624667	PITNEY BOWES GLOBAL FINANCIAL POSTAGE RENTAL	12/14/2018		122.01

Check No	Vendor No Invoice No	Vendor Name Description	Check Date Reference	Void Checks	Check Amount
			Total for Check Number 8063:	0.00	122.01
8064	10893 DC015570	PRINT O STAT INC BASE RATE 11/18-12/17	12/14/2018		112.00
			Total for Check Number 8064:	0.00	112.00
8065	10927 1946	REDLINE SPEED SHINE FLEET MEMBERSHIP	12/14/2018		260.33
			Total for Check Number 8065:	0.00	260.33
8066	11614 ARV/38104798 ARV/38123512	SNAP ON INDUSTRIAL 7IN STRPR CRMP CUTTER/WIRE CRIMP/VA DIGITAL PRESSURE GAUGE/OPEN DUEL F	12/14/2018		528.57 97.57
			Total for Check Number 8066:	0.00	626.14
8067	11017 1357826	SOSMETAL PRODUCTS INC RUBBER GROMMET/SILICONE PASTE	12/14/2018		193.19
			Total for Check Number 8067:	0.00	193.19
8068	11050 220-96432	STOCKER CHEVROLET INC PUMP/PIPE/HEADLAMP/SENSOR KIT/NUT/	12/14/2018		1,369.85
			Total for Check Number 8068:	0.00	1,369.85
8069	11055 1400195	STONER INC FOAMING CARWASH 5 GALLON	12/14/2018		62.80
			Total for Check Number 8069:	0.00	62.80
8070	11058 131238	STOVER MCGLAUGHLIN ZONING DECISION PART I KING WEALTH I	12/14/2018		1,006.50
			Total for Check Number 8070:	0.00	1,006.50
8071	11678 1401	TET LANDSCAPING, LLC GRIND SIDEWALKS/PATCH SIDEWALKS/AI	12/14/2018		2,284.80
			Total for Check Number 8071:	0.00	2,284.80
8072	10481 110027 110027	THE HARTMAN GROUP TAX COLLECTOR BOND 2019 TAX COLLECTOR BOND 2019	12/14/2018		6,600.00 362.00
			Total for Check Number 8072:	0.00	6,962.00
8073	11113 120118	TRACTOR SUPPLY CREDIT PLAN CHISEL/BLATING GRIT FINE/BOLT CUTTEI	12/14/2018		317.41
			Total for Check Number 8073:	0.00	317.41
8074	11136 6144024 6144026	U S MUNICIPAL SUPPLY INC POSTS SIGNS	12/14/2018		264.00 638.00
			Total for Check Number 8074:	0.00	902.00
8075	11159 121518	VERIZON WIRELESS AIRTIME CARD USE NOV 18	12/14/2018		40.01

Check No	Vendor No Invoice No	Vendor Name Description	Check Date Reference	Void Checks	Check Amount
	121518	POLICE CELL USE NOV 18			159.56
	121518	OEO CELL USE NOV 18			40.35
	121518	CELL PHONE WITHHOLDING NOV 18			44.00
	121518	POLICE CELL PHONE WITHHOLDING NOV			-44.00
			Total for Check Number 8075:	0.00	239.92
8076	11551	WELLS FARGO	12/14/2018		
	69014588	COPIER LEASE 3051CI			206.41
	69046411	COPIER LEASE 3010I			131.33
			Total for Check Number 8076:	0.00	337.74
8077	11190	WESCO RECEIVABLES CORP	12/14/2018		
	779903	BULBS			114.84
			Total for Check Number 8077:	0.00	114.84
8078	11192	WEST PENN POWER	12/14/2018		
	2239-DEC18	S WATER ST			22.50
	7704-DEC18	PGM-BLINKER-WEST			8.39
	7852-DEC18	PGM-BLINKER-EAST			8.39
	7920-DEC18	N ATHERTON ST			29.01
			Total for Check Number 8078:	0.00	68.29
8079	11199	WILLIAMS BROTHERS	12/14/2018		
	1106310-01	HEXSG3-516C212			32.00
			Total for Check Number 8079:	0.00	32.00
8080	11201	WINDSTREAM	12/14/2018		
	11490114-DEC18	LONG DIST NOV18			41.78
	11490114-DEC18	LONG DIST NOV18			47.10
	11490114-DEC18	LINE/BASIC SERV NOV18			142.70
	11490114-DEC18	LINE/BASIC SERV NOV18			285.39
	11490114-DEC18	LINE/BASIC SERV NOV18			285.38
			Total for Check Number 8080:	0.00	802.35
8081	11203	WITMER PUBLIC SAFETY GROUP INC	12/14/2018		
	S1901611	PANTS			67.00
			Total for Check Number 8081:	0.00	67.00
8082	11687	YOUR PLUMBING SUPPLY LLC	12/14/2018		
	102624	URINAL REPAIR KIT			32.50
	102637	CLOSET REPAIR KIT			32.32
			Total for Check Number 8082:	0.00	64.82
8083	10016	AFLAC	12/30/2018		
	629517	INSURANCE WITHELD			176.77
			Total for Check Number 8083:	0.00	176.77
8084	10122	BOROUGH OF STATE COLLEGE	12/30/2018		
	7181	4TH QTR TECH SERVICES 2018 RMS			2,450.00
			Total for Check Number 8084:	0.00	2,450.00
8085	11224	CAMPBELL DURRANT BEATTY PALO	12/30/2018		

Check No	Vendor No Invoice No	Vendor Name Description	Check Date Reference	Void Checks	Check Amount
	64842	REVIEW COLLECTIVE BARGAINING AGRE			760.23
			Total for Check Number 8085:	0.00	760.23
8086	11384 21969	CENTRAL PA DOCK & DOOR LLC 6 DOOR SECTIONS INSTALLED PER ATTACH	12/30/2018		2,600.00
			Total for Check Number 8086:	0.00	2,600.00
8087	10201 122818	CENTRE COUNTY UNITED WAY U-WAY	12/30/2018		33.75
			Total for Check Number 8087:	0.00	33.75
8088	10203 3986013 3989589 3995880	CENTRE DAILY TIMES BOS MTG WORKSESSION DEC 13 BOS MTG DEC 10TH BOS MTG FINAL BUDGET	12/30/2018		54.51 110.35 165.18
			Total for Check Number 8088:	0.00	330.04
8089	10231 458289 458692 459143	CLEARFIELD WHOLESALE PAPER CO WIPER WORKHORSE FACIAL TISSUE CLEANER/DEGREASER SPARY NINE	12/30/2018		215.02 69.04 152.50
			Total for Check Number 8089:	0.00	436.56
8090	10241 43817	COLONIAL PRESS 1500 ABSENTEE REPORTS	12/30/2018		258.00
			Total for Check Number 8090:	0.00	258.00
8091	10243 10006-DEC18 10007-DEC18	COLUMBIA GAS OF PA INC OFFICE GAS GARAGE GAS	12/30/2018		837.15 1,283.51
			Total for Check Number 8091:	0.00	2,120.66
8092	10250 585466122018103	COMMONWEALTH OF PA USTIF UNDERGROUND STORAGE TANKS	12/30/2018		495.00
			Total for Check Number 8092:	0.00	495.00
8093	10297 21151	DAVIDHEISERS INC STOP WATCH/VASCAR/SPEED TESTED	12/30/2018		346.00
			Total for Check Number 8093:	0.00	346.00
8094	10321 4723402	DLT SOLUTIONS LLC SYNERGIS VERTICAL SOLUTIONS HELPD	12/30/2018		1,200.00
			Total for Check Number 8094:	0.00	1,200.00
8095	11217 122818	FERGUSON TOWNSHIP POLICE ASSOC POLICE UNION DUES WITHHELD	12/30/2018		420.00
			Total for Check Number 8095:	0.00	420.00
8096	10488 18/420-1 18/423 19/002	CHARLES F HERR JR SEO FOR HICKS/JEREMIAH SEO FOR MASER/ZACK 2018 DEP REQUEST FOR REIMBURSEMENT	12/30/2018		140.00 400.00 300.00

Check No	Vendor No Invoice No	Vendor Name Description	Check Date Reference	Void Checks	Check Amount
			Total for Check Number 8096:	0.00	840.00
8097	10492 P0825194	HIRERIGHT SOLUTIONS INC SUBSCRIPTION FEE	12/30/2018		250.00
			Total for Check Number 8097:	0.00	250.00
8098	10506 10015 10091 10100	HR EXCAVATING INC SNOW EVENT 11/15/18 SNOW EVENT 11/24/18 SNOW EVENT 11/28/18	12/30/2018		705.50 207.50 166.00
			Total for Check Number 8098:	0.00	1,079.00
8099	11253 INFQ8506-18 INFQ9697	INFRADAPT LLC ANNUAL MAINTENANCE 2-YEAR AGMNT - DIGIUM SWITCHVOX GC	12/30/2018		4,000.00 2,601.00
			Total for Check Number 8099:	0.00	6,601.00
8100	10546 120118	J C EHRLICH CO INC COMMERCIAL INTEGRATED PEST MANAC	12/30/2018		1,092.00
			Total for Check Number 8100:	0.00	1,092.00
8101	10590 84731	KISTLER OBRIEN HALON SYSTEM INSPECTION SEMI/ENG II	12/30/2018		406.60
			Total for Check Number 8101:	0.00	406.60
8102	10615 122118	KEVIN J LAUDENSLAGER MILEAGE LAUDENSLAGER	12/30/2018		91.56
			Total for Check Number 8102:	0.00	91.56
8103	10661 123118 123118 123118 123118	JOSH MARTIN 1ST QTR CLOTHING ALLOWANCE MARTIN 2ND QTR CLOTHING ALLOWANCE MARTIN 3RD QTR CLOTHING ALLOWANCE MARTIN 4TH QTR CLOTHING ALLOWANCE MARTIN	12/30/2018		187.50 187.50 187.50 187.50
			Total for Check Number 8103:	0.00	750.00
8104	10669 S 11222	MAXWELL TRUCK & EQUIPMENT LL EYE BOLT	12/30/2018		27.39
			Total for Check Number 8104:	0.00	27.39
8105	10674 19	MCCORMICK TAYLOR INC ES-387	12/30/2018		16,250.00
			Total for Check Number 8105:	0.00	16,250.00
8106	10762 INV296893	NORTH CENTRAL DIGITAL SYSTEMS COPIER LEASE TASKALFA3252CI	12/30/2018		385.67
			Total for Check Number 8106:	0.00	385.67
8107	11332 7882 7915 7915	NTM ENGINEERING INC FERGUSON TOWNSHIP MISC SERVICES ES-1107 ES-372	12/30/2018		292.93 32.66 229.50

Check No	Vendor No Invoice No	Vendor Name Description	Check Date Reference	Void Checks	Check Amount
	7915	ES-387			306.00
			Total for Check Number 8107:	0.00	861.09
8108	10773 6427227	OLD DOMINION BRUSH ELEMENT/FILTER	12/30/2018		291.21
			Total for Check Number 8108:	0.00	291.21
8109	10845 120118 120118 120118	PENNSYLVANIA MUNICIPAL HEALTH HEALTHCARE INS JAN 18 EYECARE INS JAN 18 DENTAL INS JAN 18	12/30/2018		82,022.46 688.42 3,572.45
			Total for Check Number 8109:	0.00	86,283.33
8110	11700 122618	PETS COME FIRST NOV & DEC DROP OFF STRAY ANIMALS	12/30/2018		200.00
			Total for Check Number 8110:	0.00	200.00
8111	10893 DC015664	PRINT O STAT INC BASE RATE 12/18-01/17	12/30/2018		112.00
			Total for Check Number 8111:	0.00	112.00
8112	10932 122818	RESERVE ACCOUNT POSTAGE BY PHONE	12/30/2018		1,000.00
			Total for Check Number 8112:	0.00	1,000.00
8113	11733 88248	ROADSAFE TRAFFIC SYSTEMS INC CURVE FLEX MARKER	12/30/2018		950.00
			Total for Check Number 8113:	0.00	950.00
8114	10953 123118	BRIAN ROSE MILEAGE ROSE	12/30/2018		61.04
			Total for Check Number 8114:	0.00	61.04
8115	11551 69123453	WELLS FARGO COPIER LEASE 3051CI	12/30/2018		206.41
			Total for Check Number 8115:	0.00	206.41
8116	11192 0840-DEC18 0873-DEC18 1054-DEC18 1966-DEC18 2449-DEC18 2510-DEC18 2691-DEC18 2711-DEC18 3377-DEC18 5290-DEC18 5727-DEC18 5843-DEC18 6113-DEC18 6150-DEC18 6438-DEC18	WEST PENN POWER WHITEHALL RD/RESEARCH DR WHITEHALL RD/W COLLEGE W COLLEGE AVE 225 SCIENCE PARK RD WESTERLY PKWY BLUE CR W CHERRY LN MARTIN ST SCIENCE PARK ROAD SCIENCE PARK ROAD BRISTOL AVE 1901 CIRCLEVILLE ROAD OFFICE COMPLEX 1301 W COLLEGE AVE GARAGE/MAINT BLDG OLD GATESBURG RD 1209 N ATHERTON ST	12/30/2018 01.433.036 01.433.036 01.433.036 01.433.036 01.433.036 01.433.036 01.433.036 01.433.036 01.433.036 01.433.036 01.409.036 01.433.036 01.409.036 01.433.036 01.433.036		48.73 55.14 57.77 39.75 30.55 59.61 41.67 81.13 40.39 49.35 1,477.79 16.09 507.75 111.04 33.91

Check No	Vendor No Invoice No	Vendor Name Description	Check Date Reference	Void Checks	Check Amount
	6651-DEC18	BIKE TUNNEL	01.433.036		162.28
	6725-DEC18	BLDG #3	01.409.036		205.46
	6735-DEC18	N HILLS DR	01.433.036		19.69
	7595-DEC18	1282 N ATHERTON ST	01.433.036		47.10
	7920-DEC18	N ATHERTON ST	01.433.036		29.01
	8100-DEC18	2100 W COLLEGE AVE	01.433.036		58.85
	8136-DEC18	BLUE COURSE DR & HAVENSHIRE DR	01.433.036		47.39
	9110-DEC18	W COLLEGE AVE	01.433.036		46.18
	9975-DEC18	AARON DR MARTIN ST	01.433.036		31.20
			Total for Check Number 8116:	0.00	3,297.83
8117	11194 123118	WEX BANK FUEL	12/30/2018		145.02
			Total for Check Number 8117:	0.00	145.02
2017042	11784 1802265286	PA DEPT OF TRANSPORTATION-COMP DOT MUNICIPALITIES CONTRIBUTION	12/14/2018		29,384.08
			Total for Check Number 2017042:	0.00	29,384.08
2017043	10819 17-169-1 17-169-2	PATTON TOWNSHIP SUPERVISORS 17-169 VALLEY VISTA SHARED USE PATH 17-169 VALLEY VISTA SHARED USE PATH	12/14/2018		9,898.12 9,133.40
			Total for Check Number 2017043:	0.00	19,031.52
2017044	10674 4	MCCORMICK TAYLOR INC TRANSPORTATION MOBILITY STUDY	12/30/2018		8,325.28
			Total for Check Number 2017044:	0.00	8,325.28
			Report Total (124 checks):	0.00	592,099.87

RESOLUTION NO. _____

A RESOLUTION OF THE TOWNSHIP OF FERGUSON, CENTRE COUNTY, PENNSYLVANIA CERTIFYING PROVISION OF LOCAL MATCH FOR STATE OPERATING AND CAPITAL FINANCIAL ASSISTANCE TO THE CENTRE AREA TRANSPORTATION AUTHORITY AND REPEALING RESOLUTION 2018-18.

The Board of Supervisors of the Township of Ferguson resolves and certifies that it will provide to the Centre Area Transportation Authority local funds in the amount of \$128,638 to match state funds provided pursuant to 74 Pa. C.S. Section 1513 in Fiscal Year 2019-20.

Further, the Board of Supervisors resolves and certifies that the required amount of local matching funds will be provided no later than the end of the State Fiscal Year, June 30, 2020. The following schedule indicates dates and payments of local matching funds:

<u>Payment Date</u>	<u>Operating Costs</u>	<u>Capital Funding</u>	<u>Total Payment Amount</u>
January 2019	\$27,143	\$4,473	\$31,616
April 2019	\$27,143	\$4,473	\$31,616
July 2019	\$28,267	\$4,436	\$32,703
October 2019	\$28,267	\$4,436	\$32,703

RESOLVED this 21st day of January 2019.

TOWNSHIP OF FERGUSON

By: _____
Peter Buckland, Chairman
Board of Supervisors

[S E A L]

ATTEST:

By: _____
David G. Pribulka, Secretary

I, David G. Pribulka, Secretary of the Board of Supervisors of the Township of Ferguson do hereby certify that the foregoing is a true and correct copy of the Resolution adopted at a regular meeting of the Board of Supervisors held the 21st day of January 2019.

By: _____
(Signature) (Date)

Local Match Shares



CATA

Route & Schedule Information

(814) 238-CATA(2282)

www.catabus.com

realtime.catabus.com

LOCAL MATCH SHARES

2019/20 Local Match Shares	Operating	Capital	Total
State College Borough	\$ 121,052	\$ 18,996	\$ 140,048
Ferguson Township	\$ 113,069	\$ 17,743	\$ 130,812
Patton Township	\$ 91,877	\$ 14,418	\$ 106,295
College Township	\$ 72,742	\$ 11,415	\$ 84,157
Harris Township	\$ 25,616	\$ 4,020	\$ 29,636
Spring Township	\$ 25,035	\$ 3,929	\$ 28,964
Bellefonte Borough	\$ 20,948	\$ 3,287	\$ 24,235
Halfmoon Township	\$ 6,302	\$ 989	\$ 7,291
Benner Township	\$ 5,109	\$ 802	\$ 5,911
Penn State University	\$ 155,496	\$ 24,401	\$ 179,897
Total	\$ 637,246	\$ 100,000	\$ 737,246

Every dollar of local subsidy brings in \$30.98 of other funding:

Local Subsidy

- \$1 (\$606,902)



State Subsidy

- \$8.69 (\$5,274,836)



Federal Subsidy

- \$9.69 (\$5,881,737)



Farebox Revenue, etc.

- \$12.74 (\$7,732,222)



Amounts are approximations based on CATA's FY 2018/19 budget totals.

Operating Local Match Shares

The Authority's local match for FY 2019/20, is \$637,246, a 5.00% increase over FY 2018/19.

The requested local operating match is driven by the state funding received by CATA. Legislation requires that CATA's local funding partners provide a 15% local match on the operating funding provided by PennDOT, but there is a ceiling provision in the regulations stating that the maximum increase that can be required of a transit system in any single year is 5%. Having been historically under-funded, CATA has never come close to the 15% level and will remain in the category of those transit agencies qualifying for the 5% per year cap for the foreseeable future. Should adequate funding to cover the required local operating match not be obtained, CATA would be forced to return the portion of PennDOT funding that is not matched. As every dollar of local match nets an additional \$8.69 in state and \$9.69 in federal funding, this would impact CATA services.

Once total local match has been determined, for many years the Authority allocated amounts to each funding partner using the Miller formula, the details and history of which can be found in prior budget documents. During FY 2015/16 and FY 2016/17, the Miller formula was reassessed by the funding partners, and the group agreed upon a new CATA formula. The CATA formula includes population numbers already used in accepted COG formulas, service miles, and number of stops. These three factors are weighted to soften large shifts based on service changes alone. The amount for contracted municipalities is taken off the top based on a cost per mile that will advance with the overall percentage change for local match, which mirrors how local match share is treated for Penn State University. The remainder is then split amongst the member municipalities using the new CATA formula.

OPERATING LOCAL MATCH SHARES	2017/18 Actual	% of total	2018/19 Actual	% of total	2019/20 Proposed	% of total	Percentage Change*
State College Borough	\$108,969	18.85%	\$113,394	18.68%	\$121,052	19.00%	6.75%
Ferguson Township	\$103,144	17.84%	\$108,573	17.89%	\$113,069	17.74%	4.14%
Patton Township	\$ 83,532	14.45%	\$ 88,028	14.50%	\$ 91,877	14.42%	4.37%
College Township	\$ 66,354	11.48%	\$ 69,660	11.48%	\$ 72,742	11.42%	4.42%
Harris Township	\$ 23,125	4.00%	\$ 24,496	4.04%	\$ 25,616	4.02%	4.57%
Spring Township	\$ 22,708	3.93%	\$ 23,842	3.93%	\$ 25,035	3.93%	5.00%
Bellevue Borough	\$ 19,000	3.29%	\$ 19,950	3.29%	\$ 20,948	3.29%	5.00%
Halfmoon Township	\$ 5,716	0.99%	\$ 6,002	0.99%	\$ 6,302	0.99%	5.00%
Benner Township	\$ 4,634	0.80%	\$ 4,866	0.80%	\$ 5,109	0.80%	4.99%
Penn State University	\$141,039	24.39%	\$148,091	24.40%	\$155,496	24.40%	5.00%
Total	\$578,221	100.00%	\$606,902	100.00%	\$637,246	100.00%	5.00%

** Reflects percentage change between 2019/20 and 2018/19.*

CATA Formula

Municipality	Mileage	Local Share Total	Population	Route Miles	# of Stops	Pop Cost	Miles Cost	Stops Cost	Total Cost	18-19 Cost	Change	% Change
Bellefonte 41%	91,170.70	\$ 51,092.13	Using Historical Split						\$ 20,948.00	\$ 19,950.00	\$ 998.00	5.0%
Spring 49%									\$ 25,035.00	\$ 23,842.00	\$ 1,193.00	5.0%
Benner 10%									\$ 5,109.00	\$ 4,866.00	\$ 243.00	5.0%
<i>Blife, Spr, Bnr Sub Total</i>									\$ 51,092.00	\$ 48,658.00	\$ 2,434.00	5.0%
Halfmoon	11,245.50	\$ 6,301.99							\$ 6,302.00	\$ 6,002.00	\$ 300.00	5.0%
Penn State	381,027.70	\$ 155,495.55	n/a	n/a	n/a	n/a	n/a	n/a	\$ 155,496.00	\$ 148,091.00	\$ 7,405.00	5.0%
State College	462,646.25		26.6742%	37.9856%	20.6538%	\$ 33,958.10	\$ 56,418.01	\$ 30,676.00	\$ 121,052.00	\$ 113,394.00	\$ 7,658.00	6.8%
Ferguson	282,989.20		29.1187%	23.2349%	27.9346%	\$ 37,070.12	\$ 34,509.57	\$ 41,489.79	\$ 113,069.00	\$ 108,573.00	\$ 4,496.00	4.1%
Patton	254,428.65	\$ 424,356.38	20.9281%	20.8899%	23.0312%	\$ 26,642.92	\$ 31,026.67	\$ 34,207.03	\$ 91,877.00	\$ 88,028.00	\$ 3,849.00	4.4%
College	199,080.80		13.6263%	16.3456%	20.9510%	\$ 17,347.22	\$ 24,277.26	\$ 31,117.42	\$ 72,742.00	\$ 69,660.00	\$ 3,082.00	4.4%
Harris	18,805.65		9.6527%	1.5440%	7.4294%	\$ 12,288.55	\$ 2,293.22	\$ 11,034.50	\$ 25,616.00	\$ 24,496.00	\$ 1,120.00	4.6%
<i>Member Sub Total</i>	<i>1,217,950.55</i>								\$ 424,356.00	\$ 404,151.00	\$ 20,205.00	5.0%
Total	1,701,394.45	\$ 637,246.05							\$ 637,246.00	\$ 606,902.00	\$ 30,344.00	

19/20 cost per local mile \$0.5604

18/19 cost per local mile \$0.5337

Dollar Change \$0.0267

Percent Change 5.00%

Population		
2017 US		
Census less	Students	Percent of Total
State College Borough	15,124	26.67%
Ferguson Township	16,510	29.12%
College Township	7,726	13.63%
Patton Township	11,866	20.93%
Harris Township	5,473	9.65%
Total	56,699	100.00%

REVENUE MILEAGE - ALLOCATION TO MUNICIPALITIES - FY 2017/18

Route	Route Description	Service	Days	Service Days	Trips	Mileage	St. College	Fergusson	College	Patton	Harris	Bellefonte	Spring	Benner	Halfmoon
A	Park Forest	Full	Weekday	255.00	4.00	9.60	3.70	4.40	0.00	1.50	0.00	0.00	0.00	0.00	0.00
	Annual Total			255.00	1,020.00	9,792.00	3,774.00	4,488.00	0.00	1,530.00	0.00	0.00	0.00	0.00	0.00
	Percentage					0.7416%	38.5417%	45.8333%	0.0000%	15.6250%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%
	Boalsburg	Full	AM Peak	255.00	1.50	21.10	6.40	0.00	3.40	0.00	11.30	0.00	0.00	0.00	0.00
B			Saturday	52.00	3.00	21.10	6.40	0.00	3.40	0.00	11.30	0.00	0.00	0.00	0.00
	Sub Totals			307.00	538.50	11,362.35	3,446.40	0.00	1,830.90	0.00	6,085.05	0.00	0.00	0.00	0.00
			PM Peak	249.00	2.00	23.20	6.40	0.00	3.40	0.00	13.40	0.00	0.00	0.00	0.00
			Mid Day/Evening	249.00	2.00	21.10	6.40	0.00	3.40	0.00	11.30	0.00	0.00	0.00	0.00
			Ski Season	40.00	1.50	16.00	6.40	0.00	2.60	0.00	7.00	0.00	0.00	0.00	0.00
	Sub Totals			538.00	1,056.00	23,021.40	6,758.40	0.00	3,542.40	0.00	12,720.60	0.00	0.00	0.00	0.00
C	Annual Total			845.00	1,594.50	34,383.75	10,204.80	0.00	5,373.30	0.00	18,805.65	0.00	0.00	0.00	0.00
	Percentage					2.6041%	29.6791%	0.0000%	15.6274%	0.0000%	54.6934%	0.0000%	0.0000%	0.0000%	0.0000%
	Houserville	Full	Weekday	255.00	5.00	13.30	3.20	0.00	10.10	0.00	0.00	0.00	0.00	0.00	0.00
	Annual Total			255.00	1,275.00	16,957.50	4,080.00	0.00	12,877.50	0.00	0.00	0.00	0.00	0.00	0.00
F	Percentage					1.2843%	24.0602%	0.0000%	75.9398%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%
	Pine Grove	Full	Weekday	255.00	4.00	22.60	6.00	16.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Annual Total			255.00	1,020.00	23,052.00	6,120.00	16,932.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Percentage					1.7459%	26.5487%	73.4513%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%
G	Stormstown	Full	Weekday	255.00	4.50	31.20	3.70	1.80	0.00	15.90	0.00	0.00	0.00	0.00	9.80
	Annual Total			255.00	1,147.50	35,802.00	4,245.75	2,065.50	0.00	18,245.25	0.00	0.00	0.00	0.00	11,245.50
	Percentage					2.7115%	11.8590%	5.7692%	0.0000%	50.9615%	0.0000%	0.0000%	0.0000%	0.0000%	31.4103%
	Toftrees	Full	Weekday	159.00	15.50	25.30	7.80	0.00	5.60	11.90	0.00	0.00	0.00	0.00	0.00
HP			Short HP	159.00	3.50	14.80	3.20	0.00	3.40	8.20	0.00	0.00	0.00	0.00	0.00
			Saturday	33.00	13.50	25.30	7.80	0.00	5.60	11.90	0.00	0.00	0.00	0.00	0.00
	Full Service Totals			351.00	3,466.50	81,859.20	24,478.80	0.00	18,188.10	39,192.30	0.00	0.00	0.00	0.00	0.00
		Reduced	Weekday	96.00	15.50	29.30	7.80	0.00	5.60	15.90	0.00	0.00	0.00	0.00	0.00
			Short HP	96.00	3.50	14.80	3.20	0.00	3.40	8.20	0.00	0.00	0.00	0.00	0.00
			Saturday	19.00	13.50	29.30	7.80	0.00	5.60	15.90	0.00	0.00	0.00	0.00	0.00
Reduced Service Totals			211.00	2,080.50	56,086.65	14,682.30	0.00	10,911.60	30,492.75	0.00	0.00	0.00	0.00	0.00	0.00
Annual Total			562.00	5,547.00	137,945.85	39,161.10	0.00	29,099.70	69,685.05	0.00	0.00	0.00	0.00	0.00	0.00
Percentage					10.4475%	28.3887%	0.0000%	21.0950%	50.5162%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%

REVENUE MILEAGE - ALLOCATION TO MUNICIPALITIES - FY 2017/18

Route	Route Description	Service	Days	Service Days	Trips	Mileage	St. College	Ferguson	College	Patton	Harris	Bellefonte	Spring	Benner	Halfmoon	
K	Cato Park	Full	Weekday	255.00	17.00	10.70	3.50	7.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Saturday	52.00	7.00	10.70	3.50	7.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
		Annual Total		307.00	4,699.00	50,279.30	16,446.50	33,832.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Percentage				3.8080%	32.7103%	67.2897%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%
		Nittany Mall	Full	Weekday	159.00	36.00	15.10	3.90	0.00	11.20	0.00	0.00	0.00	0.00	0.00	0.00
				Saturday	33.00	17.50	15.10	3.90	0.00	11.20	0.00	0.00	0.00	0.00	0.00	0.00
				Sunday	33.00	18.50	15.10	3.90	0.00	11.20	0.00	0.00	0.00	0.00	0.00	0.00
			Full Service Totals		225.00	6,912.00	104,371.20	26,956.80	0.00	77,414.40	0.00	0.00	0.00	0.00	0.00	0.00
			Reduced	Weekday	96.00	10.00	15.10	3.90	0.00	11.20	0.00	0.00	0.00	0.00	0.00	0.00
				Saturday	19.00	15.50	15.10	3.90	0.00	11.20	0.00	0.00	0.00	0.00	0.00	0.00
			Sunday	18.00	18.50	15.10	3.90	0.00	11.20	0.00	0.00	0.00	0.00	0.00	0.00	
		Reduced Service Totals		133.00	1,587.50	23,971.25	6,191.25	0.00	17,780.00	0.00	0.00	0.00	0.00	0.00	0.00	
		Annual Total		358.00	8,499.50	128,342.45	33,148.05	0.00	95,194.40	0.00	0.00	0.00	0.00	0.00	0.00	
		Percentage				9.7202%	25.8278%	0.0000%	74.1722%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	
N	Martin St	Full	Weekday	159.00	27.50	8.80	3.50	3.20	0.00	2.10	0.00	0.00	0.00	0.00	0.00	
			Saturday	33.00	26.00	8.80	3.50	3.20	0.00	2.10	0.00	0.00	0.00	0.00	0.00	
			Sunday	53.00	18.00	8.80	3.50	3.20	0.00	2.10	0.00	0.00	0.00	0.00	0.00	
			Full Service Totals		245.00	6,184.50	54,423.60	21,645.75	19,790.40	0.00	12,987.45	0.00	0.00	0.00	0.00	0.00
			Reduced	Weekday	96.00	27.50	8.80	3.50	3.20	2.10	0.00	0.00	0.00	0.00	0.00	0.00
				Saturday	19.00	26.00	8.80	3.50	3.20	2.10	0.00	0.00	0.00	0.00	0.00	0.00
			Reduced Service Totals		115.00	3,134.00	27,579.20	10,969.00	10,028.80	0.00	6,581.40	0.00	0.00	0.00	0.00	0.00
			Annual Total		360.00	9,318.50	82,002.80	32,614.75	29,819.20	0.00	19,568.85	0.00	0.00	0.00	0.00	0.00
			Percentage				6.2106%	39.7727%	36.3636%	0.0000%	23.8636%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%
		Martin St		Weekday	159.00	50.00	6.10	1.10	3.20	0.00	1.80	0.00	0.00	0.00	0.00	0.00
NE		Annual Total		159.00	7,950.00	48,495.00	8,745.00	25,440.00	0.00	14,310.00	0.00	0.00	0.00	0.00	0.00	
		Percentage				3.6728%	18.0328%	52.4590%	0.0000%	29.5082%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	
		Martin St/Vairo Blvd	Weekday	159.00	21.00	12.20	1.90	4.40	1.90	4.00	0.00	0.00	0.00	0.00	0.00	
		Toftrees Ave		33.00	18.00	12.20	1.90	4.40	1.90	4.00	0.00	0.00	0.00	0.00	0.00	
NV			Sunday	35.00	15.00	12.20	1.90	4.40	1.90	4.00	0.00	0.00	0.00	0.00	0.00	
		Annual Total		227.00	4,458.00	54,387.60	8,470.20	19,615.20	8,470.20	17,832.00	0.00	0.00	0.00	0.00	0.00	
		Percentage				4.1191%	15.5738%	36.0656%	15.5738%	32.7869%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	

REVENUE MILEAGE - ALLOCATION TO MUNICIPALITIES - FY 2017/18

Route	Route Description	Service	Days	Service Days	Trips	Mileage	St. College	Ferguson	College	Patton	Harris	Bellefonte	Spring	Benner	Halfmoon	
R	Waupelani Dr	Full	Weekday	159.00	37.00	7.20	7.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Saturday	33.00	26.00	7.20	7.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Sunday	53.00	26.00	7.20	7.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
		Full Service Totals		245.00	8,119.00	58,456.80	58,456.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Reduced	Weekday	96.00	37.00	7.20	7.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Saturday	19.00	26.00	7.20	7.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Reduced Service Totals		115.00	4,046.00	29,131.20	29,131.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Annual Total		360.00	12,165.00	87,588.00	87,588.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Percentage				6.6336%	100.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%
		Waupelani Dr	Full	Weekday	159.00	47.50	7.10	7.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RC																
		Annual Total		159.00	7,552.50	53,622.75	53,622.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Percentage				4.0612%	100.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%
		Waupelani Dr		Weekday	159.00	20.00	5.20	5.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
RP			Saturday	33.00	16.00	5.20	5.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0	
		Annual Total		192.00	3,708.00	19,281.60	19,281.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Percentage				1.4603%	100.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%
S	Science Pk Rd	Full	Weekday	255.00	4.50	12.40	5.40	7.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
		Annual Total		255.00	1,147.50	14,229.00	6,196.50	8,032.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Percentage				1.0777%	43.5484%	56.4516%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%
		University Terrace	Full	Weekday	159.00	20.00	4.00	3.60	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00
UT		Annual Total		159.00	3,180.00	12,720.00	11,448.00	0.00	1,272.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Percentage				0.9634%	90.0000%	0.0000%	10.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%
		Vairo Blvd.	Full	Weekday	159.00	27.00	9.50	3.50	3.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00
			Saturday	33.00	26.00	9.50	3.50	3.00	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00
V			Sunday	53.00	18.00	9.50	3.50	3.00	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00
		Full Service Totals		245.00	6,105.00	57,997.50	21,367.50	18,315.00	0.00	18,315.00	0.00	0.00	0.00	0.00	0.00	0.00
		Reduced	Weekday	96.00	27.00	9.50	3.50	3.00	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00
			Saturday	19.00	26.00	9.50	3.50	3.00	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00
	Reduced Service Totals		115.00	3,086.00	29,317.00	10,801.00	9,258.00	0.00	9,258.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Annual Total		360.00	9,191.00	87,314.50	32,168.50	27,573.00	0.00	27,573.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Percentage				6.6129%	36.8421%	31.5789%	0.0000%	31.5789%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%

REVENUE MILEAGE - ALLOCATION TO MUNICIPALITIES - FY 2017/18

Route	Route Description	Service	Days	Service Days	Trips	Mileage	St. College	Fergusson	College	Patton	Harris	Bellefonte	Spring	Benner	Halfmoon
VN	Toftrees Ave/Vairo		Weekday	159.00	24.00	12.90	1.90	4.40	1.90	4.70	0.00	0.00	0.00	0.00	0.00
	Martin St.		Saturday	33.00	23.00	12.90	1.90	4.40	1.90	4.70	0.00	0.00	0.00	0.00	0.00
			Sunday	35.00	12.00	12.90	1.90	4.40	1.90	4.70	0.00	0.00	0.00	0.00	0.00
	Annual Total			227.00	4,995.00	64,435.50	9,490.50	21,978.00	9,490.50	23,476.50	0.00	0.00	0.00	0.00	0.00
	Percentage					4.8801%	14.7287%	34.1085%	14.7287%	36.4341%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%
	Vairo Blvd.		Weekday	159.00	80.00	7.10	2.30	3.00	0.00	1.80	0.00	0.00	0.00	0.00	0.00
VE	Annual Total			159.00	12,720.00	90,312.00	29,256.00	38,160.00	0.00	22,896.00	0.00	0.00	0.00	0.00	0.00
	Percentage					6.8399%	32.3944%	42.2535%	0.0000%	25.3521%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%
	Valley Vista	Full	Weekday	159.00	26.00	13.70	2.90	5.40	0.00	5.40	0.00	0.00	0.00	0.00	0.00
			Short W	159.00	0.00	6.20	1.10	2.70	0.00	2.40	0.00	0.00	0.00	0.00	0.00
			Saturday	33.00	12.50	13.70	2.90	5.40	0.00	5.40	0.00	0.00	0.00	0.00	0.00
	Full Service Totals			351.00	4,546.50	62,287.05	13,184.85	24,551.10	0.00	24,551.10	0.00	0.00	0.00	0.00	0.00
		Reduced	Weekday	96.00	26.00	13.70	2.90	5.40	0.00	5.40	0.00	0.00	0.00	0.00	0.00
			Short W	96.00	0.00	6.20	1.10	2.70	0.00	2.40	0.00	0.00	0.00	0.00	0.00
			Saturday	19.00	12.50	13.70	2.90	5.40	0.00	5.40	0.00	0.00	0.00	0.00	0.00
	Reduced Service Totals			211.00	2,733.50	37,448.95	7,927.15	14,760.90	0.00	14,760.90	0.00	0.00	0.00	0.00	0.00
WE	Annual Total			562.00	2,759.50	99,736.00	21,112.00	39,312.00	0.00	39,312.00	0.00	0.00	0.00	0.00	0.00
	Percentage					7.5537%	21.1679%	39.4161%	0.0000%	39.4161%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%
	Havenshire Blvd.		Weekday	159.00	30.00	5.20	1.90	3.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WB	Annual Total			159.00	4,770.00	24,804.00	9,063.00	15,741.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Percentage					1.8786%	36.5385%	63.4615%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%
	Bellefonte	Full	Weekday	255.00	9.00	29.7	3.90	0.00	8.20	0.00	0.00	6.80	3.00	7.80	0.00
			Saturday	52.00	3.50	19.4	0.00	0.00	1.80	0.00	0.00	6.80	3.00	7.80	0.00
	Annual Total			307.00	2,477.00	71,692.30	8,950.50	0.00	19,146.60	0.00	0.00	16,843.60	7,431.00	19,320.60	0.00
	Percentage					5.4297%	12.4846%	0.0000%	26.7066%	0.0000%	0.0000%	23.4943%	10.3651%	26.9493%	0.0000%
	Pleasant Gap	Full	Weekday	255.00	7.50	36.10	3.90	0.00	9.20	0.00	0.00	3.20	16.60	3.20	0.00
			Saturday	52.00	3.00	26.60	0.00	0.00	3.60	0.00	0.00	3.20	16.60	3.20	0.00
XG	Annual Total			307.00	2,068.50	73,190.85	7,458.75	0.00	18,156.60	0.00	0.00	6,619.20	34,337.10	6,619.20	0.00
	Percentage					5.5432%	10.1908%	0.0000%	24.8072%	0.0000%	0.0000%	9.0438%	46.9145%	9.0438%	0.0000%
	Total Trips/Mileage				113,263.00	1,320,366.75	462,646.25	282,989.20	199,080.80	254,428.65	18,805.65	23,462.80	41,768.10	25,939.80	11,245.50
	Percentages					100.00%	35.04%	21.43%	15.08%	19.27%	1.42%	1.78%	3.16%	1.96%	0.85%
	Member Percentages					100.00%	37.99%	23.23%	16.35%	20.89%	1.54%				

CATA Bus Stops

Stop #	Stop	Municipality	Stop #	Stop	Municipality	Stop #	Stop	Municipality
195	PneGrv_Dpwnd_IB (195)	Ferguson Twp	267	CrcklewdAAHouse (267)	Patton Twp	340	Pike_Dale_OB (340)	College Twp
196	PneGrv_Dpwnd_OB (196)	Ferguson Twp	268	CricklewoodApts (268)	Patton Twp	341	Pike_Dale_IB (341)	College Twp
197	W PneGrv_Sports (197)	Ferguson Twp	269	op 910 Crcklewd (269)	Patton Twp	342	Pike_Mary_IB (342)	College Twp
198	PneGrv_Mayes (198)	Ferguson Twp	270	910 Cricklewood (270)	Patton Twp	343	Pike_Mary_OB (343)	College Twp
199	PineGrve_Nixon (199)	Ferguson Twp	271	Prsdnts_Vrsty_I (271)	Patton Twp	344	Elmwood_Elm (344)	College Twp
200	PineGrve_PostOf (200)	Ferguson Twp	272	Prsdnts_Vrsty_O (272)	Patton Twp	345	700 Elmwood St (345)	College Twp
201	226 E Pine Grve (201)	Ferguson Twp	273	VillagePnnSt_IB (273)	Patton Twp	346	Elmwood_Clover (346)	College Twp
202	229 E Pine Grve (202)	Ferguson Twp	274	VillagePnnSt_OB (274)	Patton Twp	347	Elmwood_Hllview (347)	College Twp
203	PnGrv_Rsemnt_OB (203)	Ferguson Twp	275	Crklwd_Crcklwd (275)	Patton Twp	348	200 Elmwood St (348)	College Twp
204	PnGrv_Rsemnt_IB (204)	Ferguson Twp	276	Oakwd_opp_CBOak (276)	Patton Twp	349	201 Elmwood St (349)	College Twp
205	PneGrv_Meckley (205)	Ferguson Twp	277	FxHllw_Orchrd_I (277)	College Twp	350	Shiloh_atSheetz (350)	College Twp
206	E PnGrv_Banyan (206)	Ferguson Twp	278	FxHllw_Orchrd_O (278)	College Twp	351	Mt Ntnny MedCtr (351)	College Twp
207	op 3450 W Collg (207)	Ferguson Twp	279	BeaverStadiumE (279)	College Twp	352	MedScience Bldg (352)	College Twp
208	3490 W College (208)	Ferguson Twp	280	Visitor Center (280)	College Twp	353	Orchard Rd WB (353)	College Twp
209	op 3220 W Collg (209)	Ferguson Twp	281	Jordan East Pk (281)	College Twp	354	Orchard Rd EB (354)	College Twp
210	3220 W College (210)	Ferguson Twp	282	Lot 83 East (282)	College Twp	355	Stadium West Pk (355)	College Twp
211	WhiteHll_Researc (211)	Ferguson Twp	283	Forest Res Lab (283)	State College	356	VisualArtsBldg (356)	State College
212	W WhiteHll CATA (212)	Ferguson Twp	284	University Club (284)	State College	357	Pattee TC WB (357)	State College
213	3106 Stnebridge (213)	Ferguson Twp	285	Walker Building (285)	State College	358	Rec Hall (358)	State College
214	op 3098 Stnbrdg (214)	Ferguson Twp	286	Vil_PS_AtriumOB (286)	Patton Twp	359	Beta Theta Pi (359)	State College
215	Stnbrdg_Jmes_OB (215)	Ferguson Twp	287	Jordan Center (287)	College Twp	360	J Elliott Bldg (360)	State College
216	Stnbrdg_Jmes_IB (216)	Ferguson Twp	288	W Coll_N Sparks (288)	State College	361	Schlow Lib_CATA (361)	State College
217	1632 Bristol Av (217)	Ferguson Twp	289	W Bvr_S Sparks (289)	State College	362	S Pugh_E Collg (362)	State College
218	1631 Bristol Av (218)	Ferguson Twp	290	W Collg_N Butz (290)	Ferguson Twp	363	op 240 S Pugh (363)	State College
219	BlCrS_ShIrsBd_I (219)	Ferguson Twp	291	W Coll_Buckhout (291)	Ferguson Twp	364	240 S Pugh St (364)	State College
220	BlCrS_ShIrsBd_O (220)	Ferguson Twp	292	WColl_CorSt (292)	Ferguson Twp	365	S Pugh_E Ntnny (365)	State College
221	BlCrse_Wells_IB (221)	Ferguson Twp	293	W College_Hoy (293)	Ferguson Twp	366	S Pugh_E Frmnt (366)	State College
222	BlCrse_Wells_OB (222)	Ferguson Twp	294	1445 W College (294)	Ferguson Twp	367	Pugh_Hmltn_IB (367)	State College
223	Baybrry_Grce_IB (223)	State College	295	1400 W College (295)	Ferguson Twp	368	Pugh_Hmltn_OB (368)	State College
224	Baybrry_Grce_OB (224)	State College	296	op 1506 W Collg (296)	Ferguson Twp	369	S Pugh_Waring (369)	State College
225	Baybrry_Sxtn_IB (225)	State College	297	1506 W College (297)	Ferguson Twp	370	909 S Pugh St (370)	State College
226	Baybrry_Sxtn_OB (226)	State College	298	W CollegeBlaise (298)	Ferguson Twp	371	1015 S Pugh St (371)	State College
227	Baybrry_Brly_OB (227)	State College	299	W Collg_Airport (299)	Ferguson Twp	372	1006 S Pugh St (372)	State College
228	Baybrry_Brly_IB (228)	State College	300	1795 W College (300)	Ferguson Twp	373	Estrly_OldBlsg (373)	State College
229	854 Bayberry Dr (229)	State College	301	op 1795 W Collg (301)	Ferguson Twp	374	S_Ath_S_Allen (374)	State College
230	853 Bayberry Dr (230)	State College	302	2110 W College (302)	Ferguson Twp	375	1218 S Allen St (375)	State College
231	816 Bayberry Dr (231)	State College	303	2111 W College (303)	Ferguson Twp	376	S Pugh_E Ellen (376)	State College
232	811 Bayberry Dr (232)	State College	304	W Coll_Holly_IB (304)	Ferguson Twp	377	1248 S Atherton (377)	State College
233	817 Saxton Dr (233)	State College	305	W Coll_ChIsea_I (305)	Ferguson Twp	378	S Pugh_Bradley (378)	State College
234	opp 817 Saxton (234)	State College	306	W Coll_ChIsea_O (306)	Ferguson Twp	379	1306 S Atherton (379)	State College
235	757 Westerly (235)	State College	307	W Coll_BrSt_IB (307)	Ferguson Twp	380	S Athertn_Norma (380)	State College
236	768 Westerly (236)	State College	308	W Coll_BrSt_OB (308)	Ferguson Twp	381	S Ath_Whitehall (381)	State College
237	Sprx_Wstrly_OB (237)	State College	309	Vil_PS_AtriumIB (309)	Patton Twp	382	S Ath_Science (382)	State College
238	Sprx_Wstrly_IB (238)	State College	310	Enter_at_Bristo (310)	Ferguson Twp	383	ScienSt_Ramada (383)	State College
239	Sprx_Prspct_OB (239)	State College	311	Mall_at_Macys (311)	College Twp	384	EMarylynFoxVII (384)	State College
240	Sprx_Prspct_IB (240)	State College	312	op 3035 EntrprS (312)	Ferguson Twp	385	Hills Plaza_OB (385)	College Twp
241	Sprx_Nittany_IB (241)	State College	313	3075_EnterprDr (313)	Ferguson Twp	386	Hills Plaza_IB (386)	College Twp
242	Sprx_Nittany_OB (242)	State College	314	Enterprise_Cato (314)	Ferguson Twp	387	301 RllngRidge (387)	College Twp
243	218 S Sparks St (243)	State College	315	Cato_Enterprise (315)	Ferguson Twp	388	Hills South (388)	College Twp
244	219 S Sparks St (244)	State College	316	Cato_Research (316)	Ferguson Twp	389	op 383 RingRdg (389)	College Twp
245	S Sparks_Calder (245)	State College	318	CATA Office (318)	Ferguson Twp	390	op 501 RingRdg (390)	College Twp
246	W Beavr_S Brnr (246)	State College	319	ToftAve_HIside (319)	Patton Twp	391	Wndmere_Wllngtn (391)	College Twp
247	W Coll_N Brnr (247)	State College	320	Sears Auto (320)	College Twp	392	Radnor_Regent (392)	College Twp
248	Browes_Cldr (248)	State College	321	200 Shiloh Rd (321)	College Twp	393	Geisinger SP (393)	College Twp
249	ColBlvdMichaels (249)	Patton Twp	322	UEC12_Theatre (322)	College Twp	394	S Ath_W Bvr_OB (394)	State College
250	Target (250)	Patton Twp	323	Drblbis_Shiloh (323)	College Twp	395	S Ath_W Bvr_IB (395)	State College
251	The_Grove (251)	Patton Twp	324	DrblbisSt_Summit (324)	College Twp	396	S Ath_W Frmnt_OB (396)	State College
252	op 249 Colnade (252)	Patton Twp	325	op Indpndnce Pl (325)	College Twp	397	S Ath_W Frmnt_I (397)	State College
253	op 240 Toftrees (253)	Patton Twp	326	ToftAve_Wldrg (326)	Patton Twp	398	Pizza Hut (398)	State College
254	240 Toftrees Av (254)	Patton Twp	327	Woskob Ind Park (327)	College Twp	399	805 S Atherton (399)	State College
255	301 Toftrees Av (255)	Patton Twp	328	2601 E College (328)	College Twp	401	S Athrtn_Center (401)	State College
256	op 301 Toftrees (256)	Patton Twp	329	Waup_at_OBryan (329)	State College	402	Wpelani_S Allen (402)	State College
257	349 Toftrees Av (257)	Patton Twp	330	E Collg_Struble (330)	College Twp	403	Waup_Retreat (403)	State College
258	350 Toftrees Av (258)	Patton Twp	331	Nittany Commons (331)	College Twp	406	Executive House (406)	State College
259	Sams_Club (259)	College Twp	332	op Ntnny Comms (332)	College Twp	407	Lions Gate Apts (407)	State College
260	Crcklwd_N Brkwy (260)	Patton Twp	333	E Collg_Limerck (333)	College Twp	408	445 Waupelani (408)	State College
261	Crcklwd_S Brkwy (261)	Patton Twp	334	Pike_Limerck_IB (334)	College Twp	409	450 Waupelani (409)	State College
262	Crcklwd_Wlts_OB (262)	Patton Twp	335	Pike_Limerck_OB (335)	College Twp	410	Wplani_Sthgte_I (410)	State College
263	Crcklwd_Wlts_IB (263)	Patton Twp	336	Pike_Hickory_IB (336)	College Twp	411	Wplani_Sthgte_O (411)	State College
264	541 Cricklewood (264)	Patton Twp	337	Pike_Hickory_OB (337)	College Twp	412	712 Southgate (412)	State College
265	711 Cricklewood (265)	Patton Twp	338	542 Pike St (338)	College Twp	413	Sthgate_Hghlndn (413)	State College
266	op 711 Crcklewd (266)	Patton Twp	339	537 Pike St (339)	College Twp	414	Sthgate_Ashwckn (414)	State College

CATA Bus Stops

Stop #	Stop	Municipality	Stop #	Stop	Municipality	Stop #	Stop	Municipality
415	Sthgate_BluCrse (415)	State College	488	Park_Cornwll_OB (488)	Patton Twp	563	Meridian (563)	State College
416	Strtrfd_BluCrse (416)	State College	489	Park_Sierra (489)	Patton Twp	564	Calder Commons (564)	State College
417	803 Stratford (417)	State College	490	Park_Shannon (490)	Patton Twp	565	BeaverHill Apts (565)	State College
418	Strtrfd_Wpelani (418)	State College	491	Park_PrkFrst_IB (491)	Patton Twp	566	Penn Stater (566)	College Twp
419	1120_Hfm_Vly_Rd (419)	Halfmoon Twp	492	Park_PrkFrst_OB (492)	Patton Twp	567	Lubert Building (567)	College Twp
420	N Ath_Arbor Wy (420)	State College	493	PrkFrst_Nbrk_OB (493)	Patton Twp	568	3181_Carnegi_Dr (568)	Patton Twp
421	215 Blue Course (421)	Ferguson Twp	494	PrkFrst_Nbrk_IB (494)	Patton Twp	569	Medlar Field (569)	College Twp
422	op 215 BlueCrse (422)	Ferguson Twp	495	PrkFrst_N At_OB (495)	Patton Twp	570	Red A Parking (570)	State College
423	Nrthland Ctr_OB (423)	Ferguson Twp	496	PrkFrst_N At_IB (496)	Patton Twp	571	EarthEngSci (571)	State College
424	Nrthland Ctr_IB (424)	Ferguson Twp	497	Trader_Joes (497)	Patton Twp	572	Dunham Hall (572)	State College
425	BlueCourseTeaLn (425)	Ferguson Twp	498	op 1869 N Ath (498)	Patton Twp	573	Governors Gate (573)	Bellefonte
426	BlueCouseCom (426)	Ferguson Twp	499	N Ath ChickFilA (499)	Patton Twp	574	op 291 GvrnrsPk (574)	Bellefonte
427	The_Heights_IB (427)	Ferguson Twp	500	N Ath_Clnde (500)	Patton Twp	575	291 GvrnrsPk (575)	Bellefonte
428	The_Heights_OB (428)	Ferguson Twp	501	Mid Oakwood_OB (501)	Patton Twp	576	op 1001 Airport (576)	Bellefonte
429	Hvshr_Norwck_IB (429)	Ferguson Twp	502	658 Oakwood Ave (502)	Patton Twp	577	1001 Airport Rd (577)	Bellefonte
430	Hvshr_Norwck_OB (430)	Ferguson Twp	503	VairoVillage_OB (503)	Patton Twp	578	SPrkvw_Zion_IB (578)	Bellefonte
431	Hvshr_Rshclf_OB (431)	Ferguson Twp	504	VairoVlg Upper (504)	Patton Twp	579	SPrkvw_Zion_OB	Bellefonte
432	Hvshr_Rshclf_IB (432)	Ferguson Twp	505	opp_1120_Half (505)	Halfmoon Twp	580	1042 E High St (580)	Bellefonte
433	Crclvl_Frmstd_I (433)	Ferguson Twp	506	VairoVlg Lower (506)	Patton Twp	581	1043 E High St (581)	Bellefonte
434	Crclvl_Frmstd_O (434)	Ferguson Twp	507	PennwdNorth_OB (507)	Patton Twp	582	953 E High St (582)	Bellefonte
435	Oak Hill_OB (435)	Ferguson Twp	508	PennwdNorth_IB (508)	Patton Twp	583	960A E High St	Bellefonte
436	Oak Hill_IB (436)	Ferguson Twp	509	LionsCrssng_IB (509)	Ferguson Twp	584	EBshpOppPADOT (584)	Bellefonte
437	VlyVsta_Bchmn_O (437)	Ferguson Twp	510	LionsCrssng_OB (510)	Ferguson Twp	585	EBshp_Bvr_Fm_Ln (585)	Bellefonte
438	VlyVsta_Bchmn_I (438)	Ferguson Twp	511	The Pointe_IB (511)	Ferguson Twp	586	EBshp_Burger_Kg (586)	Bellefonte
439	592 Devonshire (439)	Patton Twp	512	The Pointe_OB (512)	Ferguson Twp	587	EBshp_Blft_HS (587)	Bellefonte
440	591 Devonshire (440)	Patton Twp	513	NttynyCrssng_IB (513)	Patton Twp	588	Bshp_HS_Ftblfld (588)	Bellefonte
441	596 Melissa Ln (441)	Patton Twp	514	NttynyCrssng_OB (514)	Ferguson Twp	589	Bishop_McAllstr (589)	Bellefonte
442	595 Melissa Ln (442)	Patton Twp	516	WilliamsbrgSq_OB (516)	Patton Twp	590	E High_S School (590)	Bellefonte
443	603 Melissa Ln (443)	Patton Twp	517	WilliamsbrgSq_IB (517)	Patton Twp	591	E High_N School (591)	Bellefonte
444	552 Melissa Ln (444)	Patton Twp	518	Mid Oakwood_IB (518)	Patton Twp	592	804 E High St (592)	Bellefonte
445	Melissa_Severn (445)	Patton Twp	519	Oakwd_Benjamin (519)	Patton Twp	593	805 E High St (593)	Bellefonte
446	op 528 Melissa (446)	Patton Twp	520	N Ath Walmart (520)	Patton Twp	594	220 NMcAllister (594)	Bellefonte
447	Cntrbry_Oakly_O (447)	Patton Twp	521	N Ath McDonalds (521)	Patton Twp	595	211 NMcAllister (595)	Bellefonte
448	Cntrbry_Oakly_I (448)	Patton Twp	522	1609NATH Champs (522)	Ferguson Twp	596	EBshp_SWilson (596)	Bellefonte
449	Cntrbry_Bllvu_O (449)	Patton Twp	523	1450 N Atherton (523)	Ferguson Twp	597	EBshp_Shope (597)	Bellefonte
450	Cntrbry_Bllvu_I (450)	Patton Twp	524	N Ath_Denton (524)	Ferguson Twp	598	EBshp_Badger (598)	Bellefonte
451	287 Douglas Dr (451)	Patton Twp	525	N Ath_N Hills_I (525)	Ferguson Twp	599	EBshp_BlnchrD (599)	Bellefonte
452	Douglas_Cntrbry (452)	Patton Twp	526	N Ath_N Hills_O (526)	Ferguson Twp	600	BlnchrD_CrwfD_I (600)	Bellefonte
453	DouglS_School_O (453)	Patton Twp	527	N Ath_E Clinton (527)	Ferguson Twp	601	BlnchrD_CrwfD_O (601)	Bellefonte
454	DouglS_School_I (454)	Patton Twp	528	809 Westerly (528)	State College	602	BlnchrD_Humes (602)	Bellefonte
455	2143 N Oak Ln (455)	Patton Twp	529	820 Westerly (529)	State College	603	BlnchrD_Union (603)	Spring Twp
456	2108 N Oak Ln (456)	Patton Twp	530	Wstrly_S Corl_O (530)	State College	604	op 614 BlnchrD (604)	Spring Twp
457	2198 N Oak Ln (457)	Patton Twp	531	Wstrly_S Corl_I (531)	State College	605	608 Blanchard (605)	Spring Twp
458	N Oak_Sylvan (458)	Patton Twp	532	Wstrly_CnvrLn (532)	Ferguson Twp	606	724 Blanchard (606)	Spring Twp
459	407 Amblerwood (459)	Patton Twp	534	Wstrly_oppCnvr (534)	Ferguson Twp	607	BlnchrD_SpgBrae (607)	Spring Twp
460	op 407 Amblerwood (460)	Patton Twp	536	op 1028 BluCrse (536)	Ferguson Twp	608	1309 Blanchard (608)	Spring Twp
461	Amblerwd_Schl_IB (461)	Patton Twp	537	1028 BlueCourse (537)	Ferguson Twp	609	op 1309 BlnchrD (609)	Spring Twp
462	Amblerwd_Schl_OB (462)	Patton Twp	538	W Coll_Holly_OB (538)	Ferguson Twp	610	NHrrsn_WvrHll_I (610)	Spring Twp
463	Amblerwood_Galen (463)	Patton Twp	539	2511 Saratoga (539)	Ferguson Twp	611	NHrrsn_WvrHll_O (611)	Spring Twp
464	Galen_Amblerwood (464)	Patton Twp	540	2510 Saratoga (540)	Ferguson Twp	612	668 N Harrison (612)	Spring Twp
465	700 Galen Dr (465)	Patton Twp	541	Gwndd_Chrlstn (541)	Ferguson Twp	613	NHrrsn_Limestne (613)	Spring Twp
466	741 Galen Dr (466)	Patton Twp	542	2237 Gwenedd Ln (542)	Ferguson Twp	614	N Har. at CPI (614)	Spring Twp
467	Crnge_VlyVsta_I (467)	Patton Twp	543	Gwndd_Autmndw_I (543)	Ferguson Twp	615	Supelco (615)	Spring Twp
468	Crnge_VlyVsta_O (468)	Patton Twp	544	Gwndd_Autmndw_O (544)	Ferguson Twp	616	NHrrsn_GE-MAR_O (616)	Spring Twp
469	opp Lowes Ctr (469)	Patton Twp	545	Autmnwd_Mncy_OB (545)	Ferguson Twp	617	NHrrsn_GE-MAR_I (617)	Spring Twp
470	Lowes Center (470)	Patton Twp	546	Autmnwd_Mncy_IB (546)	Ferguson Twp	618	129 Harrison Rd (618)	Spring Twp
471	N Ath_Douglas (471)	Patton Twp	547	PneHll_ScncPk_O (547)	Ferguson Twp	619	136 Harrison Rd (619)	Spring Twp
472	N Ath_Hawbaker (472)	Patton Twp	548	PneHll_ScncPk_I (548)	Ferguson Twp	620	218 Harrison Rd (620)	Spring Twp
473	N Ath_Fairwd (473)	Patton Twp	549	ScncPk_PneHll_O (549)	Ferguson Twp	621	Harrison_Jodon (621)	Spring Twp
474	Fairfield Inn (474)	Patton Twp	550	ScncPk_TorronGr (550)	Ferguson Twp	622	S Main_Sunset (622)	Spring Twp
475	Chicos (475)	Patton Twp	551	op 300 ScincPk (551)	Ferguson Twp	623	Sunset_S Main (623)	Spring Twp
476	Wegmans (476)	Patton Twp	552	300 SciencePark (552)	Ferguson Twp	624	1290 Crclville	Ferguson Twp
477	MrtN_PrkCrst_IB (477)	Ferguson Twp	553	385 SciencePark (553)	Ferguson Twp	625	1381 Crclville (625)	Ferguson Twp
478	MrtN_PrkCrst_OB (478)	Ferguson Twp	554	500 SciencePark (554)	Ferguson Twp	626	S Main_Jodon (626)	Spring Twp
479	1400 Martin St (479)	Ferguson Twp	555	Sandy_SPE_FCU (555)	Ferguson Twp	627	S Main_Whiterck (627)	Spring Twp
480	op 1400 Martin (480)	Ferguson Twp	556	op 2161 Sandy (556)	Ferguson Twp	628	SMain_Bilger_OB (628)	Spring Twp
481	1460 Martin St (481)	Ferguson Twp	557	SciencePk_Sandy (557)	Ferguson Twp	629	SMain_Bilger_IB (629)	Spring Twp
482	1471 Martin St (482)	Ferguson Twp	558	216 Carnegie_Dr (558)	Patton Twp	630	SMain_Grffth_IB (630)	Spring Twp
484	1521 Martin St (484)	Ferguson Twp	559	818 Bellaire (559)	State College	631	SMain_Grffth_OB (631)	Spring Twp
485	Park_W Aaron (485)	Ferguson Twp	560	Univ Terrace (560)	State College	632	N Main_W Collg (632)	Spring Twp
486	Park_Devonshire (486)	Ferguson Twp	561	713 Bellaire Av (561)	State College	633	105 N Main St (633)	Spring Twp
487	Park_Cornwll_IB (487)	Ferguson Twp	562	718 Bellaire Av (562)	State College	634	NMain_Mack_OB (634)	Spring Twp

Capital Local Match Shares

In FY 2013/14, CATA embarked on a five-year process of gradually increasing capital local match in order to match funds from a \$12.3 million federal State of Good Repair grant, and an additional \$28.7 million in state funds for our facility expansion project. The final of those five years was FY 2017/18.

At the February 27, 2017, COG General Forum meeting, approval was received for setting capital local match at \$100,000 per year for FY 2018/19, FY 2019/20, and FY 2020/21. Accordingly, CATA is requesting capital local match in the amount of \$100,000 for FY 2019/20.

For quite some time, CATA has supported the COG Finance Committee request that a capital reserve be maintained to avoid large annual swings in the requests for capital matching funds, which can vary widely depending on the magnitude of planned procurements. Any excess capital local match is committed to the capital reserve and used to support CATA's future capital needs. Maintaining an ending balance in the capital reserve account is important for leveling the annual request that CATA makes for capital local match.

The allocation of capital local match for capital projects is shown in the following table. Individual shares are based on the percentages of operating assistance calculated for each municipality and Penn State using the CATA formula.

CAPITAL LOCAL MATCH SHARES	2017/18 Actual	% of total	2018/19 Actual	% of total	2019/20 Proposed	% of total	Percentage Change*
State College Borough	\$ 32,980	18.85%	\$ 18,684	18.68%	\$ 18,996	19.00%	1.67%
Ferguson Township	\$ 31,217	17.84%	\$ 17,890	17.89%	\$ 17,743	17.74%	-0.82%
Patton Township	\$ 25,281	14.45%	\$ 14,504	14.50%	\$ 14,418	14.42%	-0.60%
College Township	\$ 20,082	11.48%	\$ 11,478	11.48%	\$ 11,415	11.42%	-0.55%
Harris Township	\$ 6,999	4.00%	\$ 4,036	4.04%	\$ 4,020	4.02%	-0.41%
Spring Township	\$ 6,873	3.93%	\$ 3,928	3.93%	\$ 3,929	3.93%	0.00%
Bellefonte Borough	\$ 5,750	3.29%	\$ 3,287	3.29%	\$ 3,287	3.29%	0.00%
Halfmoon Township	\$ 1,730	0.99%	\$ 989	0.99%	\$ 989	0.99%	0.00%
Benner Township	\$ 1,402	0.80%	\$ 802	0.80%	\$ 802	0.80%	-0.01%
Penn State University	\$ 42,686	24.39%	\$ 24,401	24.40%	\$ 24,401	24.40%	0.00%
Total	\$175,000	100.00%	\$100,000	100.00%	\$100,000	100.00%	0.00%
<i>* Reflects percentage change between 2019/20 and 2018/19.</i>							

This request is consistent with the approach adopted in 2002 when the COG Finance Committee first suggested a capital reserve account to even out the large year-to-year fluctuations in capital local match required for transit capital projects.

Capital Local Match Need Calculation 9/17/2018

	2016/17 Actual	2017/18 Actual	2018/19 Projected	2019/20 Projected	2020/21 Projected
Fleet Plan - Buses	\$2,894,048	\$15,275,000	\$7,450,000	\$5,400,000	\$0 **
Fleet Plan - Paratransit Vehicles	\$0	\$160,000	\$0	\$0	\$273,747
Fleet Plan - Vanpool Vehicles	\$0	\$0	\$560,000	\$0	\$0
Fleet Plan - Service Vehicles	\$0	\$30,000	\$0	\$0	\$0
Fleet Plan - Maintenance Vehicles	\$0	\$0	\$0	\$0	\$0
Facility	\$6,285,278	\$2,000,000	\$100,000	\$300,000	\$0
General Capital Projects	\$304,850	\$1,464,726	\$391,309	\$400,000	\$608,326
TOTAL CAPITAL FUNDING NEED:	\$9,484,176	\$18,929,726	\$8,501,309	\$6,100,000	\$882,073
Local Capital Match Need \$ (188,941) *	\$84,682	\$449,941	\$33,909	\$196,725	\$19,619
	\$150,000	\$175,000	\$100,000	\$100,000	\$100,000
					BALANCE: \$29,065

* This number is negative because need for the building project was paid up front by CATA and subsequently reimbursed by the municipalities, per the agreed upon five year plan.

** State and federal funding requests for 2018/19 and 2019/20 include articulated buses and modest fleet expansion. Should all requested projects be approved, additional funding for buses will not be needed in 2020/21. However, should some/all projects not be approved, the \$0 indicated will change. (Regardless, this will have little impact on capital local match need in total, but would rather merely be shifting the same need to later years.)

Harner Farm Concept Plan

November 28, 2018

Aspen Whitehall Partners, LLC and Aspen Route 26 Partners, LLC are proposing the development of the 27-acre portion of the Harner Farm south of Whitehall Road. The proposed development includes 36 single-family lots ranging in size from 0.25 acres to 0.50 acres and two commercial lots. The commercial lot at the intersection of West College Avenue and West Whitehall Road will be slightly under 5 acres and the second commercial lot will be slightly under 3.5 acres. Two public roads will be constructed to serve the project. One road will access West College Avenue and the second road will access West Whitehall Road.

Each of the single family lots will access Township roads. These roads will be built to Township standards and will include sidewalks and street trees. The two commercial lots will also access the Township roads. The five acre corner commercial lot will also have access to West Whitehall Road.

The project is located in the Corridor Overlay and will meet the Corridor Overlay ordinances in terms of access, landscaping, setbacks and building appearance.

The five acre commercial lot will be developed as a Sheetz Convenience Store with a drive thru. The store will be 6,488 S.F. and will include 8 MPDs (gas station islands).

The 3.5 acre commercial lot may be developed as a mixed use building with retail/office on the first floor and apartments on the second floor. This use is in the concept stage and may change prior to submission of a land development plan. This use will be used for the Traffic Impact Study.

A Preliminary Subdivision Plan will be submitted showing the proposed residential lots and two commercial lots. Once the Preliminary Plan is approved, a final subdivision plan for the Sheetz Lot and for a portion of the single family lots will be submitted. A land development plan for the Sheetz Store will also be submitted.

Construction is planned to begin in summer, 2019.

WEST COLLEGE AVENUE SR 0026

40' FRONT YARD SETBACK
FOR COMMERCIAL ZONING
IN CORRIDOR OVERLAY.

WEST WHITEHALL ROAD

Tax Parcel
24-004-69

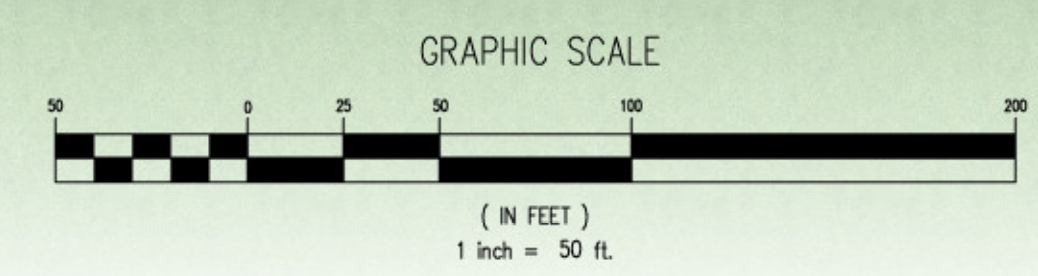
Existing Electrical Substation

Tax Parcel
24-004-67A

Tax Parcel
24-004-67B

Tax Parcel
24-004-67C

Tax Parcel
24-004-67D



**PennTerra
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Designer	MJA
Draftsman	MJA
Proj Manager	JCS
Surveyor	XXX
Perimeter Ok	XXX
Book	XXX Pg XXX
Drawn P:	Layout XXX
Acad	XXX

HARNER FARM
FERGUSON TOWNSHIP
CENTRE COUNTY
PENNSYLVANIA

CONCEPT PLAN

PROJECT NO.	17125
DATE	NOVEMBER 7, 2018
SCALE	1" = 50'
SHEET NO.	1

P:\ddp\2017\17125\Design\sheet plans\17125-SK19-11-16.dwg, 11/27/2018 2:38:29 PM, 1:1



TOWNSHIP OF FERGUSON

3147 Research Drive • State College, Pennsylvania 16801
Telephone: 814-238-4651 • Fax: 814-238-3454
www.twp.ferguson.pa.us

TO: Ferguson Township Board of Supervisors

FROM: Raymond J. Stolinas Jr., AICP, Director of Planning & Zoning
Lindsay K. Schoch, Community Planner

DATE: January 3, 2019

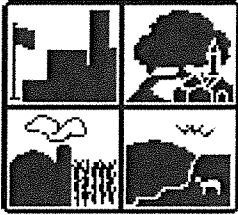
SUBJECT: Harner Farm Concept Plan

On December 4, 2018, the Ferguson Township Planning Commission, as part of their Agenda, conducted a Pre-Application Conference with the Applicant for the purpose of reviewing and discussing a proposed subdivision or land development. As a result, the Pre-Application Conference is not mandatory and not regarded as a formal application. The following are general questions or comments that the Planning Commission posed to the applicant:

1. Are the Stormwater Basins illustrated on the Concept Plan actual size? Mr. Sepp stated that the proposed plan does not show the actual size of the stormwater basins—only the potential areas for stormwater basins.
2. Mr. Keough spoke to his concern about the gas pumps at Sheetz in regard to the draft Sourcewater Protection Ordinance. He explained that the Sourcewater Protection Ordinance has not been tested with anything in the Township yet and he is concerned about unintended consequences.
3. Mr. Keough inquired about the Zoning designation of the remaining Harner tax parcels #24-004-,067D,0000-(RA), #24-004-,067B,0000-(RA), #24-004-,067C,0000-(RA), #24-004-,067A,0000-(RA) and #24-004-,069,0000-(RA) after the approved rezoning.
4. Mr. Crassweller asked about how the site will connect with UAJA facilities. Mr. Sepp explained that his firm is still researching different options. The property is in the Sewer Service Area (SSA) and there are a couple of different options for that development, including the installation of a pump station.
5. Mr. Thompson offered a question regarding potential drive-thru service. Mr. Brent Brubaker, Sheetz Engineer Manager, explained that there is a drive-thru lane for Sheetz. Mr. Brubaker went on to explain that the drive-thru lane is a convenience for a certain margin of Sheetz customers. Sheetz only does about 10% of its business through the drive-thru, compared to McDonald's, which does about 70% of its business through its drive-thru. Mr. Brubaker referred to the proposed plan on the PowerPoint and explained how the drive-thru would work in that location. In response to a question from Mr. Keough, Mr. Brubaker stated that Sheetz will be looking at getting an alcohol license for beer and wine.
6. In response to a question from Mr. Scott, Mr. Brian Dinges, Sheetz Real Estate Department, clarified that the proposed Sheetz building is 6,077 square feet, which is the largest building that Sheetz builds currently.
7. In response to a question from Mr. Wheland, Mr. Dinges stated that there are about 50-70 Sheetz stores with drive-throughs. Mr. Dinges explained that there are two windows in the drive-thru for customers to pick up food and there is also an escape lane if there were a car at the first window waiting for their items so that the second car at the second window could drive around the first car to leave. In response to a question from Ms. Strickland, Mr. Dinges stated that he believes that 45 parking spaces for the Sheetz building is sufficient because the customer's visit is a quick turnaround.

8. In response to a question from Mr. Wheland, Mr. Ressler stated that sidewalks will be required on West College Avenue and Whitehall Road, even though there are no other sidewalks on either of those roads.
9. Ms. Strickland expressed her concern about the Sheetz lighting affecting the neighboring residential housing. Mr. Sepp stated that Sheetz will have to meet the Township's lighting ordinance.
10. In response to a question from Mr. Keough, Mr. Justin Mandel, Aspen Whitehall Partners, stated that there have been preliminary discussions about the possible tenants and spaces within the proposed mixed-use building. He explained that a bank with a drive-thru is a possible tenant, as well as another food user that is not a competitor of Sheetz. The other uses would be for office space, and a possible professional medical space. He went onto explain that the second story apartments make sense for this area, but they will need to explore this option further.

Staff Recommendation: The Board of Supervisors review the Harner Farm Concept Plan in addition to Planning Commission comments made at the December 4, 2018 Pre Application Conference and give Concept Plan feedback to the applicant.



TOWNSHIP OF FERGUSON

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TO: Lindsay Schoch, Community Planner

FROM: Ron Seybert, Township Engineer

DATE: January 7, 2019

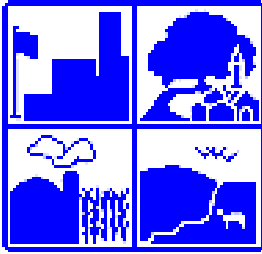
SUBJECT: Harner Farm Concept Plan
Initial Review (ES – 382)

I have completed my initial review of the Harner Farm Concept Plan consisting of one sheet as prepared by PennTerra Engineering, dated November 7, 2018 and provided as part of the TIS Scoping submission. The following are my initial comments, which do not include comments specific to the TIS scope. Those were provided to the applicant at the TIS scoping meeting for inclusion in an updated scope of work for review.

1. The concept plan should depict anticipated development of the entire parcel, not just the portion on the south side of Whitehall Road. A concept plan of the entire parcel was displayed at the TIS Scoping meeting. This will allow a comprehensive evaluation of the development for transportation planning purposes. It is acceptable to the Township to provide a masterplan TIS to only the Township for planning purposes and a separate TIS for the proposed phase of development to both PennDOT and Township for permitting purposes as has been done on other projects.
2. The minimum intersection spacing along arterial streets (Whitehall Road and West College Avenue) is 1000 feet.
3. Additional right of way along arterial streets (Whitehall Road and West College Avenue) needs to be provided to meet the 90-foot width (45 feet from center).
4. Sidewalks are required along both Whitehall Road and West College Avenue. The installation of a pedestrian cross walk with ramps, push buttons, and pedestrian signals needs to be added on the south crossing of West College Avenue.
5. Parcel 67C does not own the land as depicted on the concept plan. There is only an access easement to Whitehall Road. Does it make sense to relocate the access easement to provide access from an internal street?
6. The concept plan does not show existing accesses opposite the propose access locations. Planning of access locations should consider existing opposing access locations as well as results from the traffic study.
7. The location of the driveway into the Sheetz along Whitehall Road needs to be evaluated. The future length of stacking in the turn lane on Whitehall Road may affect the access location. Consideration of the future access into the remainder of the Harner Farm to the north of Whitehall Road should also be consider. The additional development from the north portion of the farm could influence the left turn lane length on Whitehall Road directly by adding left turning vehicles, but also indirectly by possible signal timing changes to maintain operations.

8. The proposed driveway location into the Sheetz and retail/bank building from the new proposed street is too close to West College Avenue. The minimum length of tangent required between the driveway and West College Avenue is 100 feet. This driveway needs to be relocated or eliminated.
9. The corner lot with the proposed Sheetz has access from streets of different classification (Whitehall and proposed internal street), which is not permitted by ordinance.

Copy: John Sepp, PennTerra
Doug Hill, Wooster
Jim Roman, PennDOT
Rob Watts, McCormick Taylor



TOWNSHIP OF FERGUSON

3147 Research Drive • State College, Pennsylvania 16801

Telephone: 814-238-4651 • Fax: 814-238-3454

TO: Ferguson Township Board of Supervisors

FROM: Lindsay K. Schoch, Community Planner
Raymond J. Stolinas, AICP, Planning & Zoning Director

DATE: January 15, 2019

SUBJECT: King Wealth Strategies Land Development Plan - Request for Modifications

This Plan, submitted on June 26, 2018, last dated January 2, 2019, by Penn Terra Engineering, Inc. on behalf of the owners/applicants, Laura and Thomas King, is proposing a conversion of the existing residential rental property located at 222 Blue Course Drive to their financial planning business office. Tax Parcel 24-12-12 contains .269 acres and is zoned General Commercial and lies within the Corridor Overlay. The existing building has a total of 2,800 square feet with 1,400 on both the first floor and the basement.

Please note, that prior to the submission of the plan, five (5) variances were approved by the Zoning Hearing Board, they are as follows: Reduction of the required parking spaces by 2 spaces; Reduction of the 50' front parking setback by 34'; Reduction of the 15' flexible buffer yard by 7.5'; Reduction of the 75' required minimum distance between driveway entrances by 15'; and Reduction of the 18' required parking stall length by 2'.

In addition to the above Variances, the Zoning Hearing Board granted relief from Section 27-206, Yard Requirements. The applicant also requested an Appeal for the interpretation of Section 27-206 and Chapter 26, Stormwater, wishing to forego the preparation of a Stormwater Management Plan, but the appeals were later withdrawn and the applicant resubmitted the Plan with the required Stormwater Plan.

At this time, the applicant is requesting a Modification from Chapter 22, Part 5, Section 22-501.C.2, Grading, which states: in all cases, the bottom of the excavations or fills shall be a minimum of five feet from the property line of developed lots.

Attached with this memo is the Modification Request form which includes information as to why the applicant cannot meet the requirements of the ordinance and the response letter from Ron Seybert, Ferguson Township Engineer, which requests an explanation from the applicant as to why they cannot use a retaining wall as an alternative.

Staff Recommendation: Staff recommends the BOS deny the request for modification. A retaining wall is an alternative in this situation and can be constructed without relief from the Subdivision and Land Development Ordinance.



TOWNSHIP OF FERGUSON

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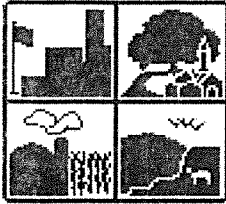
TO: Lindsay Schoch, Community Planner
FROM: Ron Seybert, Township Engineer
DATE: January 7, 2019
SUBJECT: King Wealth Strategies
Preliminary/Final Land Development Plan
Third Review (ES-394)

As requested, I have reviewed the *'King Wealth Strategies Preliminary/Final Land Development Plan'* prepared by Penn Terra Engineering and dated June 26, 2018 and last revised January 2, 2019 for conformity to the Township Subdivision and Land Development Ordinance (Chapter 22), Stormwater Management Ordinance (Chapter 26), and relevant section of the Zoning Ordinance (Chapter 27). Following are remaining comments from my review.

1. A Stormwater Management Site Plan needs to be reviewed and approved by the Township Stormwater Engineer. (Ch 22-401.a A (1)(j)).
2. The edge of excavations or fills shall be a minimum of 5 feet from the adjacent developed property. A modification request has been submitted. This request indicates that there are no alternatives to the requirement. The applicant should explain why a small retaining wall next to the parking lot is not considered an alternative. Retaining walls are used extensively throughout the site. (Ch 22-510.2.C)
3. The Do Not Enter sign detail (R5-1) incorrectly shows the size of the sign as 12"x18". The correct size of the sign is 30" x 30". Plan sheet 3 labels the signs as S3, but the detail sheet labels them as S2. (Ch 27-808)
4. The underground detention facility proposes a single access for inspection and maintenance. A minimum of two accesses should be installed for maintenance and inspection ingress/egress. Placing the access points over the header pipes instead of a distribution pipe is preferred for ease of inspection and maintenance. Access points shall be designed to incorporate steps for access since the depth is over 5 feet. (Ch 26-402.3.A.4)

If you have any questions on this review or require additional information, please let me know.

Copy: Scott Brown, NTM Engineering

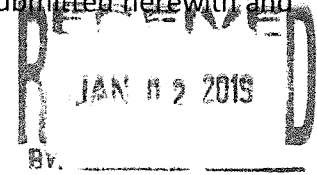


APPLICATION FOR CONSIDERATION OF A MODIFICATION
Ferguson Township, Centre County

Submittal Date: 1-2-19

A fee of \$50.00 is required at the time of submitting this application.

The undersigned hereby applies for approval of a modification/waiver, submitted herewith and described below:



Applicant Information

Laura and Tom King

Name

1348 South Atherton Street, State College, PA 16801

Street Address

City

Zip

(814) 234-3300

Phone Number

Property/Plan Information

King Wealth Strategies Preliminary/Final Land Development

Plan Name

17228

1/2/18

Plan Number

Plan Date

222 Blue Course Drive

24-12-12

Project Location

Parcel Number

same as applicant

Name of Property Owner(s)

Street Address

City

Zip

Application Type:

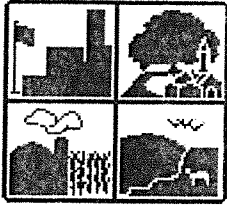
- Subdivision
- Terraced Streetscape District (TSD)
- Land Development
- Traditional Town Development (TSD) District

Modification/Waiver Request Information

Specific Section(s) of the Subdivision and Land Development Ordinance or Design Standards for which a Modification/Waiver is requested:

Chapter 22, Part 5, Section 22-510.2.C. Grading

In all cases, the bottom of excavations or fills shall be a minimum of five feet from the property line of developed lots.



APPLICATION FOR CONSIDERATION OF A MODIFICATION
Ferguson Township, Centre County

State any proposed alternative(s) to the requirement:

There are no alternatives.

Please state in full, the grounds and facts of the unreasonableness or hardship the Ferguson Township Subdivision and Land Development Ordinance has placed on the property.

The grading for the proposed King Wealth Strategies Land Development Plan meets the requirements at all adjacent side and rear property lines except immediately adjacent to the proposed parking area at the southwest side of the property. A zoning variance was granted to reduce the 15' flexible buffer to 7.5' which therefore allows the parking to be 7.5' from the property line. At the location noted, there is cut slope to drop the grades from property line down to the proposed parking area. It is not feasible to tie back the grades to meet the existing slope within 5 feet of the property line. The top of the cut slope will be between one foot and three feet from the property line. The bottom of the cut slope is at the parking area which is 7.5 feet from the property line

*If necessary, please continue with your hardship specification on another page.

The undersigned hereby represents that, to the best of their knowledge and belief, all information listed above is true, correct, and complete.

Mark T. [Signature]
Signature

1/2/19
Date

-For Office Use Only-

Date Received: _____ By: _____

Date Paid: _____ Check No.: _____ Amount: _____

Advertisement Dates: _____ Planning Commission Review Date: _____

Board of Supervisors Meeting Date: _____

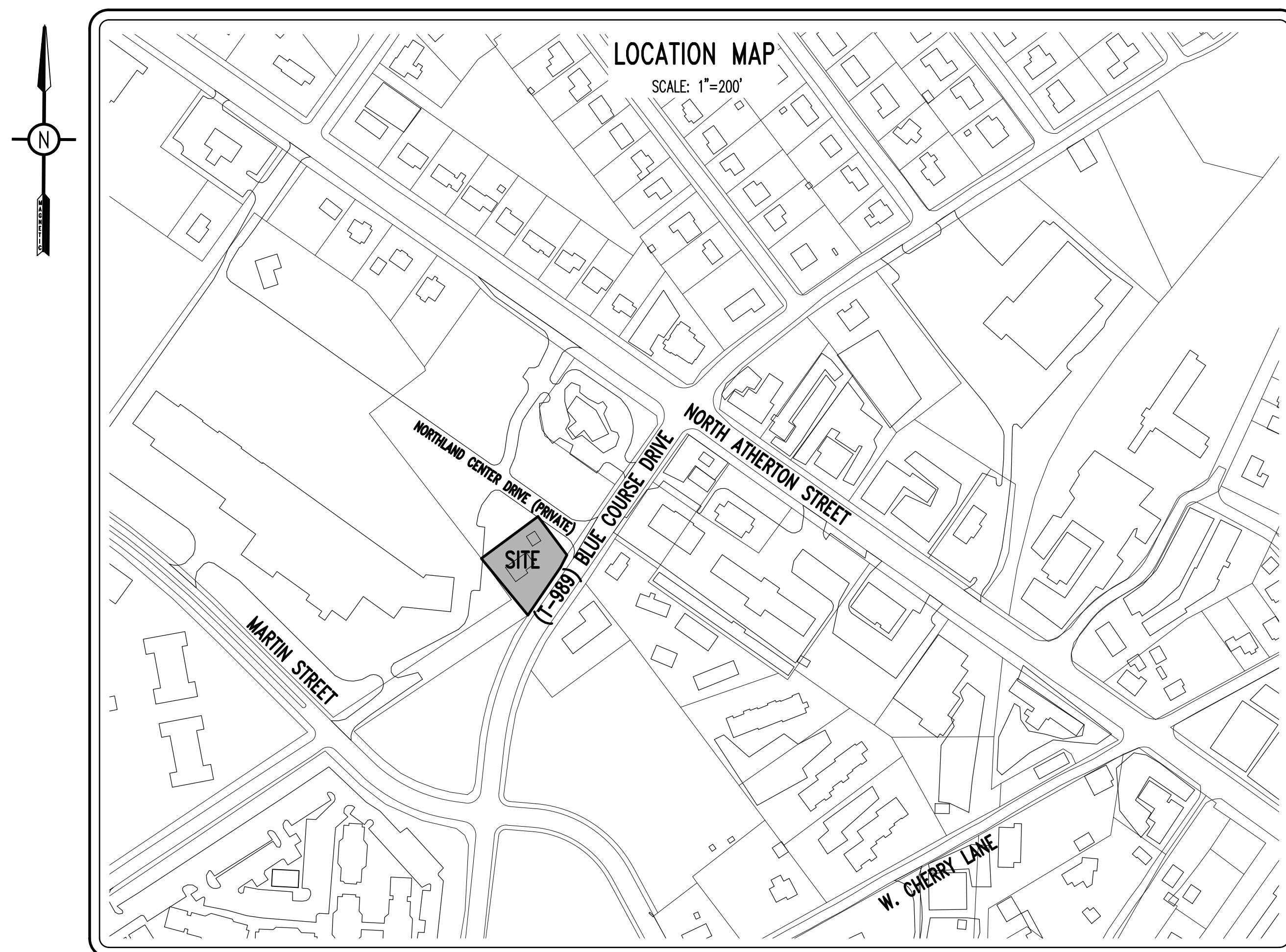
KING WEALTH STRATEGIES

PRELIMINARY/FINAL LAND DEVELOPMENT PLAN

FERGUSON TOWNSHIP * CENTRE COUNTY * PENNSYLVANIA

JUNE 26, 2018

LAST REVISED: JANUARY 2, 2019



**PennTerra
ENGINEERING, INC.**

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7	LIGHTING PLAN
8	WALL PLANS
8.A	WALL DETAILS
9	EROSION AND SEDIMENTATION CONTROL PLAN
10	EROSION AND SEDIMENTATION CONTROL PLAN DETAILS & NARRATIVE
11	DETAILS
12	STORMWATER MANAGEMENT DETAILS

*NOTE: ALL PLAN SHEETS SHALL BE RECORDED

ACT 287 UTILITY INFORMATION
(SERIAL NUMBER: 20172442073)

SANITARY SEWER
UNIVERSITY AREA JOINT AUTHORITY
1576 SPRING VALLEY ROAD
STATE COLLEGE, PA 16801
PHONE: (814) 238-9662

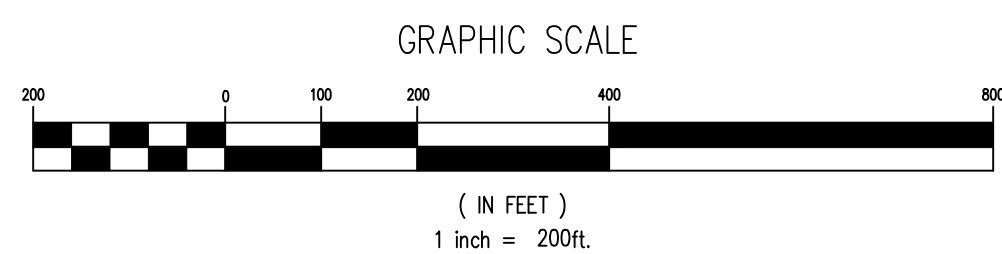
PUBLIC WATER
STATE COLLEGE BOROUGH WATER AUTHORITY
1201 WEST BRANCH ROAD
STATE COLLEGE, PA 16801
PHONE: (814) 238-6766

NATURAL GAS
COLUMBIA GAS OF PENNSYLVANIA
2550 CAROLEAN INDUSTRIAL DRIVE
STATE COLLEGE, PA 16801
PHONE: (814) 238-6775

ELECTRIC
WEST PENN POWER COMPANY
2800 EAST COLLEGE AVENUE
STATE COLLEGE, PA 16801
PHONE: (814) 237-5721

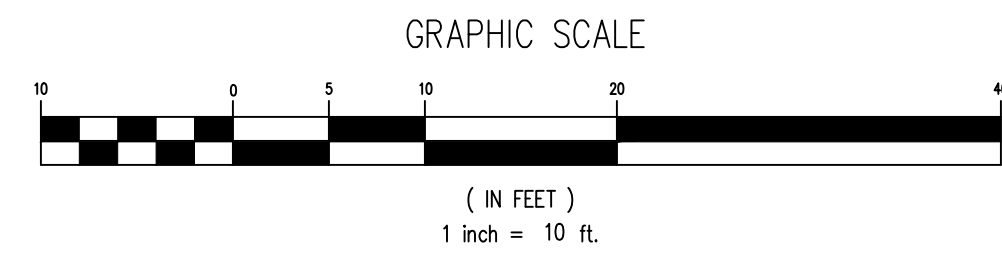
TELEPHONE
VERIZON
224 SOUTH ALLEN STREET
STATE COLLEGE, PA 16801
PHONE: (814) 231-6511

CABLE TELEVISION
COMCAST
60 DECIBEL ROAD
STATE COLLEGE, PA 16801
PHONE: (800) 992-3515



CONSTRUCTION & DEMOLITION NOTES

- FIELD SURVEY DATA PREPARED BY PENNTERRA ENGINEERING, INC. CONTRACTOR SHALL FIELD VERIFY ALL INFORMATION AND CONTACT THE SITE OWNER OR OWNER'S REPRESENTATIVE IN THE EVENT OF A DISCREPANCY.
- THE PROJECT BENCHMARK IS CONTROL POINT #4 (MAGNAIL) @ THE SOUTHERN CORNER OF PROPERTY IN SIDEWALK. ELEV. = 1129.10'.
- CONTRACTOR SHALL VERIFY THE LOCATION OF MANHOLES, INLETS, VALVES, ETC. CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AS DEEMED NECESSARY WITHIN THE LIMITS OF CONSTRUCTION TO DETERMINE THE EXACT LOCATION AND DEPTH AS REQUIRED. ALL EXISTING UTILITIES SHALL BE RETAINED UNLESS MARKED OTHERWISE, AND APPURTENANCES SHALL BE ADJUSTED TO FINAL GRADE. DAMAGE TO EXISTING CONDITIONS AND UTILITIES TO REMAIN SHALL BE REPAIRED AS REQUIRED TO THE OWNER'S SATISFACTION AT THE EXPENSE OF THE CONTRACTOR.
- ALL AREAS DISTURBED DURING CONSTRUCTION, NOT DESIGNATED TO RECEIVE PAVING OR MULCH SHALL BE FINE GRADED, TOPSOILED, & SEEDDED UNLESS OTHERWISE NOTED IN THE CONSTRUCTION DRAWINGS, SITE SPECIFICATIONS OR INSTRUCTED BY THE OWNER.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS AND WORK REQUIRED TO ADJUST EXISTING AND PROPOSED UTILITIES AND APPURTENANCES TO FINISH GRADES WITHIN THE LIMITS OF WORK.
- ALL PAVING TO BE REMOVED SHALL BE SAWCUT TO PROVIDE A SHARP CLEAN EDGE. CONCRETE TO BE REMOVED SHALL BE SAWCUT AT THE NEAREST JOINT BEYOND THE AREA TO BE REMOVED.
- CONTRACTOR SHALL CONTACT PA ONE CALL SYSTEM @ 1-800-242-1776 AT LEAST THREE (3) DAYS PRIOR TO CONSTRUCTION ACTIVITIES.
- ALL DEMOLITION WASTE & CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE PROJECT BY THE CONTRACTOR. WASTE MATERIAL MUST BE DISPOSED AT STATE APPROVED WASTE SITE IN ACCORDANCE WITH D.E.P. CLEAN FILL REGULATORY. CONTRACTOR MUST ALSO ADHERE BY ALL LOCAL, STATE, FEDERAL, OSHA AND PERMIT REQUIREMENTS/REGULATIONS WHEN OPERATING DEMOLITION EQUIPMENT.
- ALL FILL MATERIAL BROUGHT ON TO THE JOB BY THE CONTRACTOR MUST COMPLY WITH ALL APPLICABLE D.E.P. REGULATIONS REGARDING CLEAN FILL.
- CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC CONTROL MEASURES IN ACCORDANCE WITH THE PENNDOT STANDARDS, AND AS REQUIRED BY LOCAL AGENCIES WHEN WORKING IN AND/OR ALONG STREETS, ROADS, HIGHWAYS, ETC. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN APPROVAL.
- THE CONTRACTOR SHALL COMPLY AT ALL TIMES WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, PROVISIONS, AND POLICIES GOVERNING SAFETY AND HEALTH, INCLUDING THE FEDERAL CONSTRUCTION SAFETY ACT (PUBLIC LAW 91-54), FEDERAL REGISTER, CHAPTER XVII, PART 1926 OF TITLE 29 REGULATIONS, OCCUPATIONAL SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION, AND SUBSEQUENT PUBLICATIONS UPDATING THESE REGULATIONS.
- ALL PLACEMENT & COMPACTION OF FILLS AND UTILITY TRENCHING/BACKFILL SHALL BE IN ACCORDANCE WITH PROJECT SPECIFICATIONS IF AVAILABLE. OTHERWISE CONTRACTOR SHALL FOLLOW THE LATEST PENNDOT SPECIFICATIONS.



SOILS LEGEND

Soil cover on the site consists of:
 HaB - Hagerstown Silt Loam, 3-8% Slopes
 HuC - Hublersburg Silt Loam, 8-15% Slopes

EXISTING FEATURES LEGEND

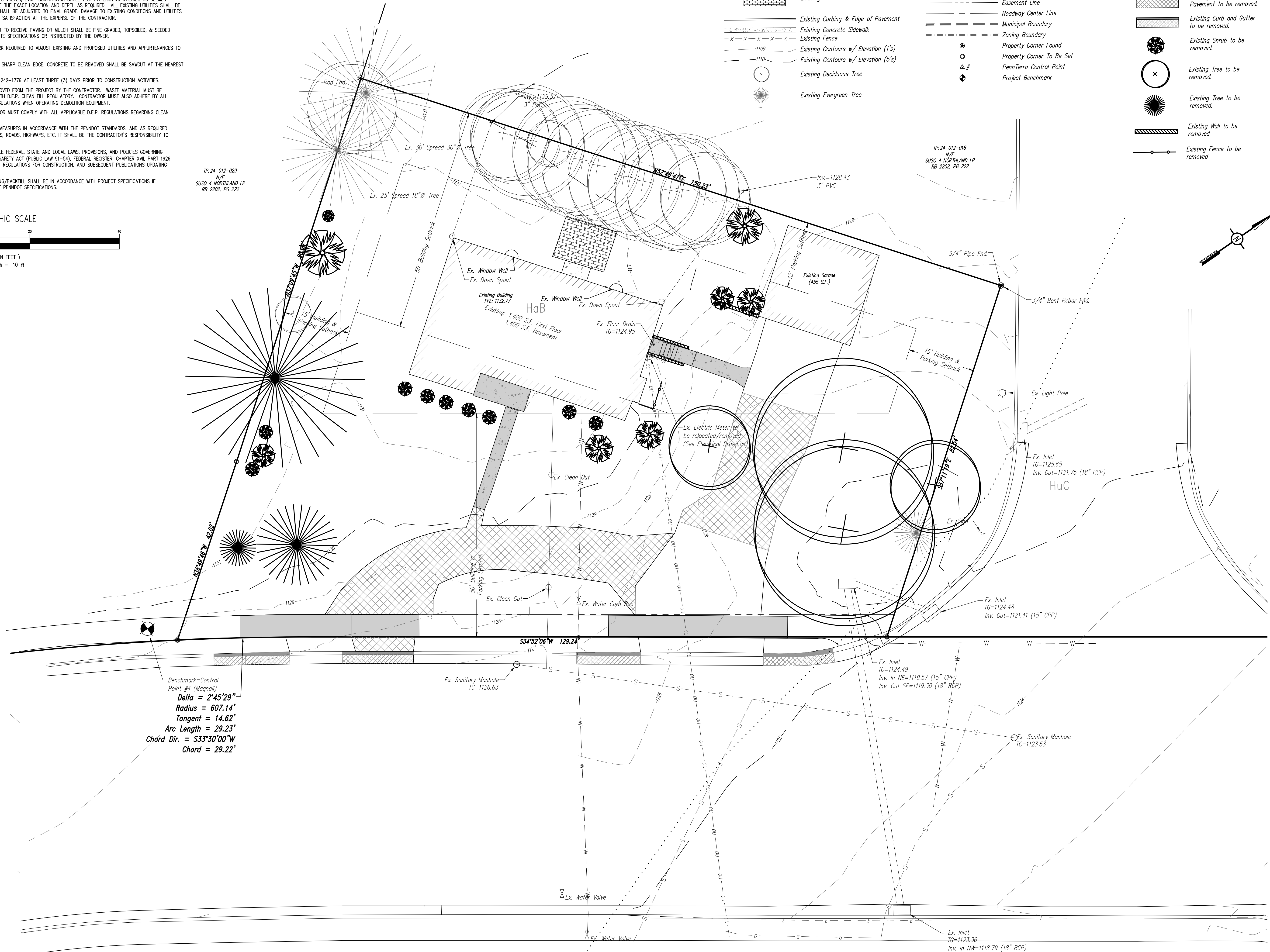
- Existing Building
- Existing Pavers
- Existing Curbing & Edge of Pavement
- Existing Concrete Sidewalk
- Existing Fence
- Existing Contours w/ Elevation (1's)
- Existing Contours w/ Elevation (5's)
- Existing Deciduous Tree
- Existing Evergreen Tree

SURVEY FEATURES LEGEND

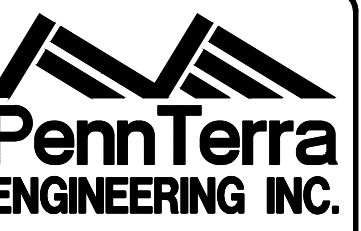
- Property Line, Lot Line or Right of Way Line
- Adjoining Property Line
- Building Setback Line
- Easement Line
- Roadway Center Line
- Municipal Boundary
- Zoning Boundary
- Property Corner Found
- Property Corner To Be Set
- PennTerra Control Point
- Project Benchmark

DEMOLITION LEGEND

- Existing Concrete Pavement, Walks and Slabs to be removed
- Existing Bituminous Pavement to be removed.
- Existing Curb and Gutter to be removed.
- Existing Shrub to be removed.
- Existing Tree to be removed.
- Existing Tree to be removed.
- Existing Wall to be removed
- Existing Fence to be removed



Benchmark=Control Point #4 (Magnail)
 Delta = 2°45'29"
 Radius = 607.14'
 Tangent = 14.62'
 Arc Length = 29.23'
 Chord Dir. = S33°30'00"W
 Chord = 29.22'

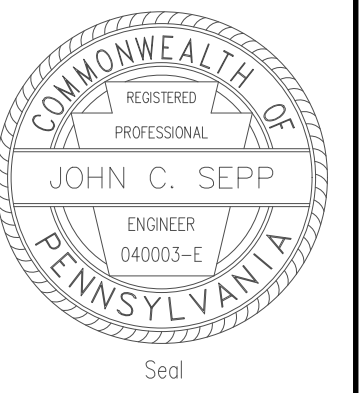


PennTerra ENGINEERING INC.
 CENTRAL PENNSYLVANIA REGION OFFICE:
 3075 ENTERPRISE DRIVE
 SUITE 100
 STATE COLLEGE, PA 16801
 PH: 814-231-8285
 Fax: 814-237-2308

LANCASTER REGION OFFICE:
 3904 B ABEL DRIVE
 COLUMBIA, PA 17512
 PH: 717-522-5031
 Fax: 717-522-5046

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Designer: MAT
 Draftsman: MJA
 Proj/Manager: MAT
 Surveyor: BRK
 Perimeter Ok.
 Book: 527, Pg: 2
 File: 2 - EX. COND. & DEMOLITION
 Layout: EX. COND. & DEMOLITION

Date	Description
1-2-19	PER TOWNSHIP COMMENTS
11-30-18	PER TOWNSHIP COMMENTS
	REVISIONS

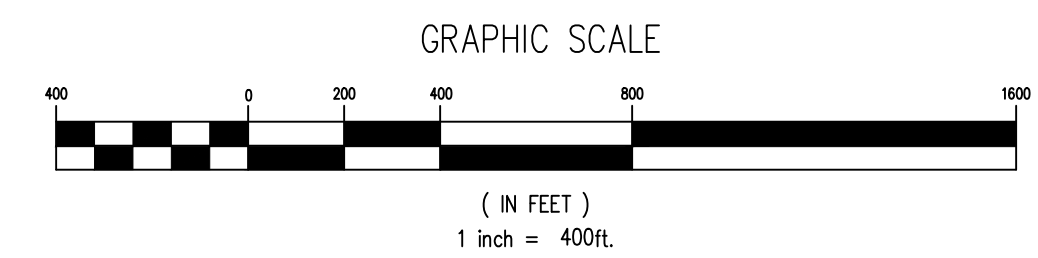
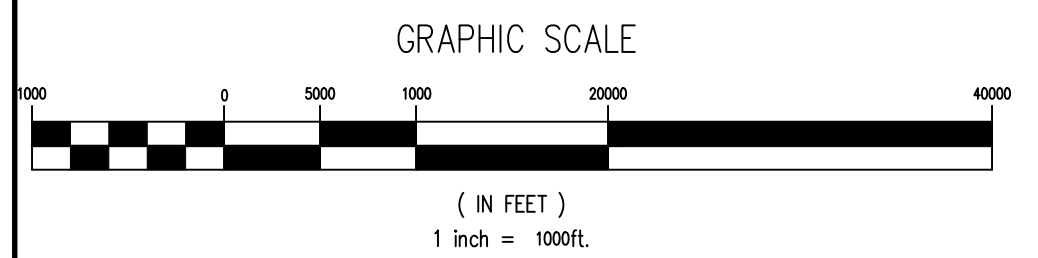
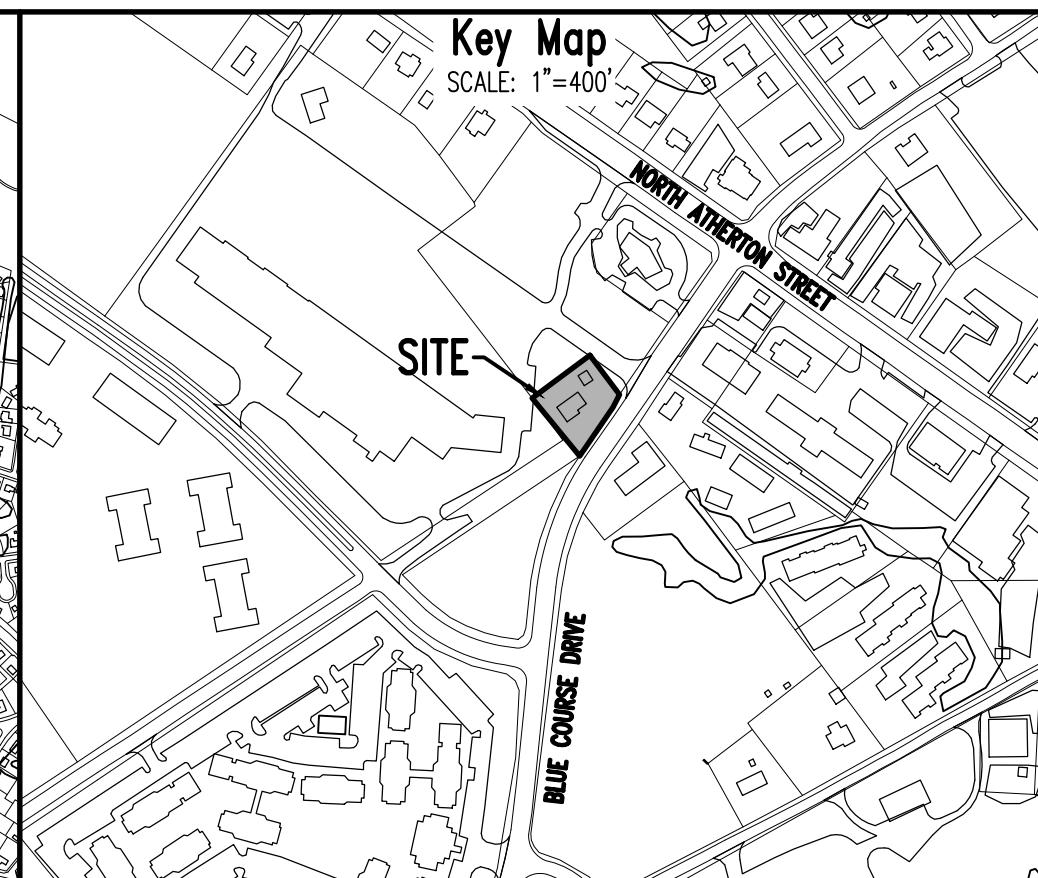
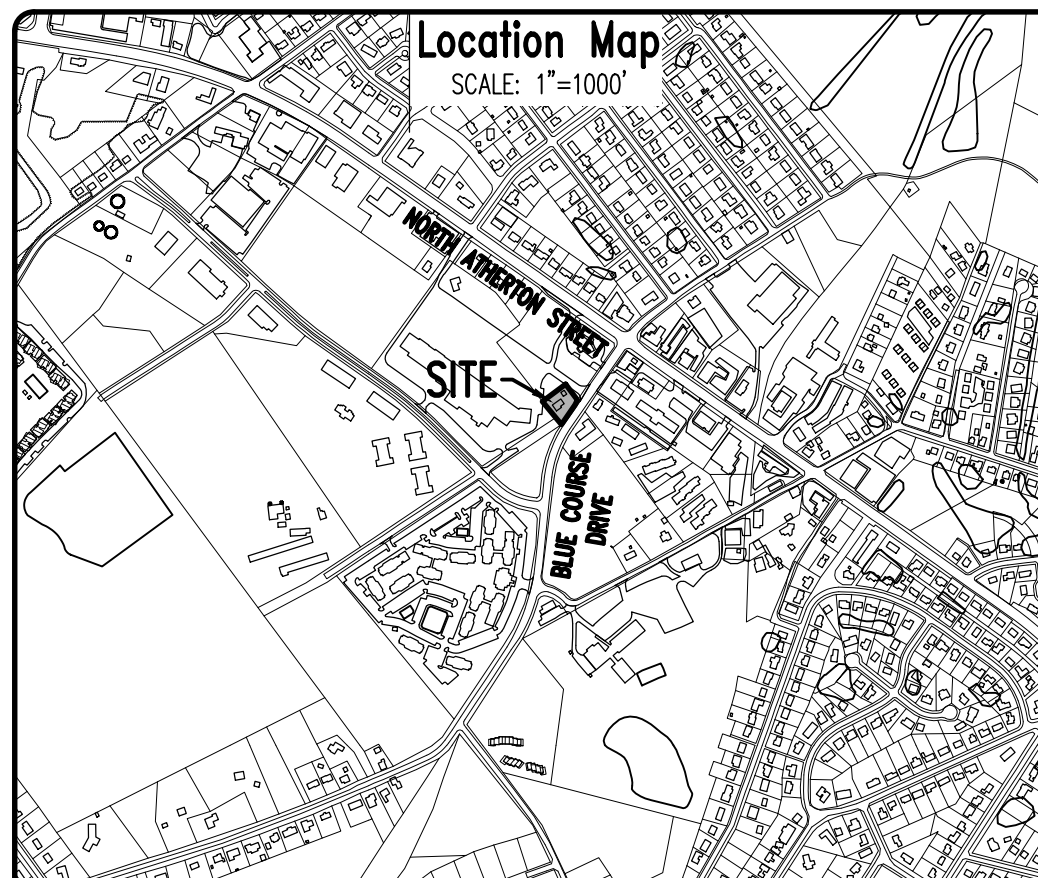
KING WEALTH STRATEGIES

FERGUSON TOWNSHIP
 CENTRE COUNTY
 PENNSYLVANIA

PRELIMINARY/FINAL LAND DEVELOPMENT PLAN

EX. COND. & DEMOLITION

PROJECT NO.	17228
DATE	JUNE 26, 2018
SCALE	1"=10'
SHEET NO.	2 of 12



Owners Certification Tax Parcel 24-12-12

Commonwealth of Pennsylvania
County of Centre

On this _____ day of _____, 20____, _____ personally appeared before me and certified that they were the owners of the properties shown on this plan and acknowledge the same to be their act and plan and designs, the same to be recorded as such, according to the law.

witness my hand and seal, this date _____

Notary Public _____ Commission Expires _____

Storm Water Facilities Acknowledgement

I/We _____ the landowner(s), my/our heirs and assigns, acknowledge the Stormwater Management System to be a permanent facility which can be altered or removed only after approval of a revised plan by the Ferguson Township Board of Supervisors. The stormwater management system is to be maintained in accordance with the approved ownership and maintenance program.

Township Planning Commission
Ferguson Township Planning Commission Approved

Chairman _____ Date _____
Secretary _____ Date _____

Township Supervisors
Ferguson Township Supervisors Approved

Chairman _____ Date _____
Secretary _____ Date _____

Municipal Storm Water Certification

I, _____, 20____, _____ have reviewed the Stormwater Management Plan in accordance with the design standards and criteria of the Ferguson Township Stormwater Management Ordinance.

Fire Chief Certification

I have reviewed and hereby certify that the location of Fire Lanes and Fire Hydrants shown on this plan are adequate.

Fire Chief _____ Date _____

Storm Water Certification

I, _____, hereby certify that the Stormwater Management Plan meets all design standards and criteria of the Ferguson Township Stormwater Management Ordinance.

Design Engineer Certification

I, _____, hereby certify that this land development meets all design requirements of the Subdivision and Land Development Ordinance, Zoning Ordinance and all other applicable Chapters of Ferguson Township Code.

Professional Land Surveyor Certification

I, Nevin L. Grove, a Professional Land Surveyor in the Commonwealth of Pennsylvania, do hereby certify that this plan correctly represents the tracts of lands as shown.

Signature _____ Date _____

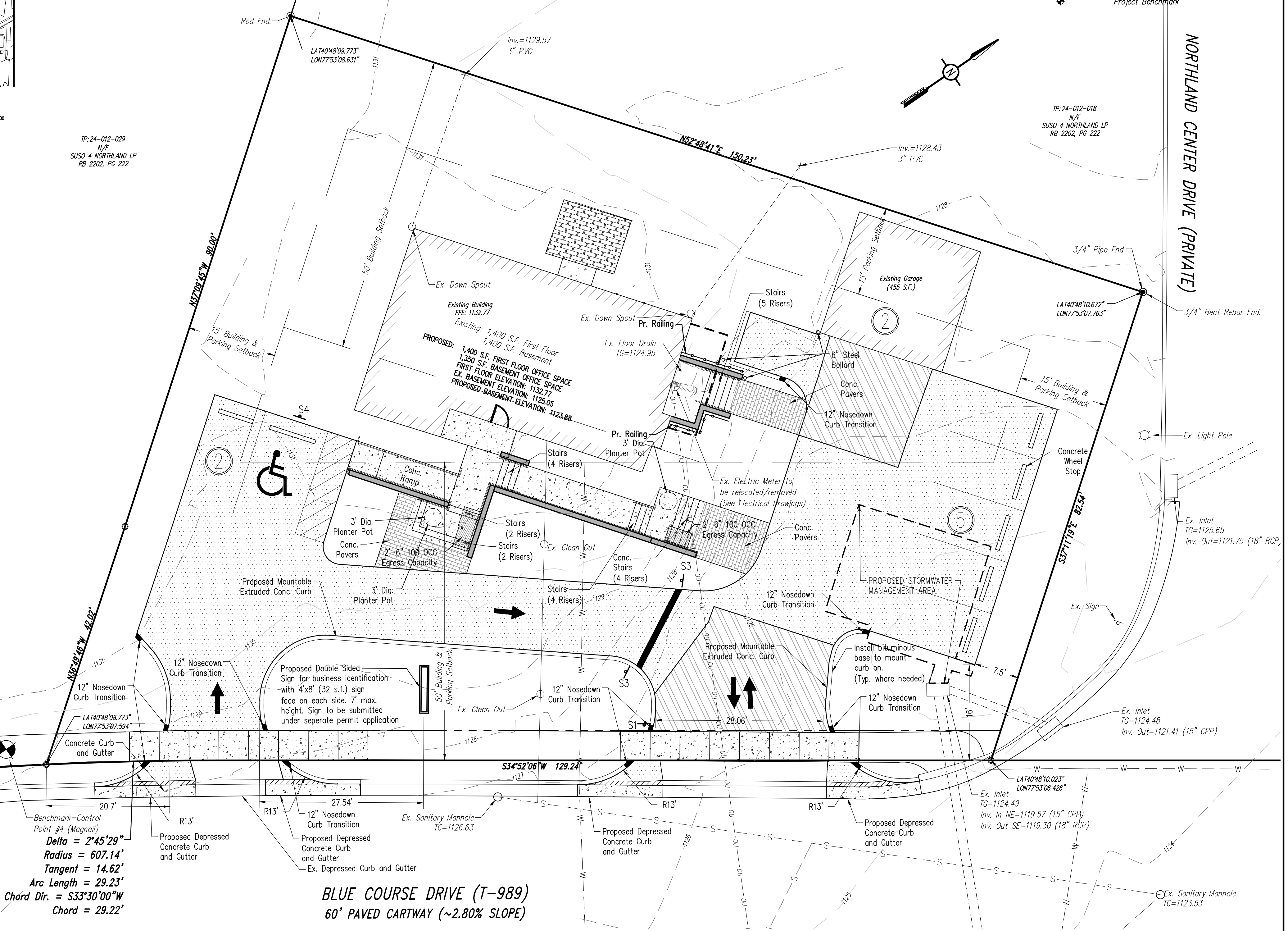
- Project Notes:**
- General Site Information:
 - a. Owner of Record: Thomas C. and Laura A. King, 108 Wildercrest Lane, Port Matillos, PA 16870, RB 2209 / Pg 982
 - b. Tax Parcel No.: 24-12-12
 - c. Zoning: C - General Commercial within the Corridor Overlay District
 - d. Site Address: 222 Blue Course Drive, State College, PA 16801
 - e. Site Use: Residential (Existing), Commercial / Professional Office (Proposed)
 - f. Site Size: 0.369 Acres / 16,070 S.F.
 - g. Building Setbacks: Front - 50', Side - 15', Rear - 50'
 - h. Parking Setback: Front - 50' (See Note 9), Side - 15' (See Note 9), Rear - 15'
 - i. Building Height: 18' (Existing/Proposed) 45' (Allowed)
 - j. Building Area: 1,400 S.F. plus 1,400 S.F. Basement
 - Impervious Areas:
 - a. Existing: 1,866.34 S.F. (11.61%) (Building), 3,293.91 (20.50%) (Parking/Driveways/Walks), 5,160.25 S.F. (32%) (Total)
 - b. Proposed: 1,866.34 S.F. (11.61%) (Building), 6,863.77 S.F. (42.71%) (Driveways/Walks), 8,730.11 S.F. (54.32%) (Total)
 - c. Max. Allowable: 12,856 S.F. (80.00%) (Total)
 - Parking Calculations:
 - a. Required: 1 space per 250 S.F. Commercial (Non-Residential) = 2800 S.F. Commercial (Non-Residential) / 250 = 11 spaces
 - b. Provided: 9 Spaces including 1 HC space (See Note 9)
 - Act 287 Utility Information (Serial No. 2017242073):
 - a. Water: State College Borough Water Authority (SCBWA), 1201 West Branch Road, State College, PA 16801; (814) 238-6766
 - b. Sewer: University Area Joint Authority (UAJA), 1576 Spring Valley Road, State College, PA 16801; (814) 238-9662
 - c. Telephone: Verizon Facilities Management Center, 224 South Allen Street, State College, PA 16801; (814) 231-6511
 - d. Electric: West Penn Power Company, 2800 East College Avenue, State College, PA 16801; (814) 237-5821
 - e. Cable Television: Comcast, 60 Decibel Road, State College, PA 16801; (814) 238-5050
 - f. Gas: Columbia Gas, 2350 Carleton Drive, State College, PA 16801; (814) 238-6775
 - Project Benchmark: The Project Benchmark is control point #4 (Magnolia) located at the southern corner of the property in sidewalk at Elev=1129.10. Contours shown are taken from field data collected by PennTerra Engineering, Inc. are based on USGS Datum.
 - This Record Plan conforms with the Plan receiving final approval by the Ferguson Township Supervisors _____ 2019. All improvements are to be installed in accordance with such Plan in a manner and time so specified herein.
 - Date of Zoning Permit Application June 26, 2018.
 - Ferguson Township Driveway Permit must be obtained prior to the issuance of a zoning permit.
 - The following variances were granted by the Ferguson Township Zoning Hearing Board on October 17, 2017:
 - A. Reduction of the required parking spaces by 2 spaces. (Section 27-809.1.B(2))
 - B. Reduction of the 50' Front Parking Setback by 34'. (Section 27-203.1.D)
 - C. Reduction of the 15' Flexible Buffer Yard by 7.5'. (Section 27-807.1.A)
 - D. Reduction of the 75' required minimum distance between driveway by 15'. (Section 27.801.1.E(2))
 - E. Reduction of the 18' required parking stall length by 2'. (Section 27-809.1.B(1))
 - The following variance was granted by the Ferguson Township Zoning Hearing Board on September 25, 2018:
 - A. To allow structures (sidewalks, steps and walls) within the front setback (Section 27-206)
 - There are no flood plains, sink holes or steep slopes on the site
 - Onsite Soils consist of HdB - Hagerstown Silt Loam, 3-BK Slopes and H&C - Hublersburg Silt Loam, 8-15% Slopes.
 - The nearest fire hydrant is located at the northeast side of Northland Center Drive and Blue Course Drive.
 - Curbside Refuse and Recycling containers shall be kept inside the garage and brought out to the curb during refuse pick up days.
 - For additional information, refer to the King Wealth Strategies Stormwater Management Site Plan last revised January 2, 2019.
 - As-Built drawings/documentation of the stormwater management facilities must be prepared in accordance with Chapter 26 §26-402.4 and submitted to Ferguson Township at the completion of construction as a prerequisite of issuance of Occupancy Permit. Post construction infiltration testing verification of the minimum 0.78 in/hr infiltration Trench Design Rate on top of the native soils prior to placement of geotextile shall also be included with the as-built submission. Likewise, similar verification of the amended soil mixture infiltration rate between 0.78 in/hr (min.) to 2.34 in/hr (max.) shall also be performed.

Recorder of Deeds
Recorded in the Office of the Recorder of Deeds at Centre County, Pennsylvania, in Plat Book _____ Page _____ on this the _____ day of _____, 20____.
By _____ Recorder

- EXISTING FEATURES LEGEND**
- Existing Building
 - Existing Pavers
 - Existing Curbing & Edge of Pavement
 - Existing Concrete Sidewalk
 - Existing Fence
 - Existing Contours w/ Elevation (1's)
 - Existing Contours w/ Elevation (5's)

- PROPOSED FEATURES LEGEND**
- PROPOSED EDGE OF PAVEMENT
 - PROPOSED CONCRETE PAVERS
 - PROPOSED CONCRETE WALK
 - PROPOSED PAVEMENT
 - PROPOSED PAVEMENT OVERLAY
 - PROPOSED HANDICAPPED PARKING
 - PROPOSED PARKING STALL COUNT

- SURVEY FEATURES LEGEND**
- Property Line, Lot Line or Right of Way Line
 - Adjoining Property Line
 - Building Setback Line
 - Easement Line
 - Roadway Center Line
 - Municipal Boundary
 - Zoning Boundary
 - I.P. Found
 - I.P. To Be Set
 - PE HUB #
 - PennTerra Control Hub
 - Project Benchmark



Stormwater BMPs Long Term Ownership, Operation and Maintenance Program

All stormwater management BMPs on the site of King Wealth Strategies not contained in a Ferguson Township Right-of-Way shall be owned and maintained by the Lot Owner their executors, heirs and assigns. The owner agrees to provide perpetual maintenance, access to and ownership of the BMPs. Ferguson Township, its agents and assigns shall have the uninterrupted right to access the property for inspection and maintenance of the stormwater BMPs. This note applies to the entire property shown on these plans and shall be in effect for perpetuity. The responsibility for long-term operation and maintenance of the BMPs is a covenant that runs with the land and binding upon and enforceable by subsequent grantees.

Ferguson Township and/or the Centre County Conservation District requires the Owners to maintain a record of all inspections, repairs, and maintenance activities associated with the proposed stormwater management and permanent erosion and sediment pollution control facilities at this project site. The Owner shall immediately notify Ferguson Township and Centre County Conservation District prior to initiating any major repair activities.

The Owner hereby acknowledges Ferguson Township's right to periodically access the project site to inspect the permanent stormwater management facilities that are part of this project. The Owners acknowledges Ferguson Township's right to access the project site with notice to repair and/or maintain the permanent stormwater management facilities in accordance with this Maintenance Program. Any maintenance and/or repair activities conducted by Ferguson Township shall be at the expense of the Owners.

The facilities that will require maintenance are inlets, storm sewer pipes, underground basin and infiltration trench. All stormwater facilities should be inspected monthly or after any rainfall producing runoff and maintained as follows:

- The proposed storm sewer pipe inlets and outlets shall be cleaned of all sediment debris, litter, and other deleterious material. All sumped inlets shall be vacuumed at least twice a year in the spring and fall.
- The underground basin shall be inspected via the cleanouts and vacuumed at least twice a year in the spring and fall. A qualified inspection of confined space in presence of Township Inspector shall be provided when requested by the Township.
- The infiltration trench shall be inspected through the cleanout to ensure dewatering.
- Documentation of inspections must be maintained by the owner and submitted to Township upon request. Maintenance inspections may be performed by the Township to ensure proper functioning of all stormwater facilities.

RECORD PLAN

PROJECT NO. 17228
DATE: JUNE 26, 2018
SCALE: 1"=10'
SHEET NO. 3 of 12

GRAPHIC SCALE
1 inch = 10 feet

PennTerra ENGINEERING INC.
CENTRAL PENNSYLVANIA REGION OFFICE:
3075 ENTERPRISE DRIVE SUITE 100
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PH: 814-231-8285
Fax: 814-237-2308

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3904 B ABEL DRIVE
COLUMBIA, PA 17512
PH: 717-522-5031
Fax: 717-522-5046

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
JOHN C. SEPP
ENGINEER 04003-E
Seal

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL LAND SURVEYOR
NEVIN L. GROVE
LAND SURVEYOR No. S0081171
Seal

Designer	MAT
Draftsman	MJA
Proj Manager	MAT
Surveyor	BRK
Perimeter Clk.	
Book	527 Pg 2
File	3 - RECORD PLAN
Layout	RECORD PLAN

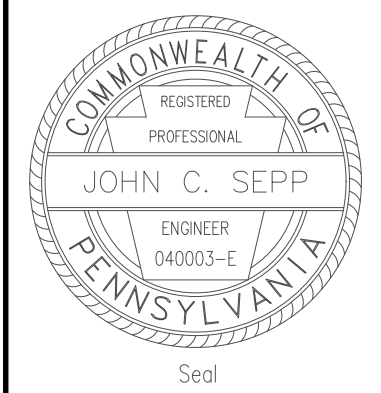
Date	Description
	REVISIONS

KING WEALTH STRATEGIES
FERGUSON TOWNSHIP CENTRE COUNTY PENNSYLVANIA

PRELIMINARY/FINAL LAND DEVELOPMENT PLAN

RECORD PLAN

PROJECT NO. 17228
DATE: JUNE 26, 2018
SCALE: 1"=10'
SHEET NO. 3 of 12



Designer	MAT
Draftsman	MJA
Proj Manager	MAT
Surveyor	BRK
Perimeter Ok	
Book	527 Pg 2
File	4 - GEOMETRY PLAN
Layout	GEOMETRY PLAN

Date	Description
1-2-19	PER TOWNSHIP COMMENTS
11-30-18	PER TOWNSHIP COMMENTS

KING WEALTH STRATEGIES
 FERGUSON TOWNSHIP
 CENTRE COUNTY
 PENNSYLVANIA

PRELIMINARY/FINAL
 LAND DEVELOPMENT
 PLAN

GEOMETRY PLAN

PROJECT NO.	17228
DATE	JUNE 26, 2018
SCALE	1"=10'
SHEET NO.	4 of 12

EXISTING FEATURES LEGEND

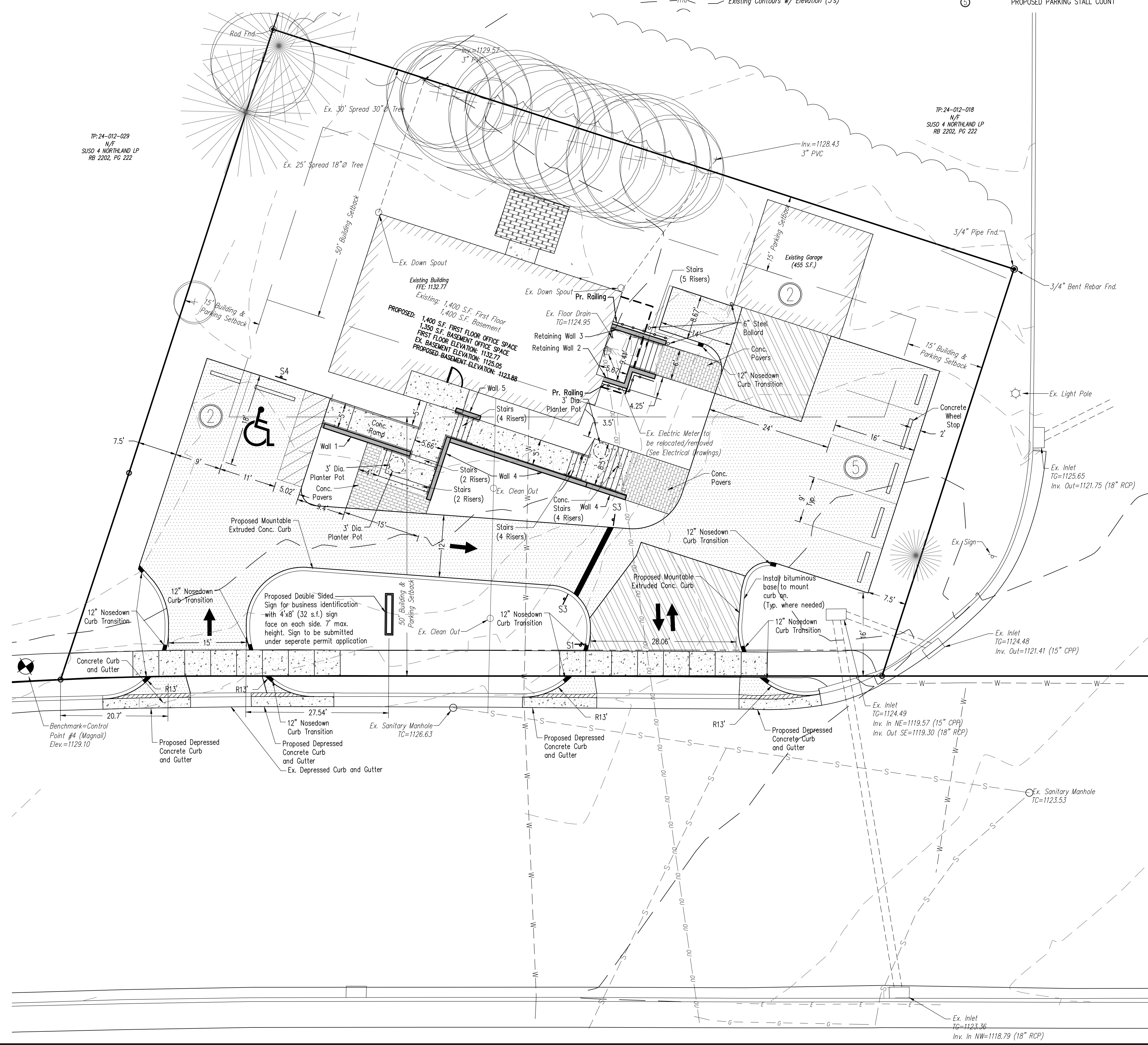
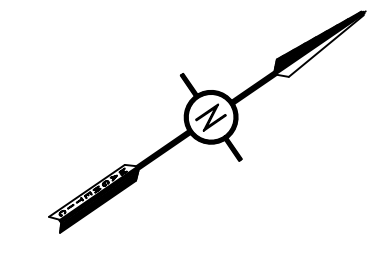
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- Existing Concrete Sidewalk
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- Existing Contours w/ Elevation (1's)
- Existing Contours w/ Elevation (5's)

PROPOSED FEATURES LEGEND

- PROPOSED EDGE OF PAVEMENT
- PROPOSED CONCRETE PAVERS
- PROPOSED CONCRETE WALK
- PROPOSED PAVEMENT
- PROPOSED PAVEMENT OVERLAY
- PROPOSED HANDICAPPED PARKING
- PROPOSED PARKING STALL COUNT

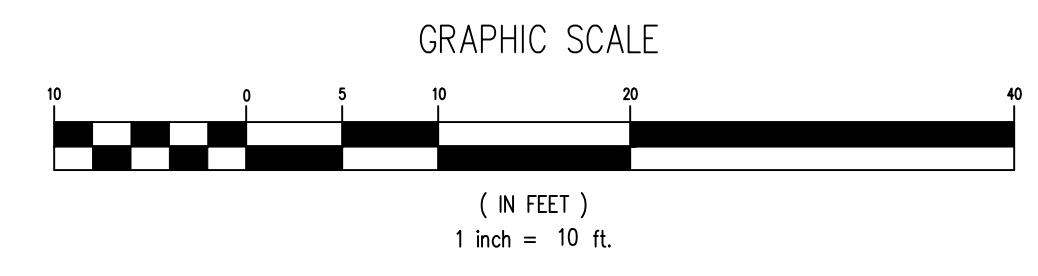
SURVEY FEATURES LEGEND

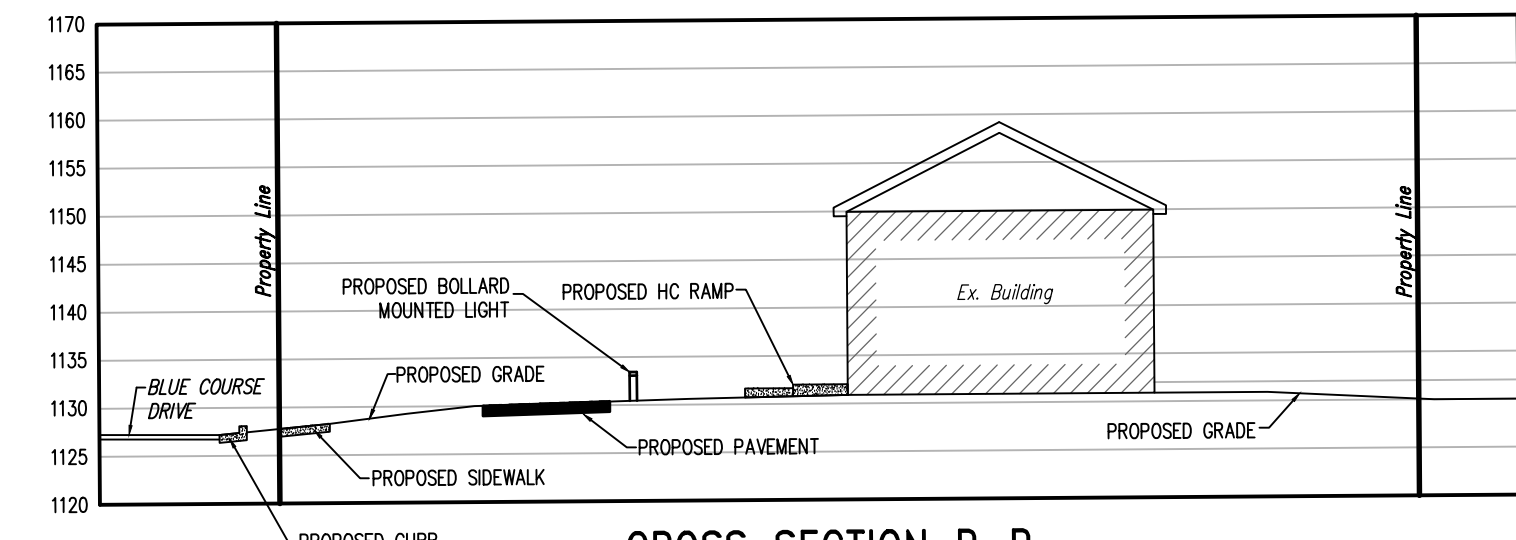
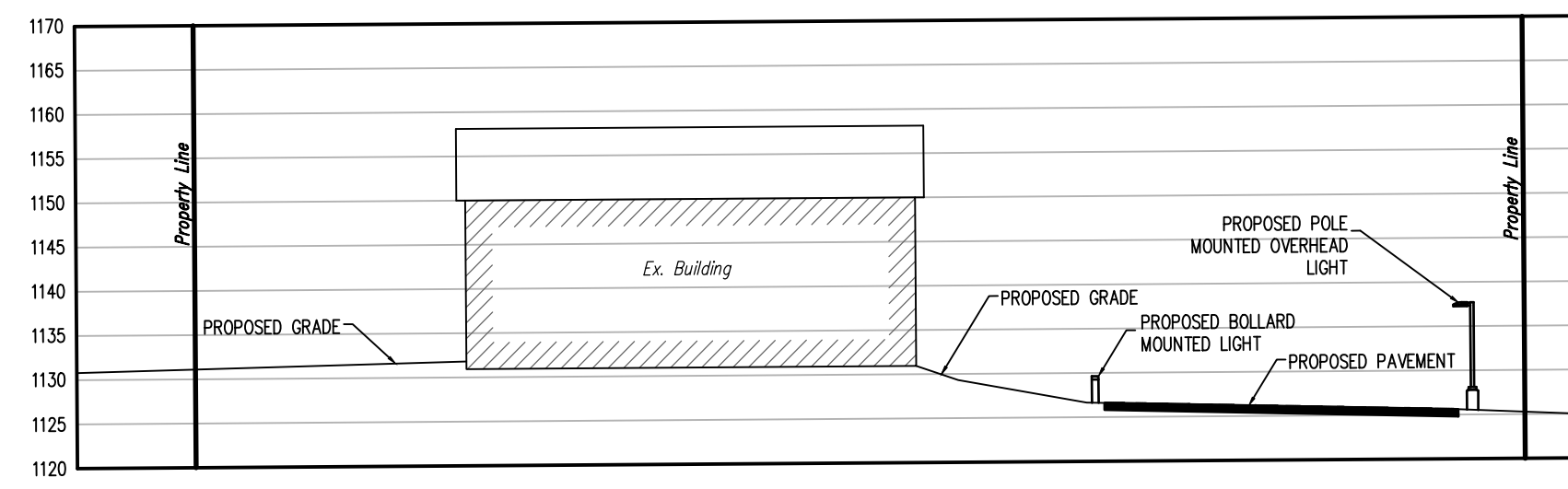
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- PE HUB #
- PennTerra Control Hub
- Project Benchmark



TP-24-012-029
 N/F
 SUSO 4 NORTHLAND LP
 RB 2202, PG 222

TP-24-012-018
 N/F
 SUSO 4 NORTHLAND LP
 RB 2202, PG 222

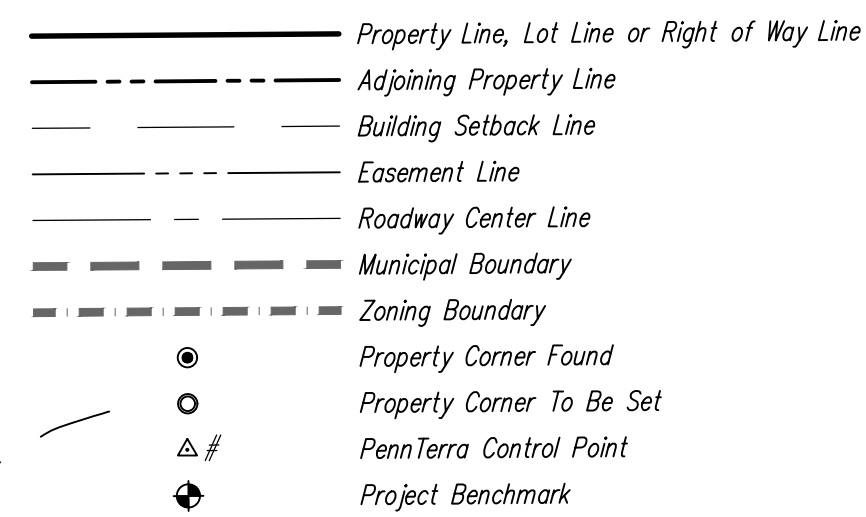




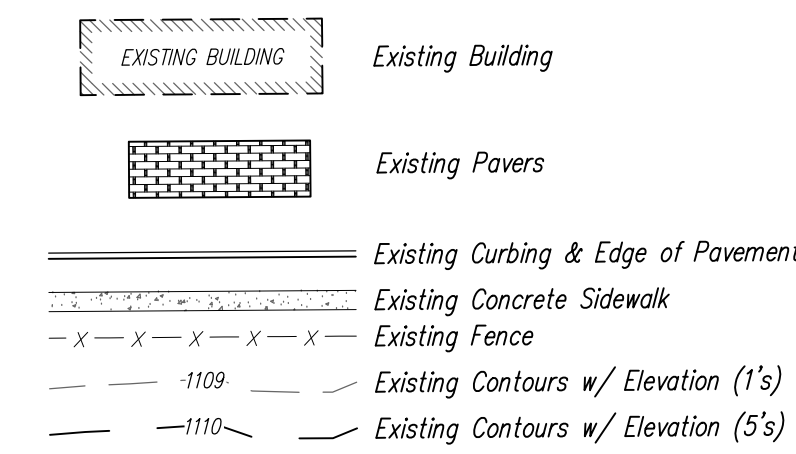
GRADING NOTES

1. ALL SITE WORK SHALL BE DONE IN ACCORDANCE WITH THE PLANS PREPARED BY PENNTERRA, THE CURRENT REQUIREMENTS OF THE FERGUSON TOWNSHIP, THE APPLICABLE SECTIONS OF THE PENNDOT STANDARD SPECIFICATIONS FOR ROADWAY CONSTRUCTION, AND ALL OTHER PERTINENT FEDERAL AND STATE LAWS.
2. MAXIMUM SLOPES SHALL BE 3:1 (HORIZONTAL:VERTICAL) UNLESS NOTED OTHERWISE.
3. ALL AREAS NOT PAVED SHALL BE TOPSOILED, SEED, MULCHED OR LANDSCAPED UNLESS OTHERWISE NOTED IN THE CONSTRUCTION DRAWINGS, SITE SPECIFICATIONS OR INSTRUCTED BY THE OWNER.
4. THE MAXIMUM SLOPE WITHIN ALL THE HANDICAPPED SPACES SHALL BE 2.00%.
5. THE MAXIMUM SLOPE FOR ALL ON-SITE SIDEWALKS SHALL BE 4.90% WITH A MAXIMUM CROSS SLOPE OF 2.00% AND CURB RAMPS SHALL HAVE A MAXIMUM SLOPE OF 8.30%.
6. CONTRACTOR SHALL RECONNECT ANY EXISTING ROOF DRAIN DOWN SPOUTS DISCONNECTED DURING CONSTRUCTION.
7. TWC ABBREVIATION STANDS FOR THE ELEVATION FOR TOP OF WALL CAP.

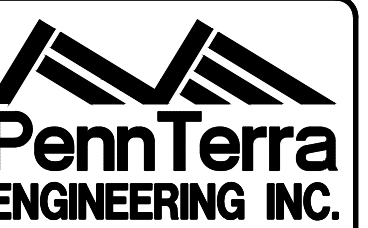
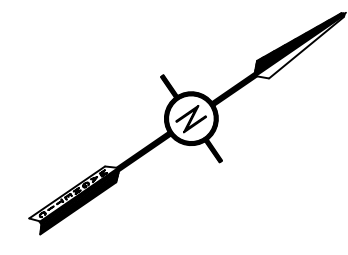
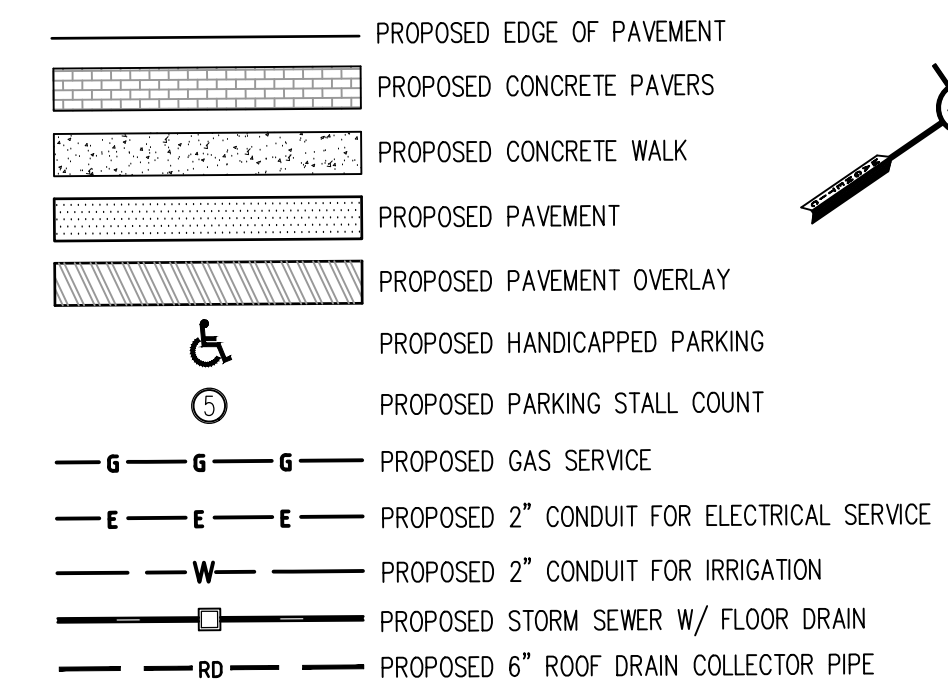
SURVEY FEATURES LEGEND



EXISTING FEATURES LEGEND



PROPOSED FEATURES LEGEND

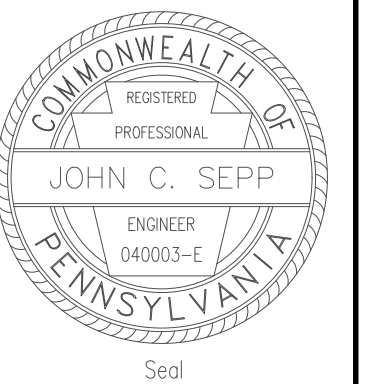


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Designer	MAT
Draftsman	MJA
Proj Manager	MAT
Surveyor	BRK
Perimeter Ck.	
Book	527 Pg 2
File	5 - GRADING
Layout	GRADING

Date	Description
1-3-19	PER TOWNSHIP COMMENTS
11-30-18	PER TOWNSHIP COMMENTS
M.A.	
Date	Description
	REVISIONS

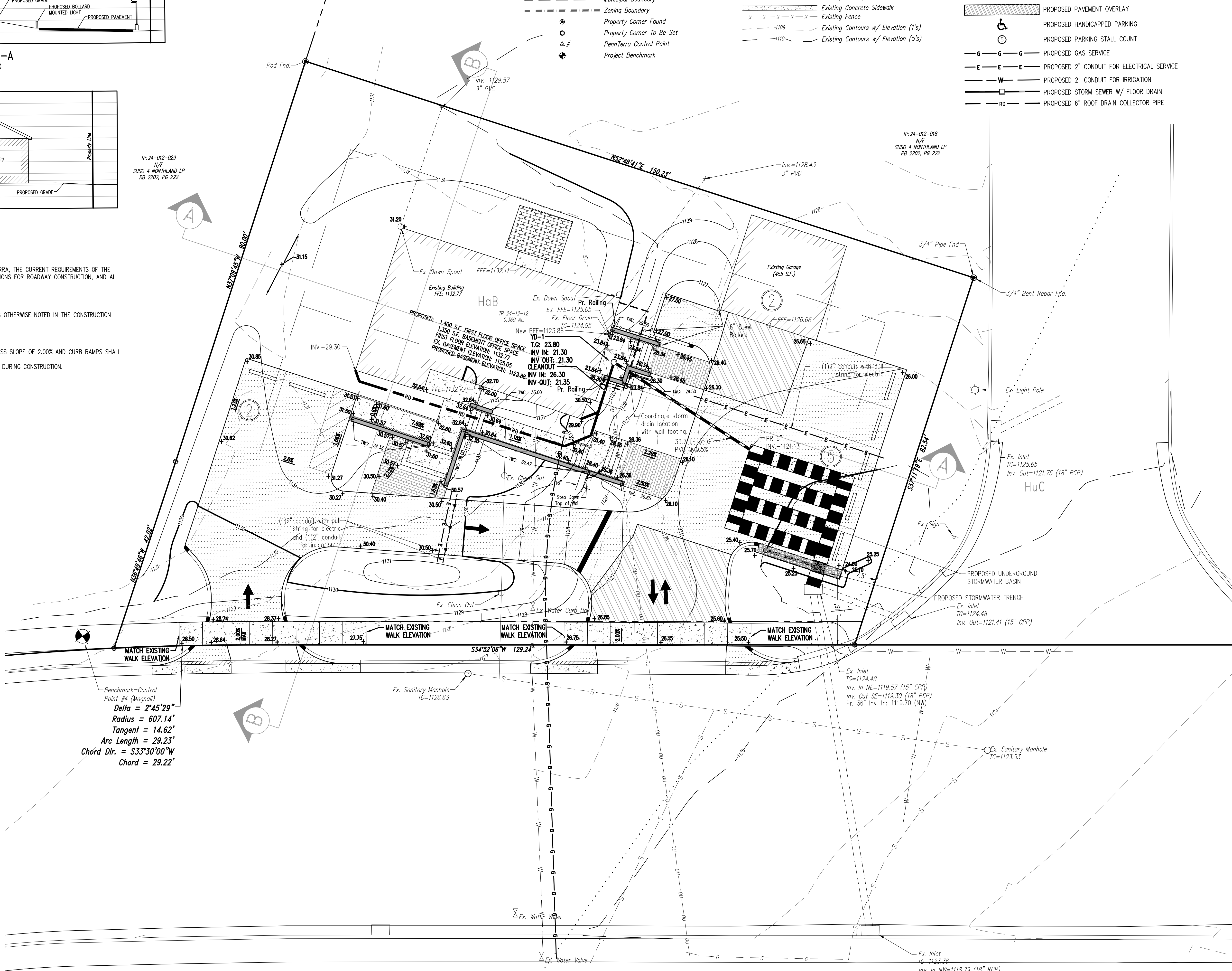
KING WEALTH STRATEGIES

FERGUSON TOWNSHIP
CENTRE COUNTY
PENNSYLVANIA

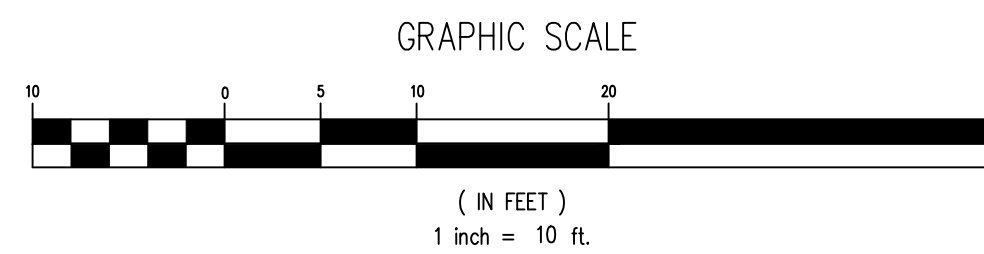
PRELIMINARY/FINAL LAND DEVELOPMENT PLAN

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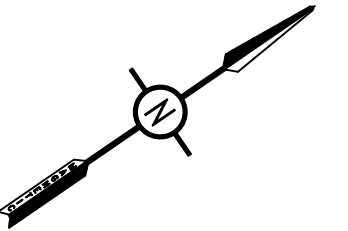
PROJECT NO.	17228
DATE	JUNE 26, 2018
SCALE	1"=10'
SHEET NO.	5 of 12



Benchmark=Control Point #4 (Magnail)
Delta = 2'45"29"
Radius = 607.14'
Tangent = 14.62'
Arc Length = 29.23'
Chord Dir. = S33°30'00"W
Chord = 29.22'



P:\dtpno\2017\17228\Design\pld final\plans\5 - GRADING.dwg, 1/22/2018 9:18:13 AM, 1:1



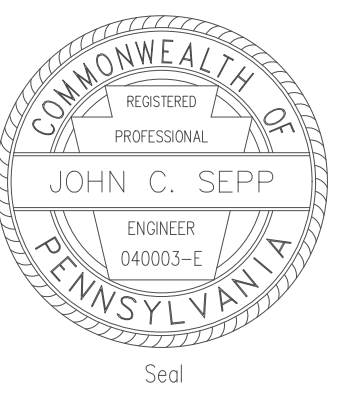
PennTerra ENGINEERING INC.
CENTRAL PENNSYLVANIA REGION OFFICE:
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 Proj/Manager: MAT
 Surveyor: BRK
 Perimeter Cl.
 Book: 527, Pg: 2
 File: 6 - LANDSCAPE
 Layout: LANDSCAPE

NO.	REVISIONS
1-2-19	PER TOWNSHIP COMMENTS
11-30-18	PER TOWNSHIP COMMENTS
	MJA
Date	Description

KING WEALTH STRATEGIES

FERGUSON TOWNSHIP
 CENTRE COUNTY
 PENNSYLVANIA

PRELIMINARY/FINAL LAND DEVELOPMENT PLAN

LANDSCAPE

PROJECT NO.
17228

DATE
JUNE 26, 2018

SCALE SHEET NO.
1"=10' 6 of 12

PLANTING SCHEDULE					
SYMBOL	KEY	QTY	COMMON NAME	BOTANICAL NAME	MATURE HEIGHT / SPREAD
CANOPY TREES (PROPOSED)					
	T-1	5	NYSSA SYLVATICA	BLACK GUM	2-1/2" CAL. 50' / 30'
	T-2	3	PLATANUS X ACERIFOLIA	LONDON PLAN TREE	2-1/2" CAL. 70' / 65'
EVERGREEN TREES (PROPOSED)					
	E-1	5	THUGA OCCIDENTALIS	AMERICAN ARBORVITAE	6' HT. 40' / 10'
	E-2	3	PINUS RESINOSA	RED PINE	6' HT. 35' / 25'
UNDERSTORY TREES (PROPOSED)					
	U-1	1	HIBISCUS SYRIACUS	ROSE OF SHARON	6' HT. 12' / 10'
SHRUBS					
	S-1	17	ILEX VERTICILLATA 'WINTER RED'	WINTER RED WINTERBERRY HOLLY	24"-36"
	S-2	4	TAXUS BACCATA 'REPANDENS'	SPREADING ENGLISH YEW	18"-24"
EVERGREEN TREES (EXISTING)					
EX-1	13	THUGA CANADENSIS	EASTERN HEMLOCK	VARIES	
EX-2	1	PICEA ABIES	NORWAY SPRUCE	10" DIA.	
EX-3	1	THUGA OCCIDENTALIS	AMERICAN ARBORVITAE	6" Ø	
EX-4	1	PICEA ORIENTALIS	ORIENTAL SPRUCE	24"	

- LANDSCAPING NOTES:**
- ALL PLANTS SHALL BE MULCHED WITH 3-4" OF SHREDDED HARDWOOD BARK MULCH, WELL-AGED AND DARK BLACK IN COLOR.
 - INDIVIDUAL TREES NOT INCLUDED IN A CONTINUOUS BED ARE TO BE MULCHED AT THEIR BASE OVER A 4" DIAMETER CIRCLE.
 - ALL GROUP SHRUB PLANTINGS SHALL BE MULCHED IN CONTINUOUS BEDS ENCOMPASSING ALL OF THE PLANTS.
 - QUANTITIES OF PLANT MATERIALS NOTED ON THE PLANTING SCHEDULE ARE TO BE VERIFIED WITH QUANTITIES SHOWN ON THE PLAN WHICH WILL HAVE PRIORITY.
 - SUBSTITUTIONS OF ANY PLANT MATERIAL SHALL BE APPROVED BY FERGUSON TOWNSHIP AND THE OWNER PRIOR TO PLANTING.
 - ALL UNPAVED AREAS ON THE SITE NOT PLANTED WITH TREES AND/OR SHRUBS ARE TO BE PERMANENTLY SEEDDED WITH A HARDY PERENNIAL GRASS SEED MIXTURE AFTER FINE GRADING IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS UNLESS OTHERWISE NOTED.
 - THE LANDSCAPE CONTRACTOR MUST PROVIDE A ONE-YEAR GUARANTEE ON ALL PLANT MATERIAL TO INCLUDE THE REPLACEMENT OF THE PLANTS AND INSTALLATION OF THOSE PLANTS WHICH DO NOT SURVIVE THE YEAR FOLLOWING ACCEPTANCE OF LANDSCAPING BY THE OWNER.
 - THE LANDSCAPE CONTRACTOR SHALL KEEP ALL NEW PLANTINGS WATERED OVER THE COURSE OF THE PROJECT & GUARANTEE PERIOD. THE OWNER SHALL PROVIDE A WATERING SOURCE ON SITE FOR THIS PURPOSE. THE LAWN AREAS SHALL BE WATERED BY THE CONTRACTOR UPON INSTALLATION.
 - ALL DISTRIBUTED AREAS NOT PROPOSED FOR PAVING SHALL HAVE 6" OF TOPSOIL SPREAD UNIFORMLY TO THE PROPOSED FINISH GRADE.
 - ALL TREES AND SHRUBS SHALL BE PLANTED IN ACCORDANCE WITH THE "GUIDE TO PLANTING IN FERGUSON TOWNSHIP".

TYPE A 15' LANDSCAPE BUFFER YARD

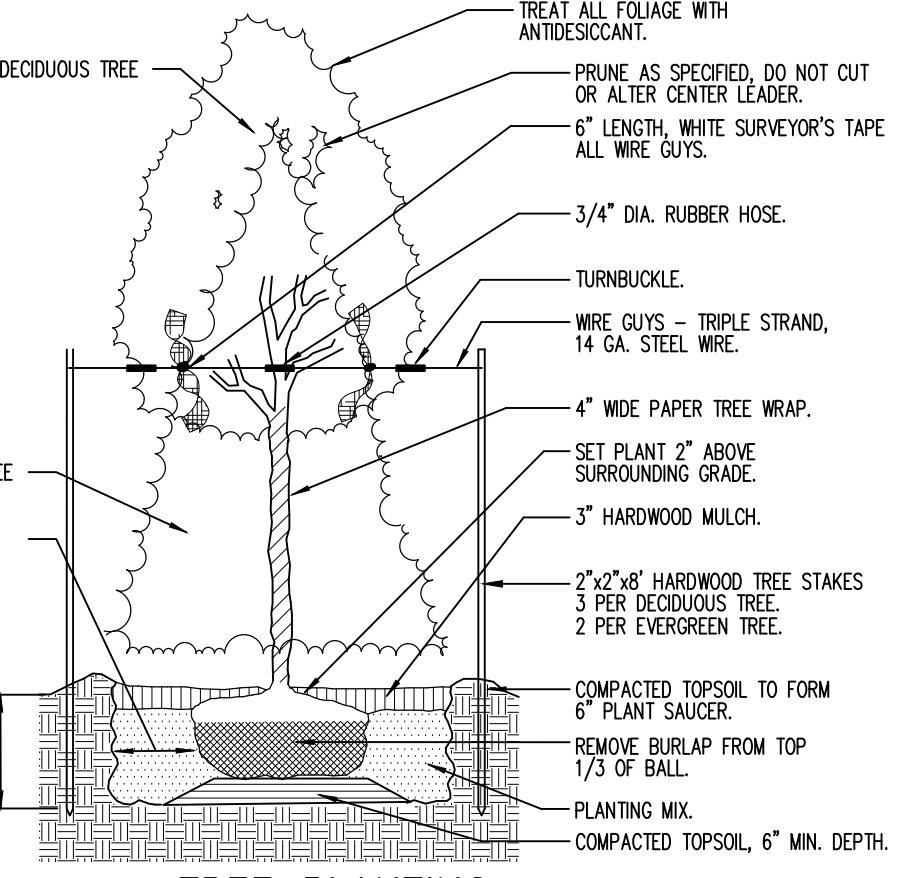
REQUIRED: 2 CANOPY TREES / 100 LF BUFFER YARD A @ 120.23 LF = 3 TREES
 6 EVERGREEN TREES / 100 LF BUFFER YARD A @ 120.23 LF = 8 TREES

PROPOSED: CANOPY TREES - 1 & 4 EXISTING EVERGREEN FOR 2 CANOPY TREES
 EVERGREEN/UNDERSTORY - 8 EXISTING (EX-1)

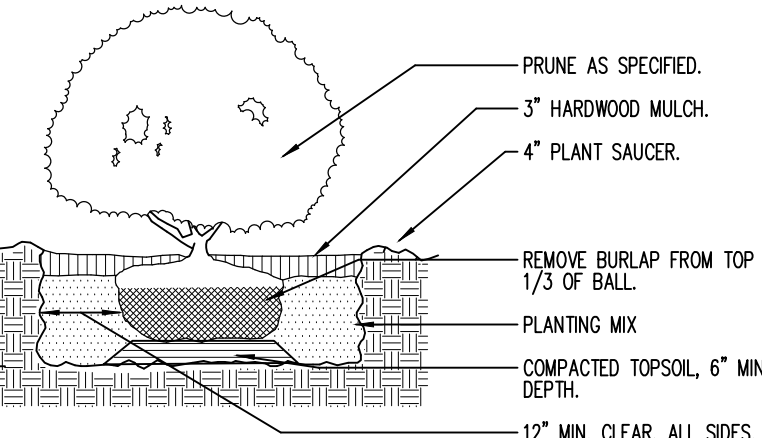
TYPE A 15' LANDSCAPE BUFFER YARD

REQUIRED: 2 CANOPY TREES / 100 LF BUFFER YARD A @ 133.32 LF = 3 TREES
 6 EVERGREEN TREES / 100 LF BUFFER YARD A @ 132.32 LF = 8 TREES

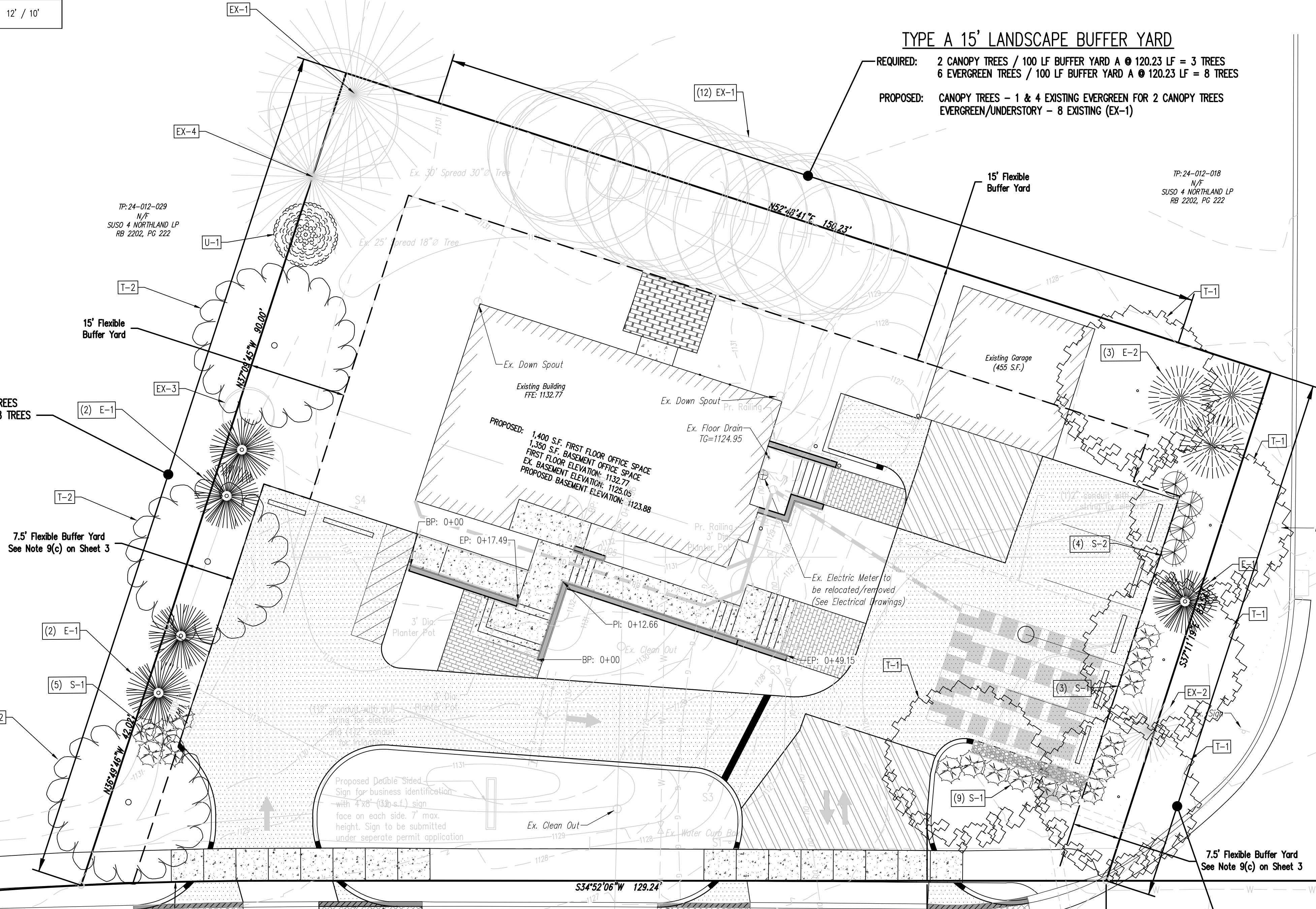
PROPOSED: CANOPY TREES - 3
 EVERGREEN/UNDERSTORY - 3 EXISTING (EX-1, EX-3, EX-4)
 EVERGREEN TREES - 4
 UNDERSTORY TREES - 1



TREE PLANTING
 NO SCALE



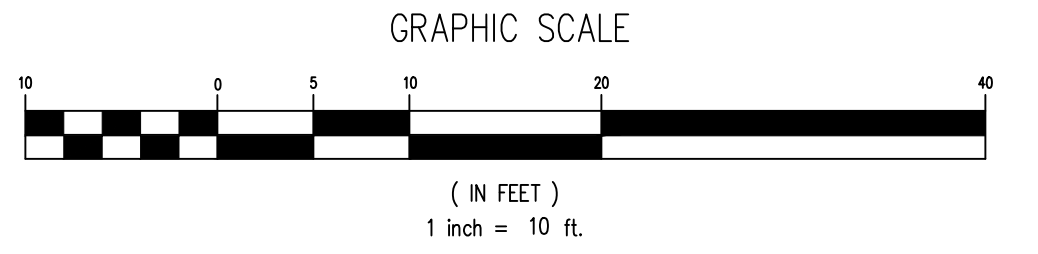
SHRUB PLANTING
 NO SCALE



TYPE A 15' LANDSCAPE BUFFER YARD

REQUIRED: 2 CANOPY TREES / 100 LF BUFFER YARD A @ 82.54 LF = 2 TREES
 6 EVERGREEN TREES / 100 LF BUFFER YARD A @ 82.54 LF = 5 TREES

PROPOSED: CANOPY TREES - 3
 EVERGREEN/UNDERSTORY - 1 EXISTING (EX-2)
 EVERGREEN TREES - 4



LIGHT FIXTURE SCHEDULE

Symbol	Label	QTY	Manufacturer	Catalog Number	Description	Lamp	Lumens per Lamp	LLF	Wattage
	A	2	Lithonia Lighting	DSXO LED P1 30K BLC MVOLT	DSXO LED P1 30K BLC MVOLT (PARKING AREA LIGHTS)	LED	3585	1	38
	B	1	Lithonia Lighting	DSXO LED P1 30K RCCO MVOLT	DSXO LED P1 30K RCCO MVOLT (PARKING AREA LIGHTS)	LED	2668	1	38
	C	3	KIM LIGHTING	PA7S-CL4-12L-010-3K7	PA7S (BOLLARD LIGHTS)	C-70-CRI DATA SHOWN IS ABSOLUTE.	1401	1	14
	D	14	KIM LIGHTING	EL807/3L3K/UNV	EL807/3L3K/UNV- FLOOD (N-WALL LIGHTS)	3- NICHIA 3000K LEDs	Absolute	1	5.32
	E	4	KIM LIGHTING	4324P70-16L3K	SIGN-WALL LIGHTER (GROUND MOUNTED WALL-WASH LIGHTS)	C-70-CRI DATA SHOWN IS ABSOLUTE.	Absolute	1	36.4
	F	4	ARCHITECTURAL AREA LIGHTING	PKSA-DS-15LED-WW	PARK WAY SQUARE SCONCE PEDESTRIAN DIE-CAST ALUMINUM STRUTS AND BALLAST COMPARTMENT. LIGHTLY DIFFUSED LENS. DOWN SPREAD. (WALL MOUNTED BLDG. ENTRANCE SCONCE LIGHTS)	15 CONSTANT CURRENT LED. 3000K.	638	1	19.5
	G	2	KIM LIGHTING	CFL-WF-213K35	CFL (COMPACT FLOOD/SIGN LIGHT)	C-70-CRI DATA SHOWN IS ABSOLUTE.	2971	1	25.38

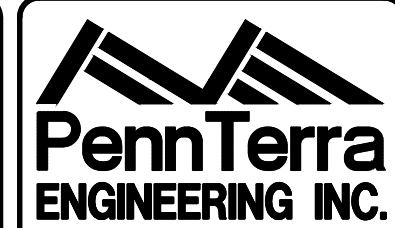
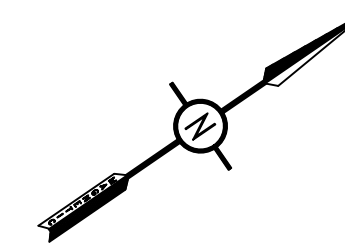
LIGHTING STATISTICS

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
PAVED AREA	X	1.9 fc	12.6 fc	0.4 fc	31.5:1	4.8:1
PROPERTY	X	0.9 fc	12.6 fc	0.0 fc	N/A	N/A
TRESPASS	+	0.1 fc	12.6 fc	0.0 fc	N/A	N/A

- FIXTURE NOTES**
1. FIXTURE COLORS SHALL BE "BLACK".
 2. INSTALL/MOUNT FIXTURE TYPE "G" WITH ONE "LANDSCAPE LIGHTPOST AND CAP" BY ENGINEERED PRODUCTS CO.
 3. INSTALL/MOUNT FIXTURE TYPE "F" WITH ONE "LANDSCAPE LIGHT POST AND CAP" BY ENGINEERED PRODUCTS CO. FOR THE POWER SUPPLY SIDE PROVIDE AN 18" SUPPORT PIPE COMPATIBLE WITH 1/2" NPT MALE MOUNTING ON OTHER POST. IMBED POST 13 +

GENERAL NOTES

1. ELECTRICAL CONTRACTOR SHALL VERIFY AND COORDINATE ALL EXISTING AND NEW UNDERGROUND FACILITIES WITH ALL CONTRACTORS, UTILITY COMPANIES, ETC. BEFORE BEGINNING ANY UNDERGROUND CONSTRUCTION
2. WIRING UNDER ALL PAVEMENT SURFACES SHALL BE IN PVC CONDUIT SIZE AS INDICATED - MINIMUM SIZE 2". ELECTRICAL CONTRACTOR SHALL FIELD VERIFY LOCATION OF ALL ROADWAYS, WALKWAYS, PATIOS, TERRACES, ETC. AND PROVIDE CONDUITS UNDER ALL LOCATIONS FOR WIRING ACCESS.
3. ALL CIRCUITS SHALL BE COMPLETE WITH GROUND WIRE.
4. ALL CONDUIT SHALL BE SET AT A MINIMUM DEPTH OF 24".
5. ALL WIRING TRENCHES SHALL BE RUN AS CLOSE AS POSSIBLE TO ALL CURBS - NO WIRING SHALL RUN THROUGH THE CENTER OF ANY ISLAND, PLANTER, TERRACE, COURTYARD, ETC. ELECTRICAL CONTRACTOR SHALL VERIFY CONDUIT LOCATION IN THE FIELD BEFORE EXCAVATING.
6. ELECTRICAL INSTALLATION FOR LIGHTING SHALL INCLUDE REQUIRED CONTROL PANEL, TIMING CLOCKS, PHOTOCELL AND ASSOCIATED WIRING AND CONDUITS.

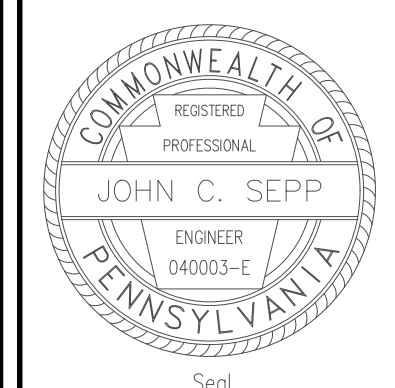


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Designer: MAT
 Draftsman: MJA
 Proj Manager: MAT
 Surveyor: BRK
 Perimeter Ok:
 Book: 527 Pg 2
 File: 7 - LIGHTING
 Layout: LIGHTING

1-2-19 PER TOWNSHIP COMMENTS
 MJA
 11-30-18 PER TOWNSHIP COMMENTS
 MJA
 Date:
 REVISIONS

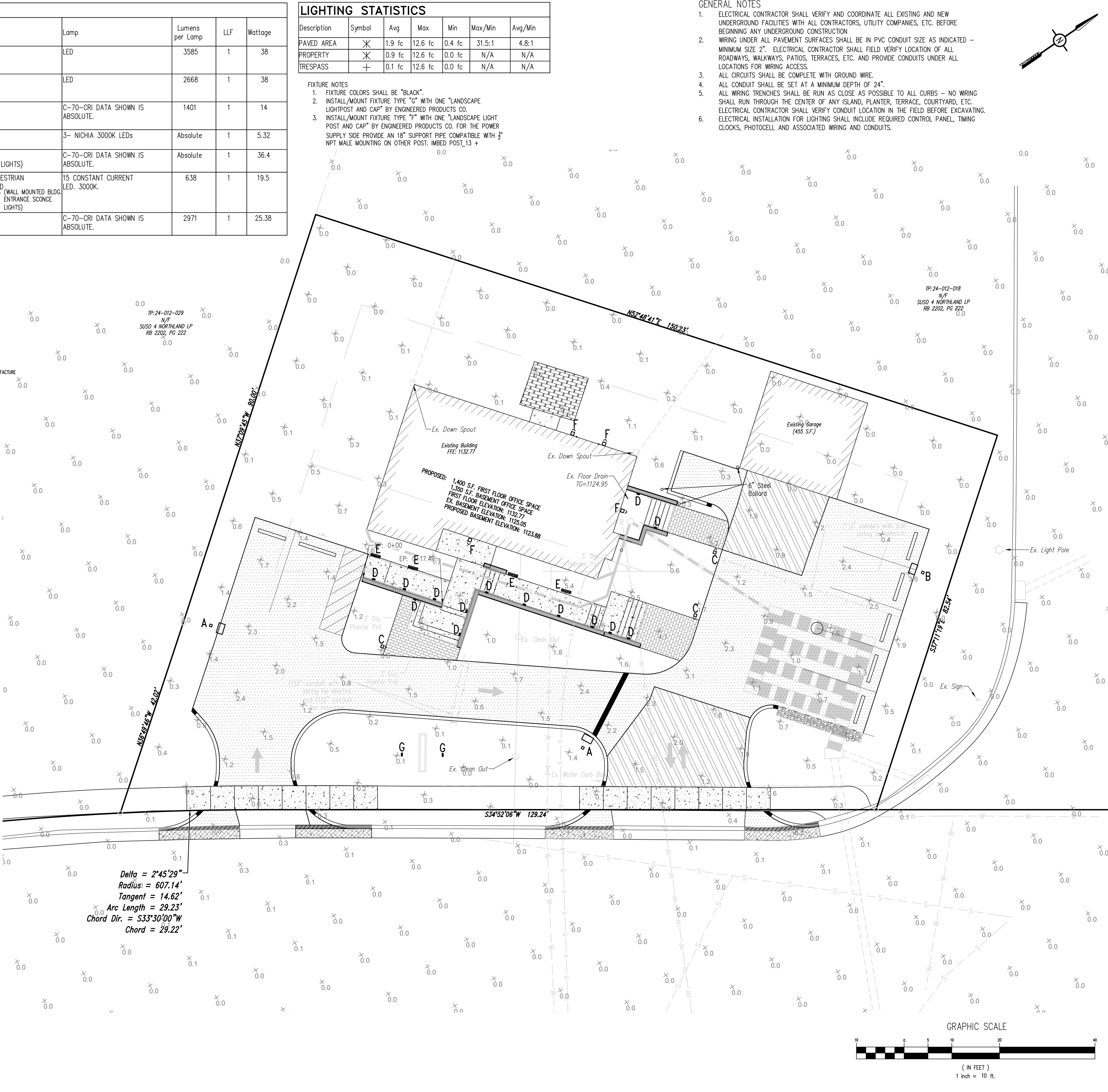
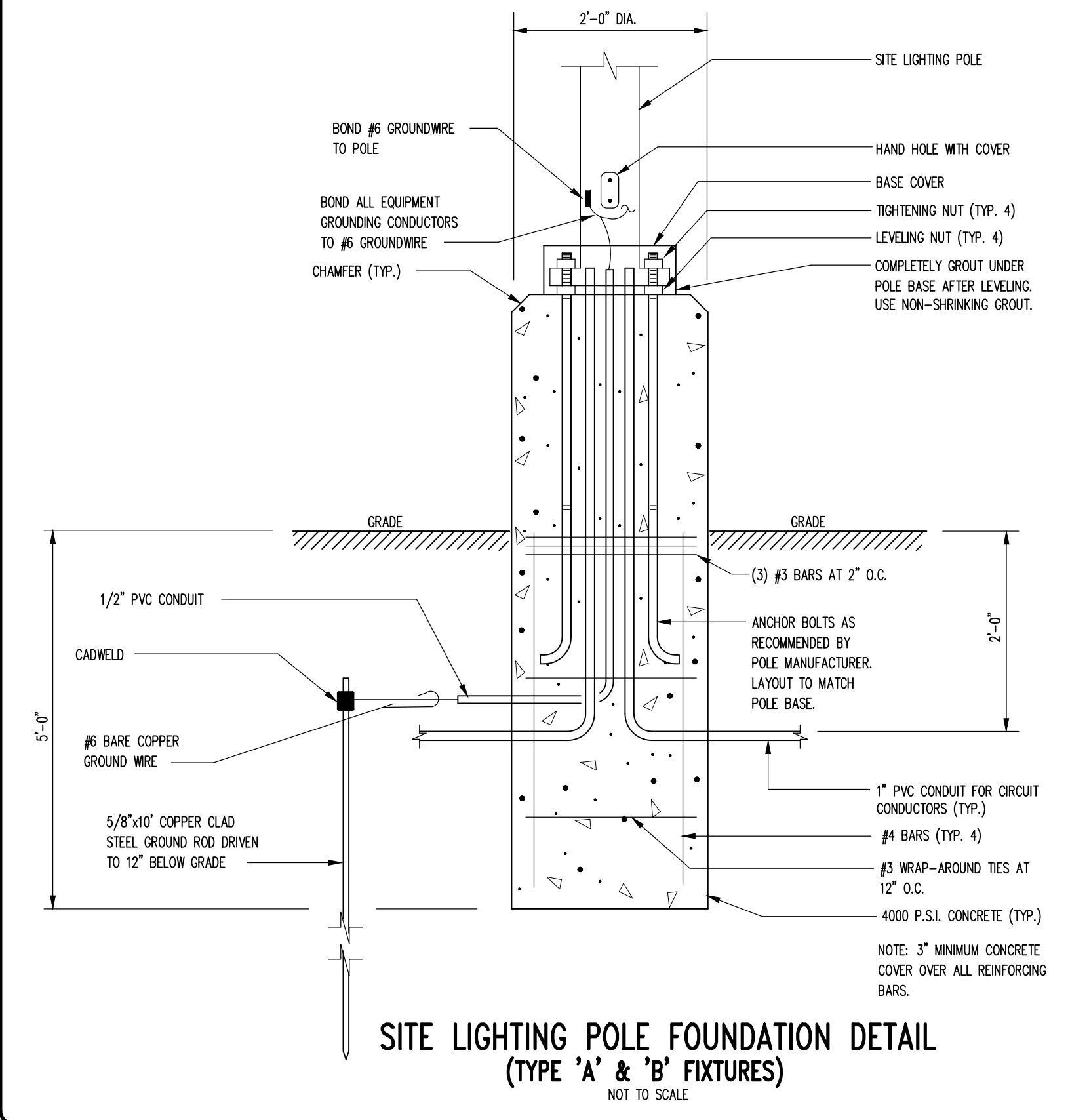
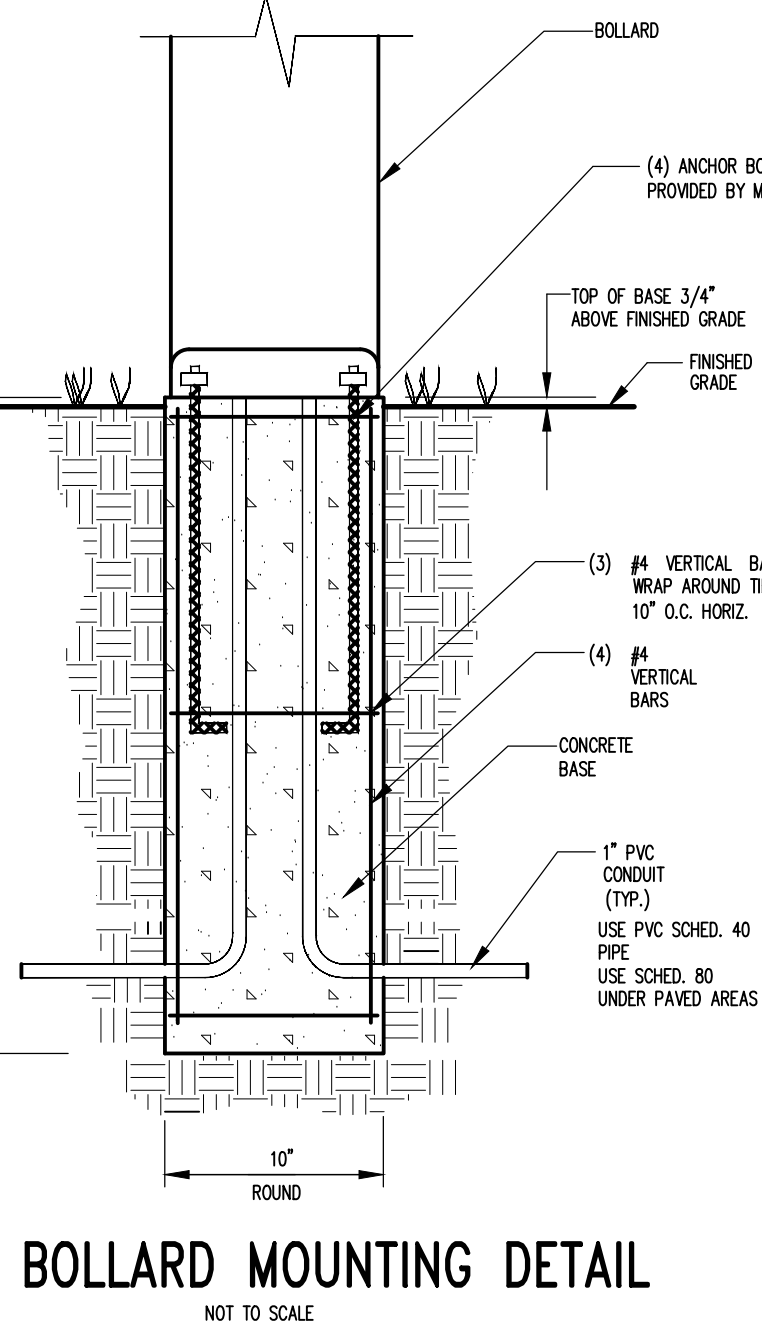
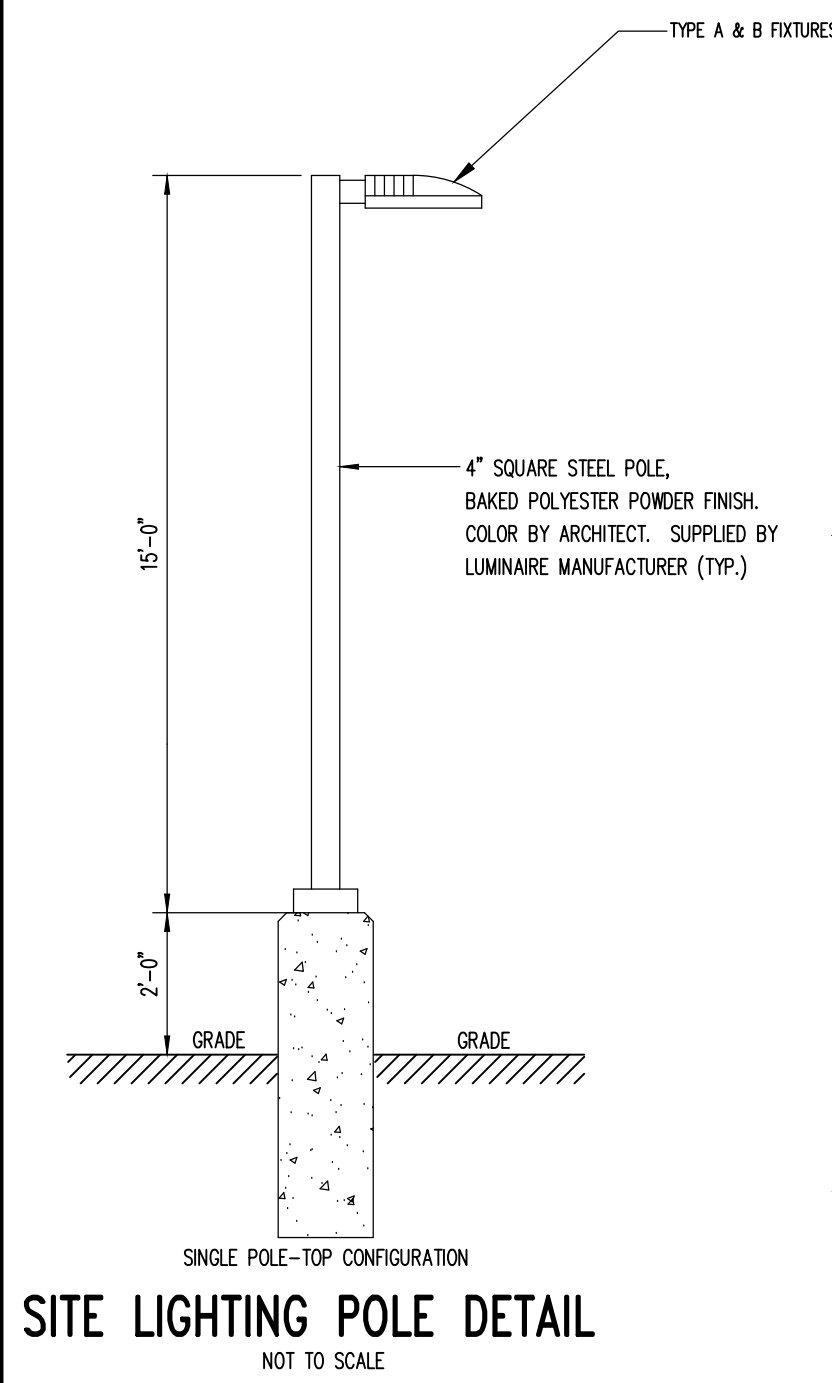
KING WEALTH STRATEGIES

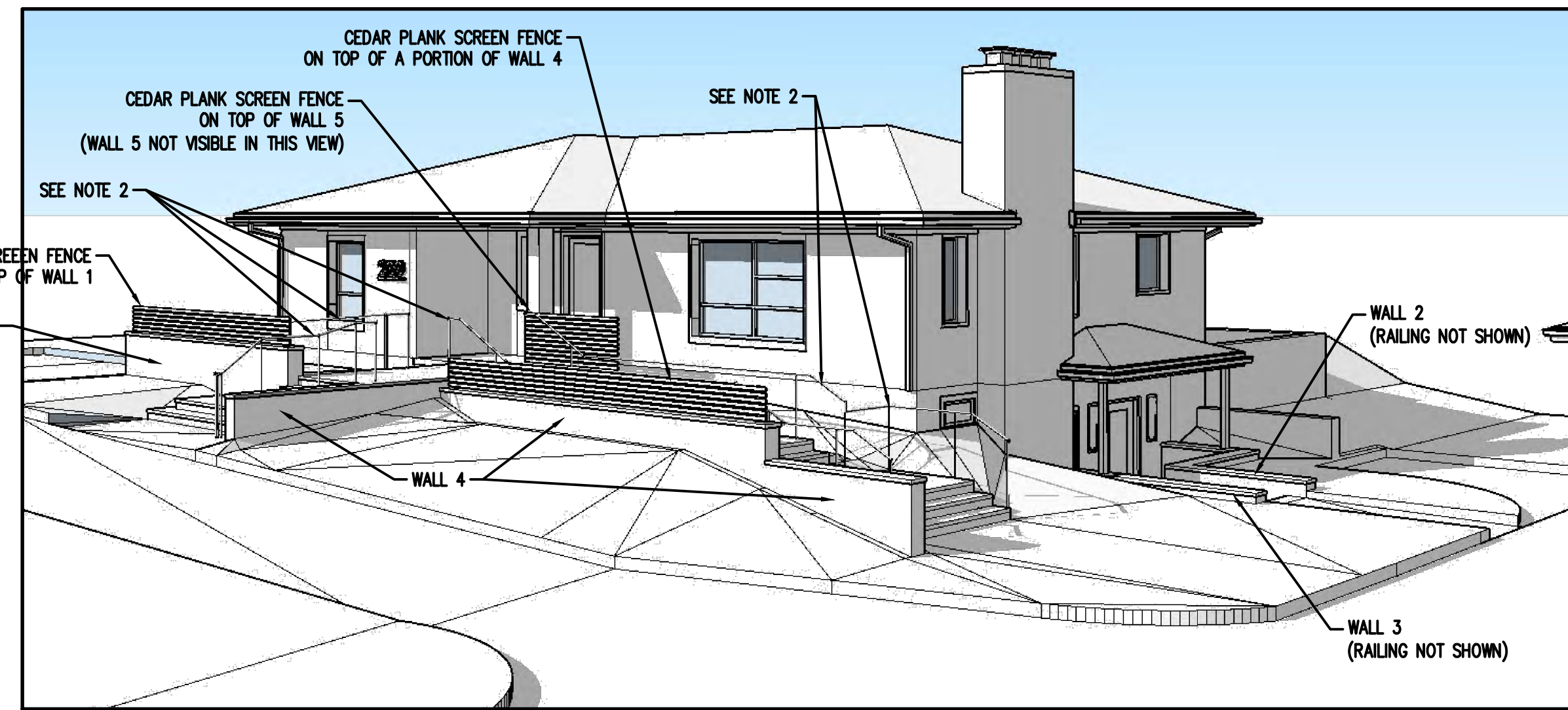
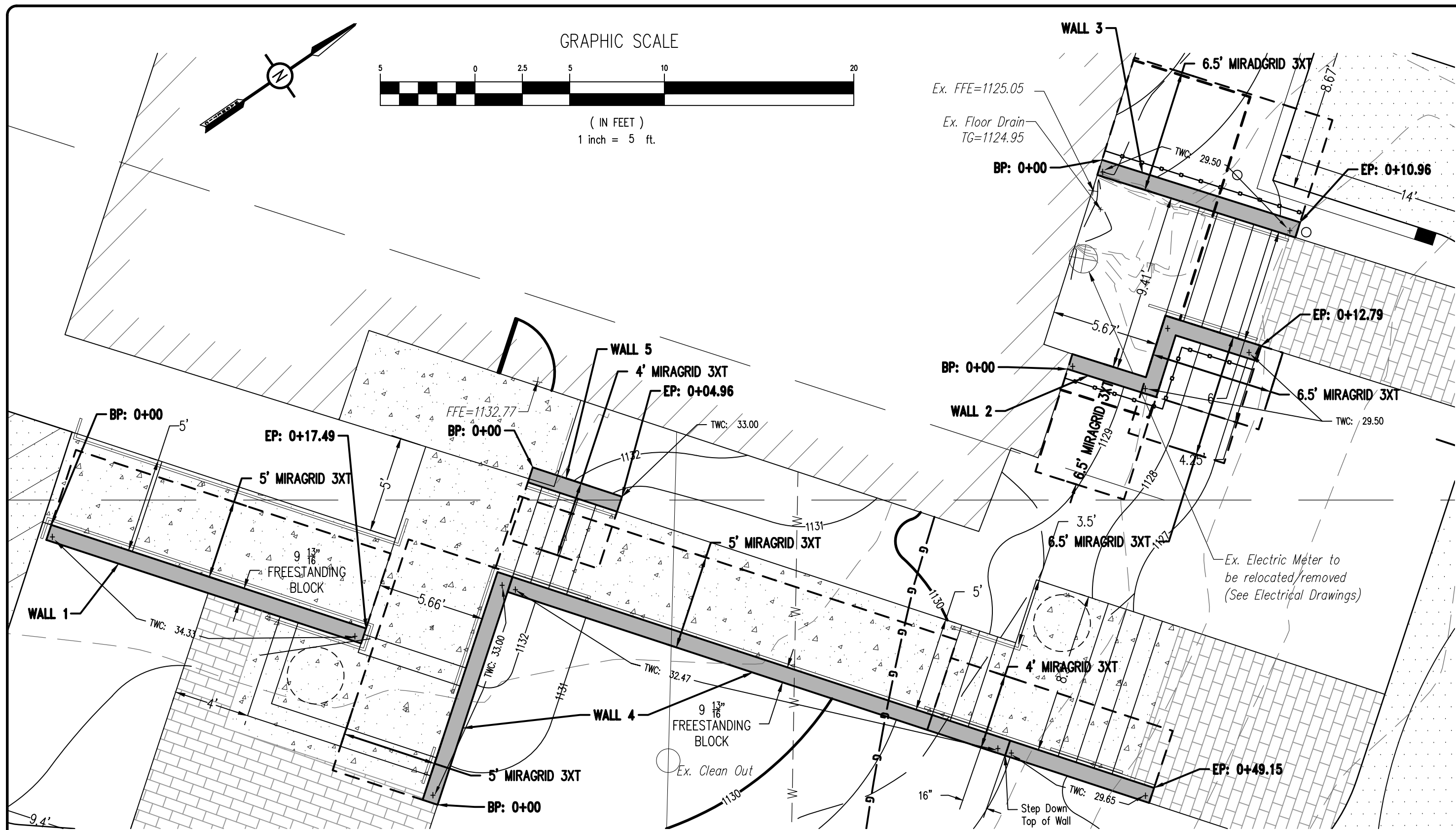
FERGUSON TOWNSHIP
 CENTRE COUNTY
 PENNSYLVANIA

PRELIMINARY/FINAL LAND DEVELOPMENT PLAN

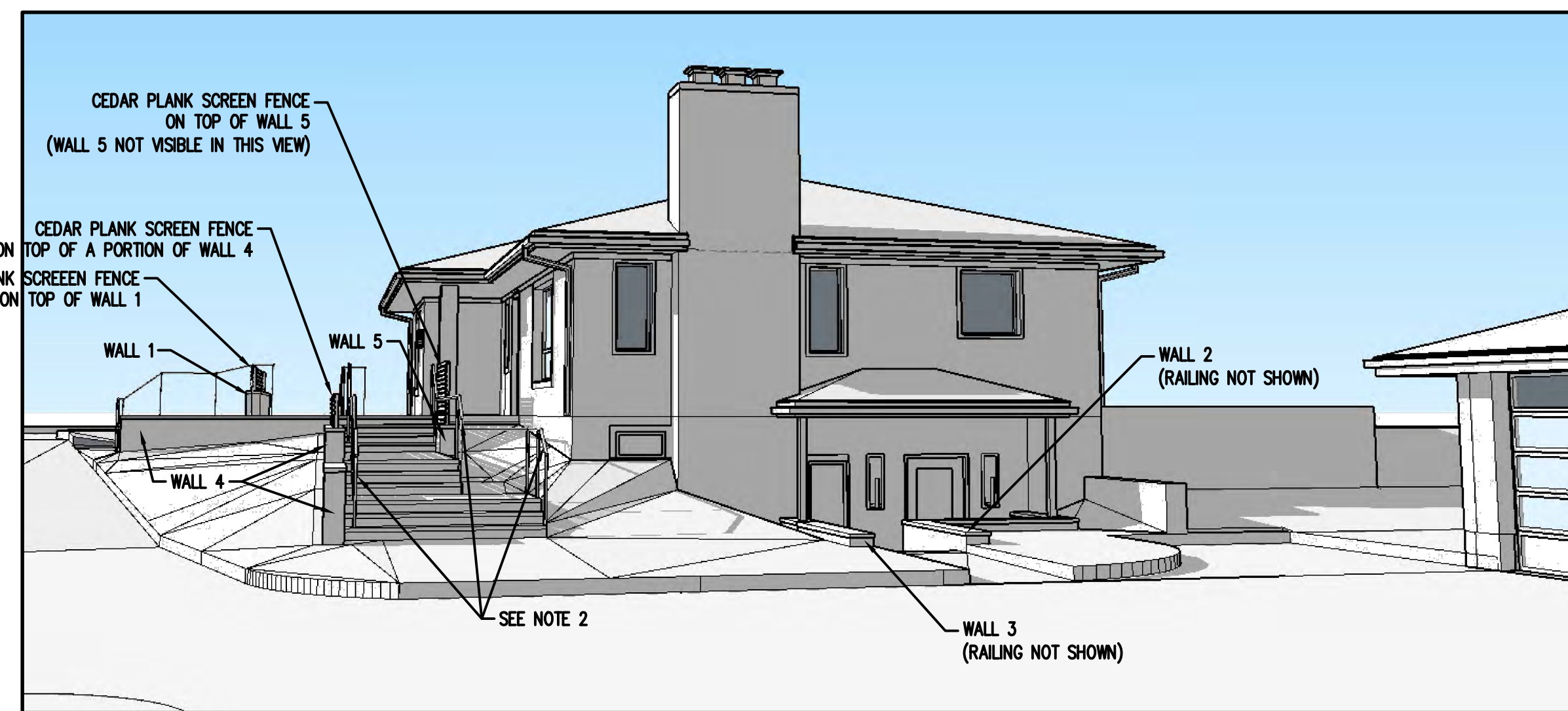
LIGHTING

PROJECT NO.
17228
 DATE
JUNE 26, 2018
 SCALE SHEET NO.
1"=10' 7 of 12





GRAPHIC REPRESENTATION 'A'
(NO SCALE)



GRAPHIC REPRESENTATION 'B'
(NO SCALE)

EXISTING FEATURES LEGEND

- Existing Building
- Existing Pavers
- Existing Curbing & Edge of Pavement
- Existing Concrete Sidewalk
- Existing Fence
- Existing Contours w/ Elevation (1's)
- Existing Contours w/ Elevation (5's)

PROPOSED FEATURES LEGEND

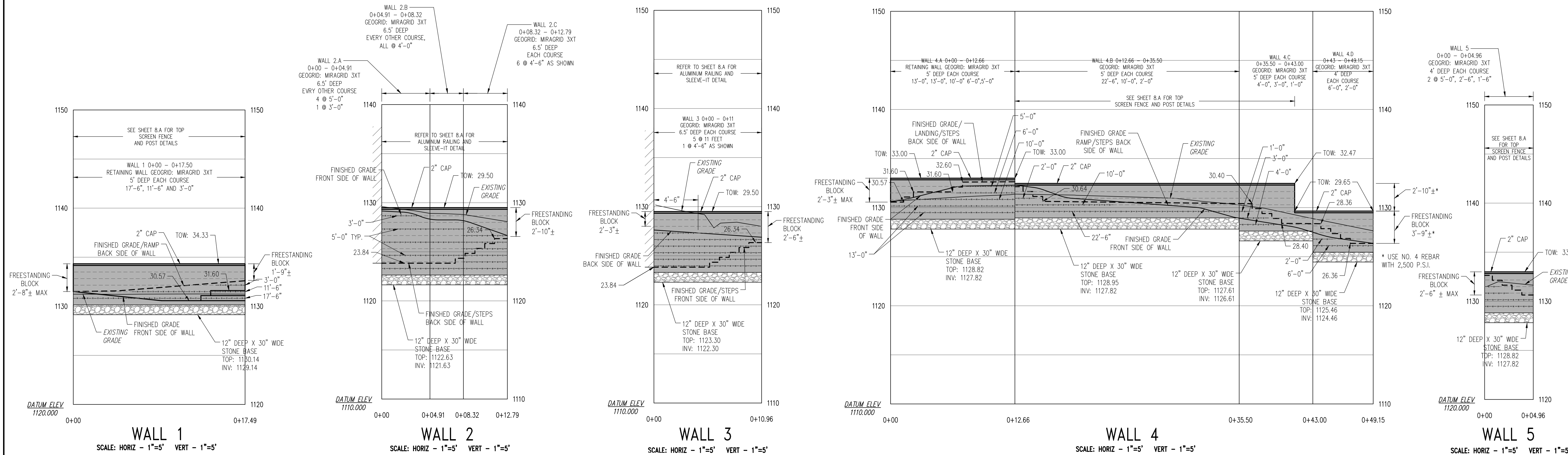
- PROPOSED EDGE OF PAVEMENT
- PROPOSED CONCRETE PAVERS
- PROPOSED CONCRETE WALK
- PROPOSED PAVEMENT
- PROPOSED PAVEMENT OVERLAY
- PROPOSED HANDICAPPED PARKING
- PROPOSED PARKING STALL COUNT
- PROPOSED GAS SERVICE
- PROPOSED 2" CONDUIT FOR ELECTRICAL SER
- PROPOSED 2" CONDUIT FOR IRRIGATION
- PROPOSED STORM SEWER W/ FLOOR DRAIN
- BEGINNING POINT OF PROFILE
- ENDING POINT OF PROFILE

SURVEY FEATURES LEGEND

- Property Line, Lot Line or Right of Way Line
- Adjoining Property Line
- Building Setback Line
- Easement Line
- Roadway Center Line
- Municipal Boundary
- Zoning Boundary
- Property Corner Found
- Property Corner To Be Set
- PennTerra Control Point
- Project Benchmark

* IN ALL CASES THAT THE FREESTANDING WALL EXCEEDS 30"; USE NO. 4 REBAR IN ALL CASES WITH 2,500 P.S.I. CONCRETE. SEE NOTE E ON THE FREESTANDING WALL DETAIL ON SHEET 8.A

NOTE:
FINAL TOP OF WALL AND LOCATION OF WALL SEAM VERSUS FINISH GRADE MAY VARY. BRANDON BLOCKS ARE 9" DEEP AND HEIGHTS OF 7 1/4" AND 3 3/8". THE FINAL 'SEAM' LOCATION WILL VARY DEPENDING UPON THE 3 OR 4 ROW LAYING PATTERNS.



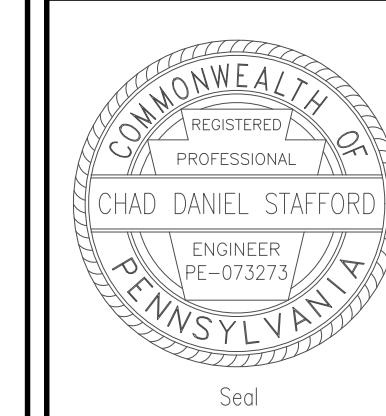
- NOTES:
1. THE GRAPHIC REPRESENTATION VIEWS SHOWN ARE ILLUSTRATIVE VIEWS OF THE INTENT OF THE WALL DESIGNS. THEY ARE NOT CONSTRUCTION DETAILS FOR WHICH THE WALLS ARE TO BE BUILT FROM. REFER TO WALL DETAILS AND CROSS SECTIONS SHOWN ON THE PLANS FOR CONSTRUCTION INFORMATION.
 2. REFER TO CONSTRUCTION DETAILS FOR RAMP & STAIRWAY HANDRAIL DESIGN INFORMATION.

PennTerra ENGINEERING INC.
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Proj Manager	MAT
Surveyor	BRK
Perimeter Ck.	
Book	527 Pg 2
File	B - WALL PLANS
Layout	WALL PLANS

REVISIONS	
No.	Description
1-2-19	FOR TOWNSHIP COMMENTS
11-30-18	FOR TOWNSHIP COMMENTS
11-30-18	FOR TOWNSHIP COMMENTS
11-30-18	FOR TOWNSHIP COMMENTS
11-30-18	FOR TOWNSHIP COMMENTS

KING WEALTH STRATEGIES

FERGUSON TOWNSHIP
CENTRE COUNTY
PENNSYLVANIA

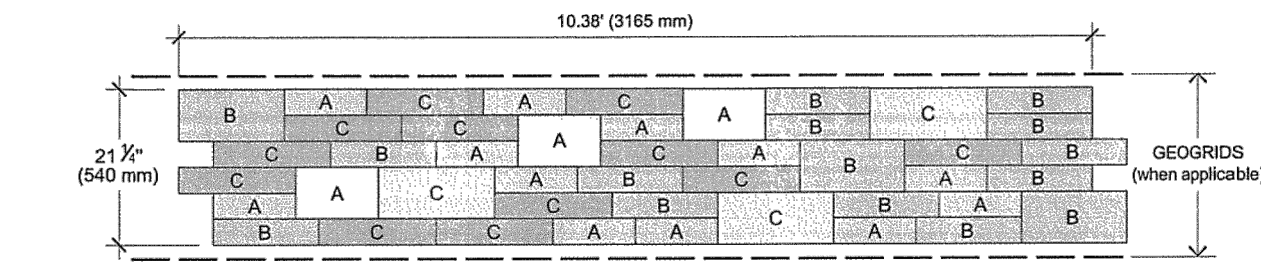
PRELIMINARY/FINAL LAND DEVELOPMENT PLAN

WALL PLAN AND PROFILES

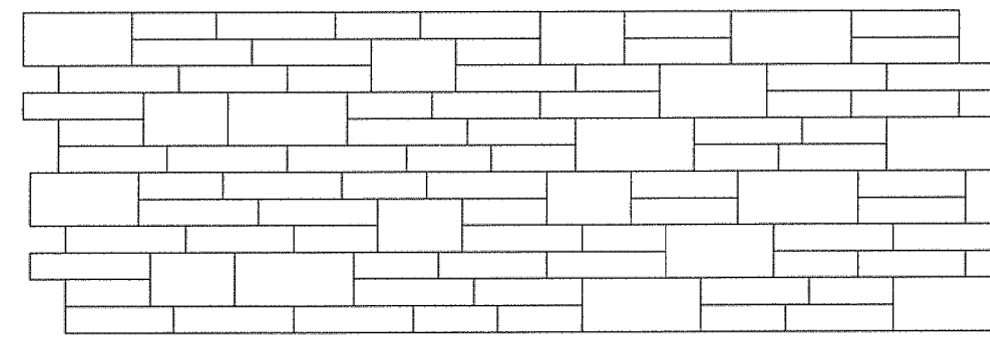
PROJECT NO. 17228
DATE: JUNE 26, 2018
SCALE: 1"=5' SHEET NO. 8 OF 12

3-Row Pattern | Laying Patterns

The 3-row pattern is 10.38' (3165 mm) long and 21 1/4" (540 mm) high. This pattern allows a continuous leveled surface every 21 1/4" (540 mm), which corresponds to the recommended maximum spacing between the layers of geogrid in a Brandon wall. This pattern is recommended when using the geogrid.



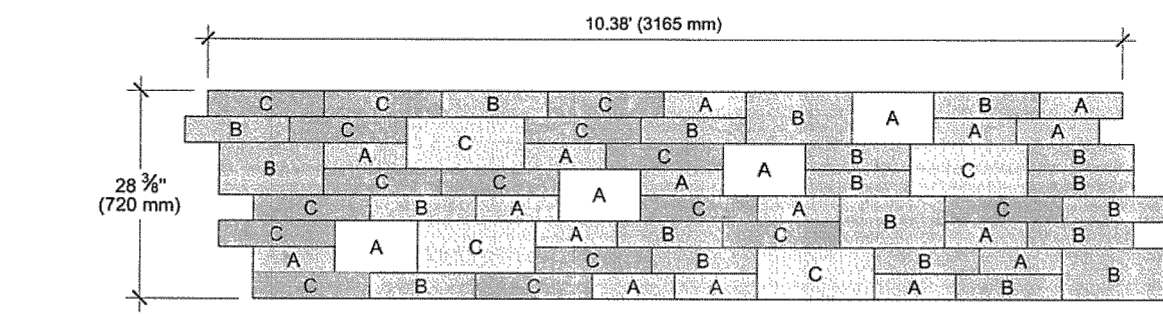
NUMBER OF BLOCKS REQUIRED	MODULE		
	A	B	C
BRANDON			
67% of the surface - Brandon 90 mm	12	12	12
33% of the surface - Brandon 180 mm	3	3	3



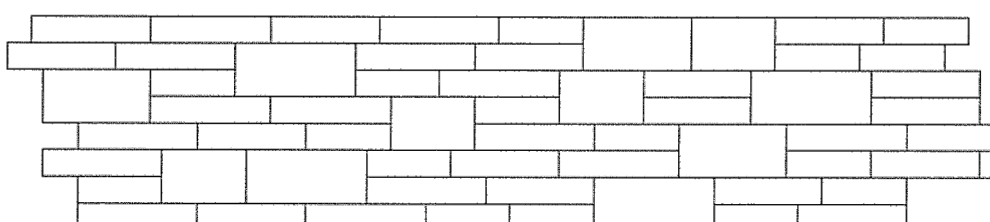
3 ROW LAYING PATTERN FOR BRANDON BLOCK
NOT TO SCALE

4-Row Pattern | Laying Patterns

The 4-row pattern is 10.38' (3165 mm) long and 28 1/4" (720 mm) high. This pattern should be used only where the geogrid is not required.

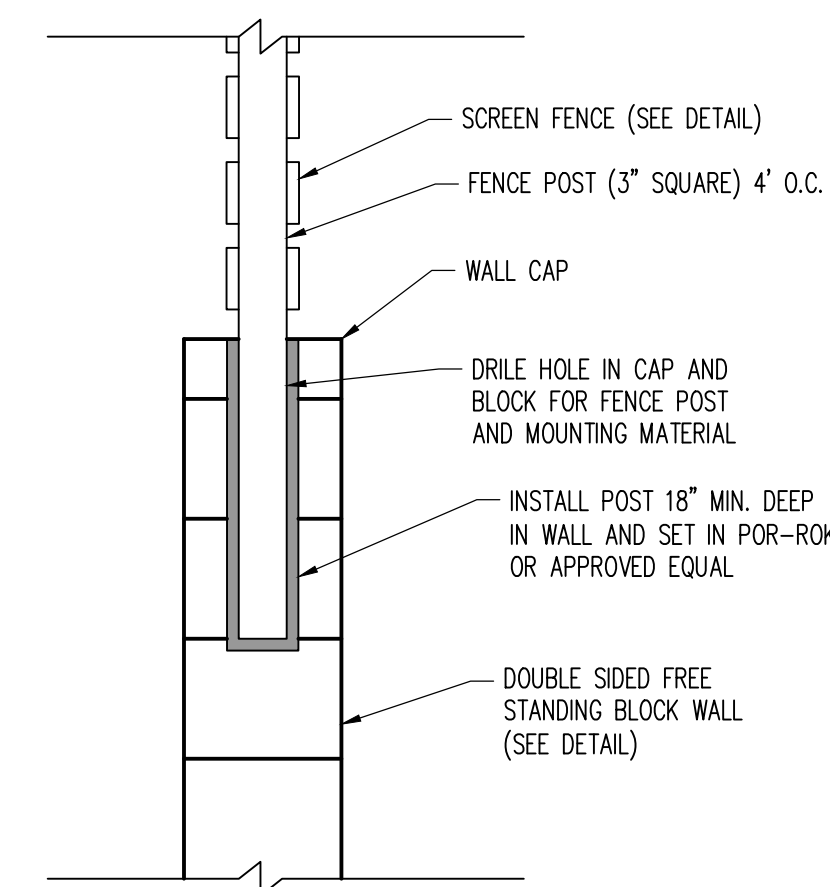


NUMBER OF BLOCKS REQUIRED	MODULE		
	A	B	C
BRANDON			
67% of the surface - Brandon 90 mm	16	16	16
33% of the surface - Brandon 180 mm	4	4	4



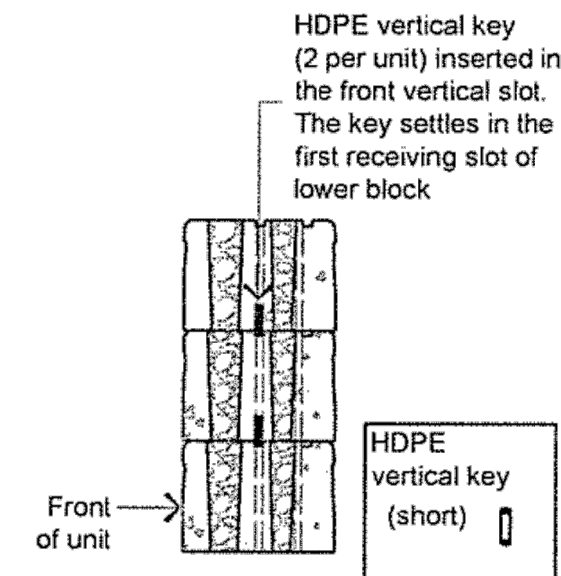
4 ROW LAYING PATTERN FOR BRANDON BLOCK
NOT TO SCALE

NOTE: FINAL TOP OF WALL AND LOCATION OF WALL SEAM VERSUS FINISH GRADE MAY VARY. BRANDON BLOCKS ARE 9 1/8" DEEP AND HEIGHTS OF 7 1/4" AND 3 3/8". THE FINAL 'SEAM' LOCATION WILL VARY DEPENDING UPON THE 3 OR 4 ROW LAYING PATTERNS.



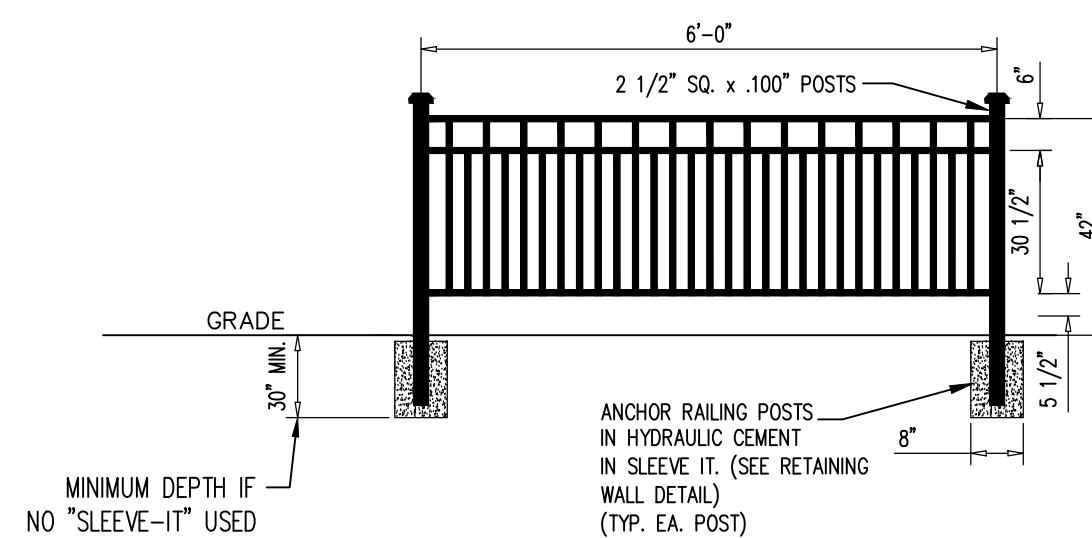
FENCE POST INSTALLATION
NOT TO SCALE

VERTICAL WALL



BRANDON 180 mm IS EQUIVALENT TO TWICE THE BRANDON 90 mm

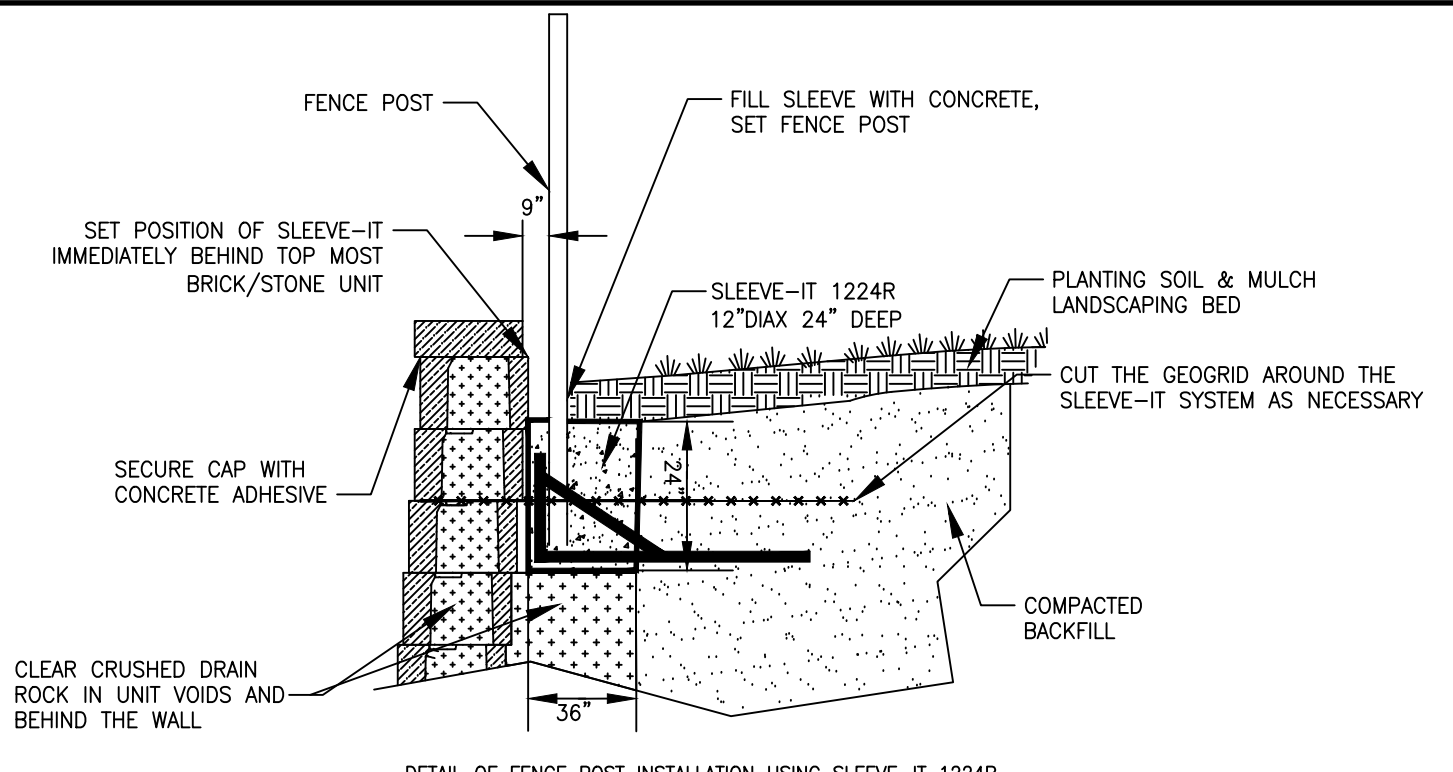
BRANDON BLOCK
NOT TO SCALE



ALUMINUM RAILING DETAIL
NOT TO SCALE

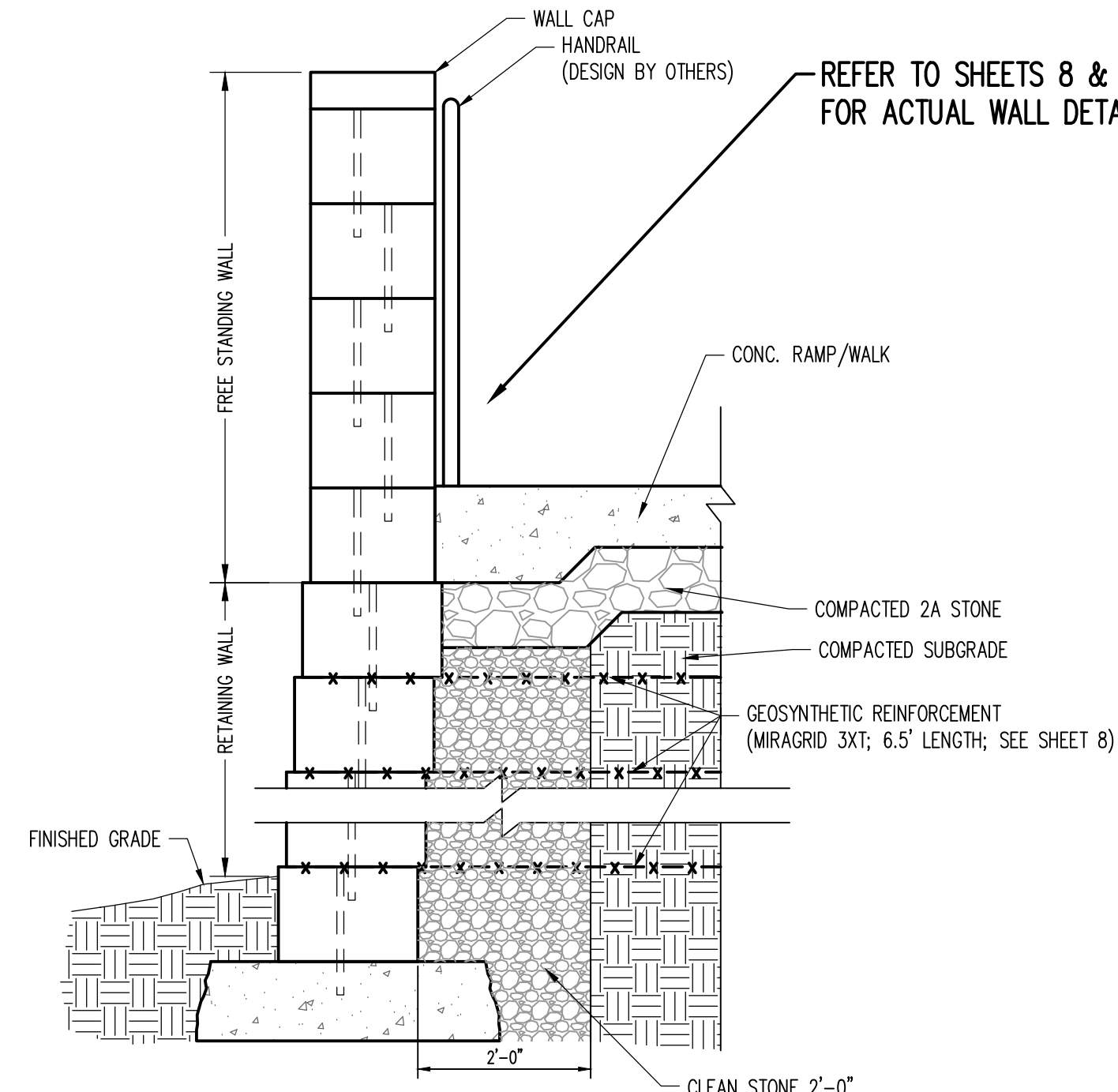
ALUMINUM RAILING SPECIFICATIONS

- MANUFACTURER: ALUMINUM FENCE SPECIALISTS, 26 TRUMAN STREET, PALMIRA PA 17078, PHONE: 1-888-867-7955, WWW.ALUMINUMFENCESPECIALISTS.COM
- MODEL NUMBER: SIGNATURE RAILING, UAR 250 3 RAIL W/ MADISON HANDRAIL TOP
- FINISH: COLOR ELECTED BY OWNER, POLYESTER TOG POWDER COATING

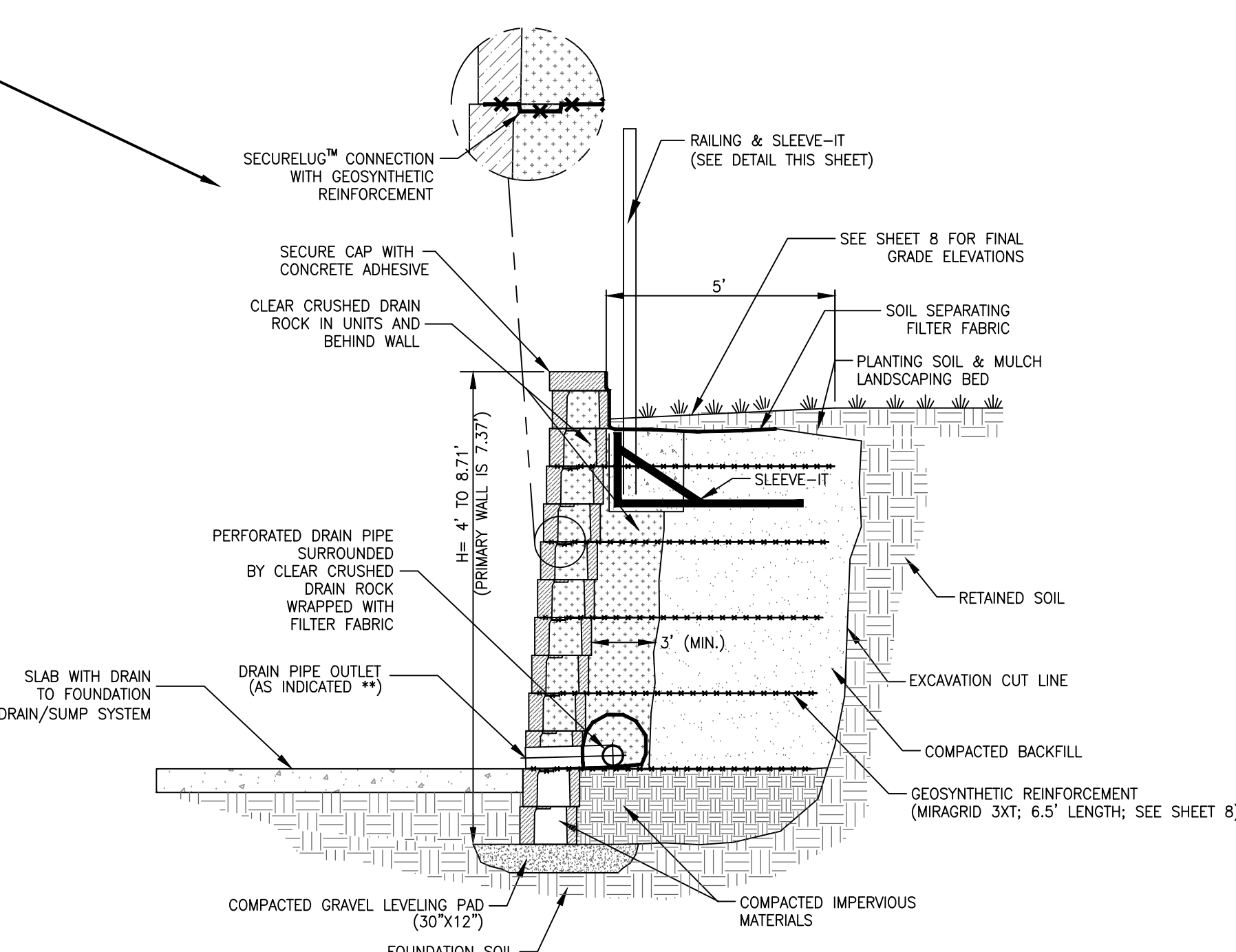


DETAIL OF FENCE POST INSTALLATION USING SLEEVE-IT 1224R
NOTE: FENCING SYSTEMS APPROVED FOR USE WITH SLEEVE-IT 1224R ARE LIMITED TO THE FOLLOWING HEIGHTS: PRIVACY - UP TO 6 FT (WOODEN PVC, METAL), POST SIZE 4"x4" MAX. SEE FENCE DETAIL THIS SHEET.
FOR MORE INFORMATION ON SLEEVE-IT CONTACT STRATA SYSTEMS

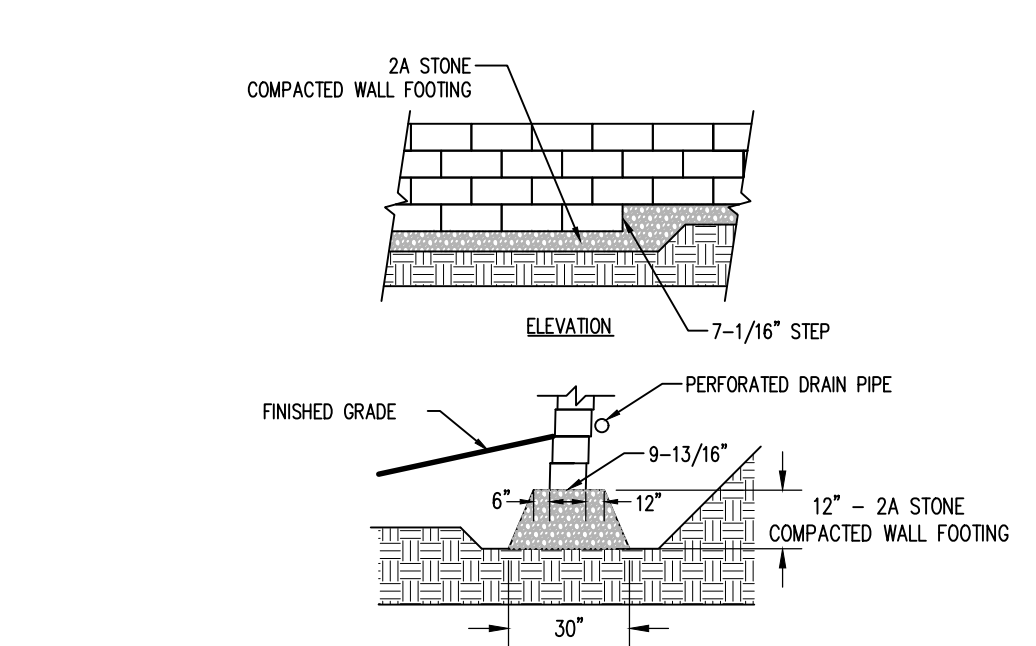
SLEEVE-IT DETAIL
NOT TO SCALE



COMBINATION RETAINING/
FREE STANDING WALL
NOT TO SCALE

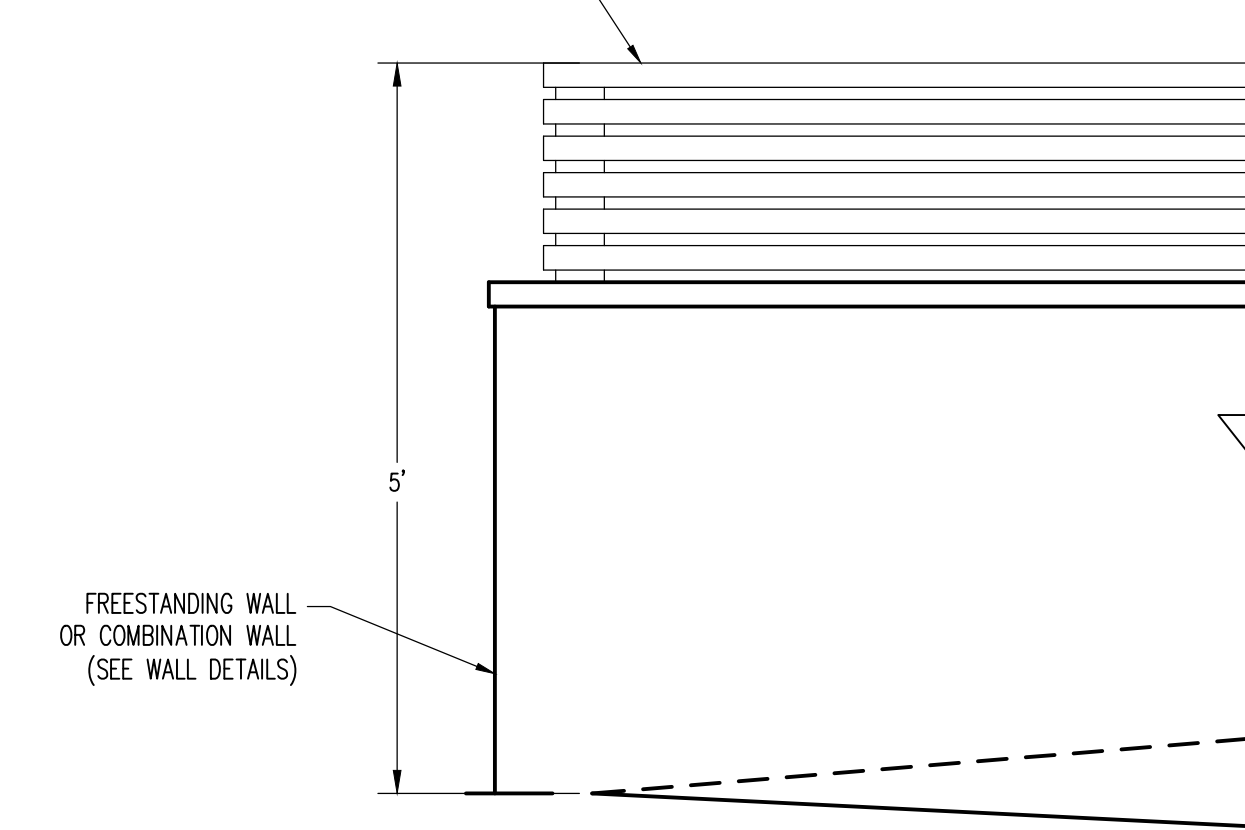


RETAINING WALL
NOT TO SCALE

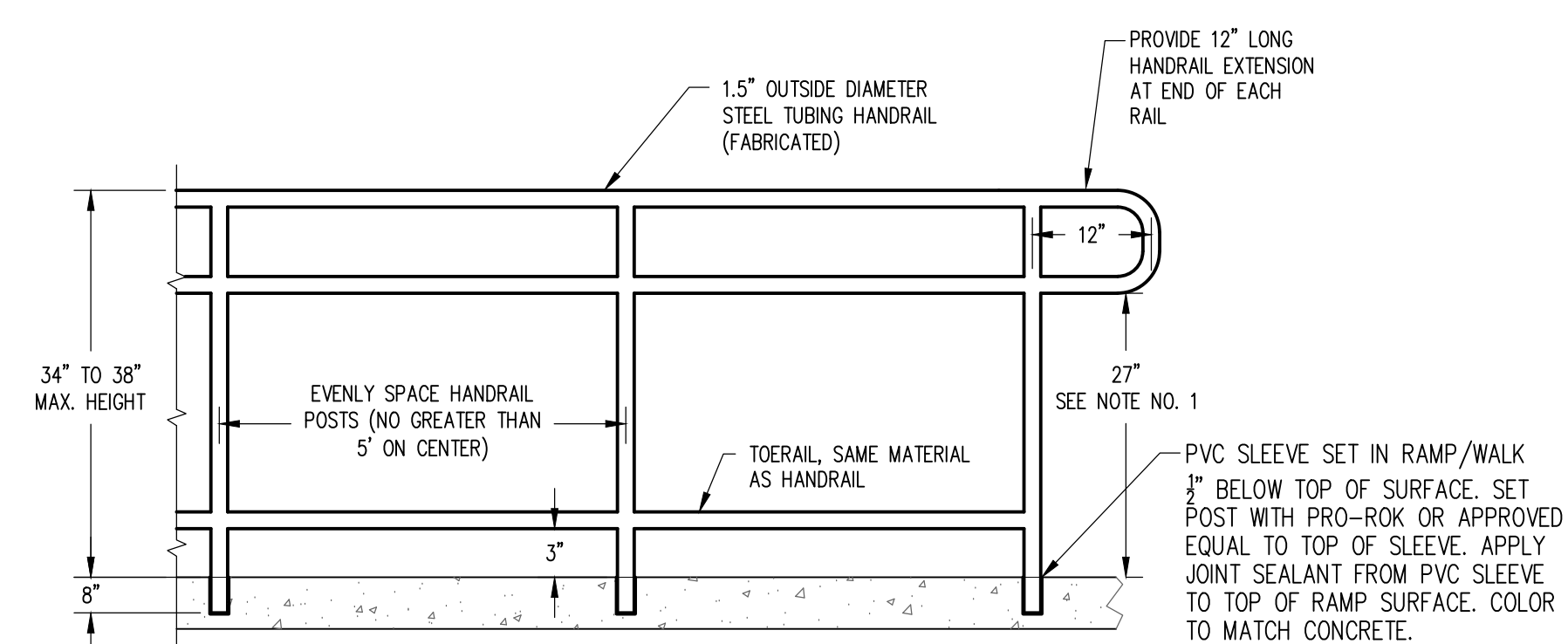


COMPACTED WALL FOOTING (TYP.)
NOT TO SCALE

1" x 2" CEDAR PLANK (STAINED AND SEALED) RUNNING HORIZONTALLY WITH 1" REVEALS BETWEEN PLANKS. MOUNT TO 3" SQUARE POST LOCATED 4" O.C. MAXIMUM. POST SHALL BE PRIMED AND PAINTED. COLORS OF PAINT AND STAIN TO BE SELECTED BY OWNER.



WALL - TOP SCREEN FENCE
NOT TO SCALE



RAMP HANDRAIL DETAIL
NOT TO SCALE

- NOTES:
- ALL HANDRAILS, HANDRAIL TERMINATIONS, AND HORIZONTAL AND VERTICAL CLEARANCES SHALL COMPLY WITH THE PROVISIONS OF THE GOVERNING EDITIONS OF THE INTERNATIONAL BUILDING CODE, AND WITH ICC/ANSI 117.1. THEY SHALL BE ABLE TO RESIST A LOAD OF 50 P.L.F. APPLIED IN ANY DIRECTION AT THE TOP AND BE ABLE TO SEPARATELY RESIST A SINGLE LOAD OF 200 POUNDS APPLIED IN ANY DIRECTION AT THE TOP.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING HANDRAIL COMPLIANT WITH THE GOVERNING CODES.
 - CORE DRILL OR SURFACE MOUNT ANCHORING METHODS ARE ACCEPTABLE CONDITIONALLY UPON MEETING CODE REQUIREMENTS.
 - SEE DIVISION 9 SPECIFICATIONS FINISHES, FOR PAINTING REQUIREMENTS.
 - SEE HANDRAIL AND RAILING SURFACE TREATMENT AT CONCRETE STARWAY DETAIL FOR HANDRAIL TREATMENT.

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Seal of Chad Daniel Stafford, Engineer PE-073273, Commonwealth of Pennsylvania.

Designer	MAT
Draftsman	MJA
Proj/Manager	MAT
Surveyor	BRK
Perimeter Ok	
Book	527 Pg 2
File	8.A - WALL DETAILS
Layout	WALL DETAILS
1-2-19	PER TOWNSHIP COMMENTS
11-30-18	PER TOWNSHIP COMMENTS
Date	Description
	REVISIONS

KING WEALTH STRATEGIES
 FERGUSON TOWNSHIP
 CENTRE COUNTY
 PENNSYLVANIA

PRELIMINARY/FINAL
 LAND DEVELOPMENT
 PLAN

PROJECT NO.	17228
DATE	JUNE 26, 2018
SCALE	1"=10'
SHEET NO.	8.A of 12

EROSION & SEDIMENTATION CONTROL LEGEND

- LIMIT OF DISTURBANCE (16,868 S.F. ±)
- CONSTRUCTION ENTRANCE
- TOPSOIL STOCKPILE
- SS12-SS12 12" SILT SOCK
- INLET PROTECTION (TYPE M-FILTER BAG)

SURVEY FEATURES LEGEND

- Property Line, Lot Line or Right of Way Line
- Adjoining Property Line
- Building Setback Line
- Easement Line
- Roadway Center Line
- Municipal Boundary
- Zoning Boundary
- Property Corner Found
- Property Corner To Be Set
- PennTerra Control Point
- Project Benchmark

EXISTING FEATURES LEGEND

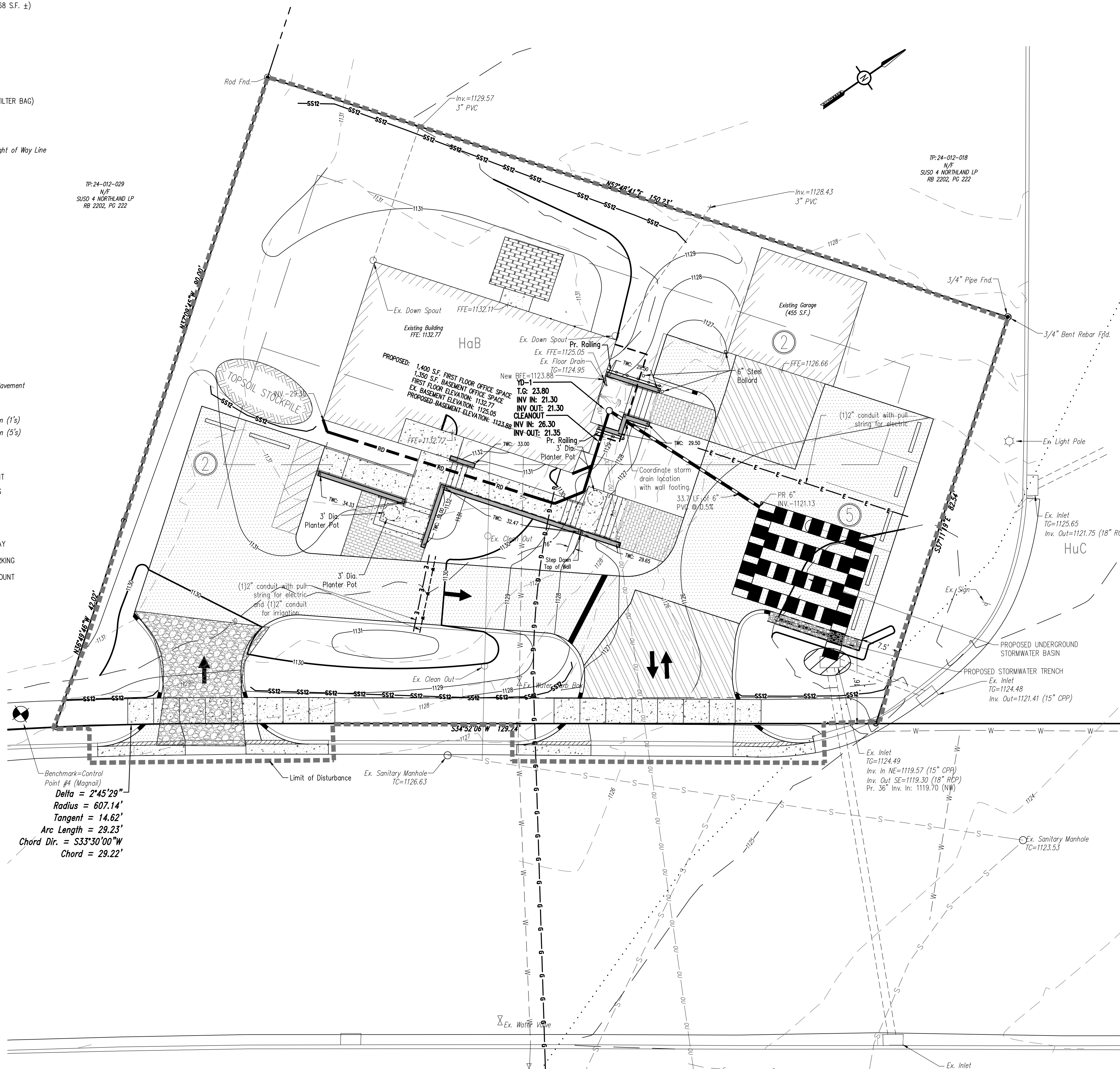
- EXISTING BUILDING Existing Building
- EXISTING PAVERS Existing Pavers
- Existing Curbing & Edge of Pavement
- Existing Concrete Sidewalk
- Existing Fence
- Existing Contours w/ Elevation (1's)
- Existing Contours w/ Elevation (5's)

PROPOSED FEATURES LEGEND

- PROPOSED EDGE OF PAVEMENT
- PROPOSED CONCRETE PAVERS
- PROPOSED CONCRETE WALK
- PROPOSED PAVEMENT
- PROPOSED PAVEMENT OVERLAY
- PROPOSED HANDICAPPED PARKING
- PROPOSED PARKING STALL COUNT

SOILS LEGEND

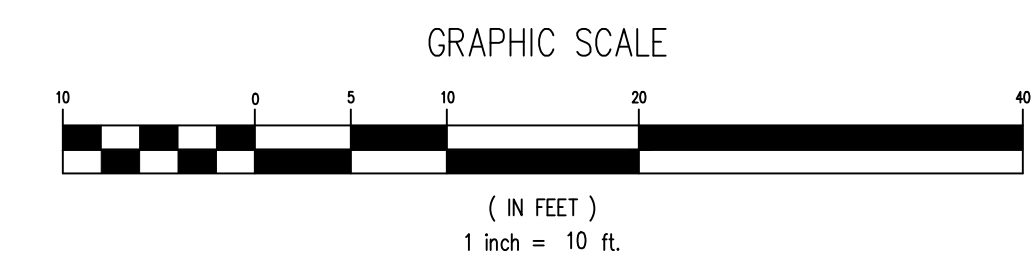
Soil cover on the site consists of:
 HaB - Hagerstown Silt Loam, 3-8% Slopes
 HuC - Hubersburg Silt Loam, 8-15% Slopes



Benchmark=Control Point #4 (Magnolia)
 Delta = 2°45'29"
 Radius = 607.14'
 Tangent = 14.62'
 Arc Length = 29.23'
 Chord Dir. = S33°30'00"W
 Chord = 29.22'

Standard Erosion and Sediment Control Plan Notes

1. All earth disturbances, including clearing and grubbing as well as cuts and fills shall be done in accordance with the approved E&S plan. A copy of the approved drawings (stamped, signed and dated by the reviewing agency) must be available at the project site at all times. The reviewing agency shall be notified of any changes to the approved plan prior to implementation of those changes. The reviewing agency may require a written submittal of those changes for review and approval at its discretion.
2. At least 7 days prior to starting any earth disturbance activities, including clearing and grubbing, the owner and/or operator shall invite all contractors, the landowner, appropriate municipal officials, the E&S plan preparer, the PSCM plan preparer, the licensed professional responsible for oversight of critical stages of implementation of the PSCM plan, and a representative from the Centre County Conservation District to an on-site preconstruction meeting.
3. At least 3 days prior to starting any earth disturbance activities, or expanding into an area previously unmarked, the Pennsylvania One Call System Inc. shall be notified at 1-800-242-1776 for the location of existing underground utilities.
4. All earth disturbance activities shall proceed in accordance with the sequence provided on the plan drawings. Deviation from that sequence must be approved in writing from the township, local conservation district or by the Department prior to implementation.
5. Areas to be filled are to be cleared, grubbed, and stripped of topsoil to remove trees, vegetation, roots and other objectionable material.
6. Clearing, grubbing, and topsoil stripping shall be limited to those areas described in each stage of the construction sequence. General site clearing, grubbing and topsoil stripping may not commence in any stage or phase of the project until the E&S BMPs specified by the BMP sequence for that stage or phase have been installed and are functioning as described in this E&S plan.
7. At no time shall construction vehicles be allowed to enter areas outside the limit of disturbance boundaries shown on the plan maps. These areas must be clearly marked and fenced off before clearing and grubbing operations begin.
8. Topsoil required for the establishment of vegetation shall be stockpiled at the location(s) shown on the plan maps(s) in the amount necessary to complete the finish grading of all exposed areas that are to be stabilized by vegetation. Each stockpile shall be protected in the manner shown on the plan drawings. Stockpile heights shall not exceed 35 feet. Stockpile slopes shall be 2H:1V or flatter.
9. Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the operator shall implement appropriate best management practices to minimize the potential for erosion and sediment pollution and notify the local conservation district and/or the regional office of the Department.
10. All building materials and wastes shall be removed from the site and recycled or disposed of in accordance with the Department's Solid Waste Management Regulations at 25 Pa. Code 260.1 et seq., 271.1, and 287.1 et seq. No building materials or wastes or unused building materials shall be burned, buried, dumped, or discharged at the site.
11. All off-site waste and borrow areas must have an E&S plan approved by the local conservation district or the Department fully implemented prior to being activated.
12. The contractor is responsible for ensuring that any material brought on site is clean fill. Form FP-001 must be retained by the property owner for any fill material affected by a spill or release of a regulated substance but qualifying as clean fill due to analytical testing.
13. Until the site is stabilized, all erosion and sediment BMPs shall be maintained properly. Maintenance shall include inspections of all erosion and sediment BMPs after each runoff event and on a weekly basis. All preventative and remedial maintenance work, including clean out, repair, replacement, regrading, reseed, reseed, and reseed, must be performed immediately. If the E&S BMPs fail to perform as expected, replacement BMPs, or modifications of those installed will be required.
14. A log showing dates that E&S BMPs were inspected as well as any deficiencies found and the date they were corrected shall be maintained on the site and be made available to regulatory agency officials at the time of inspection.
15. Sediment tracked onto any public roadway or sidewalk shall be returned to the construction site by the end of each work day and disposed in the manner described in this plan. In no case shall the sediment be washed, shoveled, or swept into any roadside ditch, storm sewer, or surface water.
16. All sediment removed from BMPs shall be disposed of in the manner described on the plan drawings.
17. Areas which are to be topsoiled shall be scarified to a minimum depth of 3 to 5 inches - 6 to 12 inches on compacted soils - prior to placement of topsoil. Areas to be vegetated shall have a minimum 4 inches of topsoil in place prior to seeding and mulching. Full outlays shall have a minimum of 2 inches of topsoil.
18. All fills shall be compacted as required to reduce erosion, slippage, settlement, subsidence or other related problems. Fill intended to support buildings, structures and conduits, etc. shall be compacted in accordance with local requirements or codes.
19. All earthen fills shall be placed in compacted layers not to exceed 9 inches in thickness.
20. Fill materials shall be free of frozen particles, brush, roots, sod, or other foreign or objectionable materials that would interfere with or prevent construction of satisfactory fills.
21. Frozen materials or soil, mucky, or highly compressible materials shall not be incorporated into fills.
22. Fill shall not be placed on saturated or frozen surfaces.
23. Seeps or springs encountered during construction shall be handled in accordance with the standard and specification for subsurface drain or other approved method.
24. All graded areas shall be permanently stabilized immediately upon reaching finished grade. Cut slopes in competent bedrock and rock fills need not be vegetated. Seeded areas within 50 feet of a surface water, or as otherwise shown on the plan drawings, shall be blanketed according to the standards of this plan.
25. Immediately after earth disturbance activities cease in any area or subarea of the project, the operator shall stabilize all disturbed areas. During non-germinating months, mulch or protective blanketing shall be applied as described in the plan. Areas not at finished grade, which will be reactivated within 1 year, may be stabilized in accordance with the temporary stabilization specifications. Those areas which will not be reactivated within 1 year shall be stabilized in accordance with the permanent stabilization specifications.
26. Permanent stabilization is defined as a minimum uniform, perennial 70% vegetative cover or other permanent non-vegetative cover with a density sufficient to resist accelerated erosion. Cut and fill slopes shall be capable of resisting failure due to slumping, sliding, or other movements.
27. E&S BMPs shall remain functional as such until all areas tributary to them are permanently stabilized or until they are replaced by another BMP approved by the local conservation district or the Department.
28. Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operator shall contact the township and local conservation district for an inspection prior to removal/conversion of the E&S BMPs.
29. After final site stabilization has been achieved, temporary erosion and sediment BMPs must be removed or converted to permanent post construction stormwater management BMPs. Areas disturbed during removal or conversion of the BMPs shall be stabilized immediately. In order to ensure rapid revegetation of disturbed areas, such removal/conversions are to be done only during the germinating season.
30. Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operator shall contact the township and local conservation district to schedule a final inspection.
31. Failure to correctly install E&S BMPs, failure to prevent sediment-laden runoff from leaving the construction site, or failure to take immediate corrective action to resolve failure of E&S BMPs may result in administrative, civil, and/or criminal penalties being instituted by the Department as defined in Section 602 of the Pennsylvania Clean Streams Law. The Clean Streams Law provides for up to \$10,000 per day in civil penalties, up to \$10,000 in summary criminal penalties, and up to \$25,000 in misdemeanor criminal penalties for each violation.
32. Underground utilities cutting through any active channel shall be immediately backfilled and the channel restored to its original cross-section and protective lining. Any base flow within the channel shall be conveyed past the work area in the manner described in this plan until such restoration is complete.

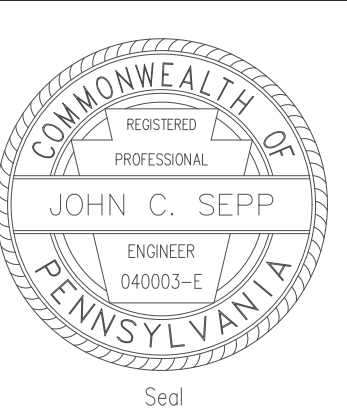


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DESIGNER: MAT
 DRAFTSMAN: MJA
 PROJ/MANAGER: MAT
 SURVEYOR: BRK
 PERIMETER CK:
 BOOK: 527, Pg: 2
 FILE: 9 - E&S
 EROSION & SEDIMENTATION CONTROL PLAN

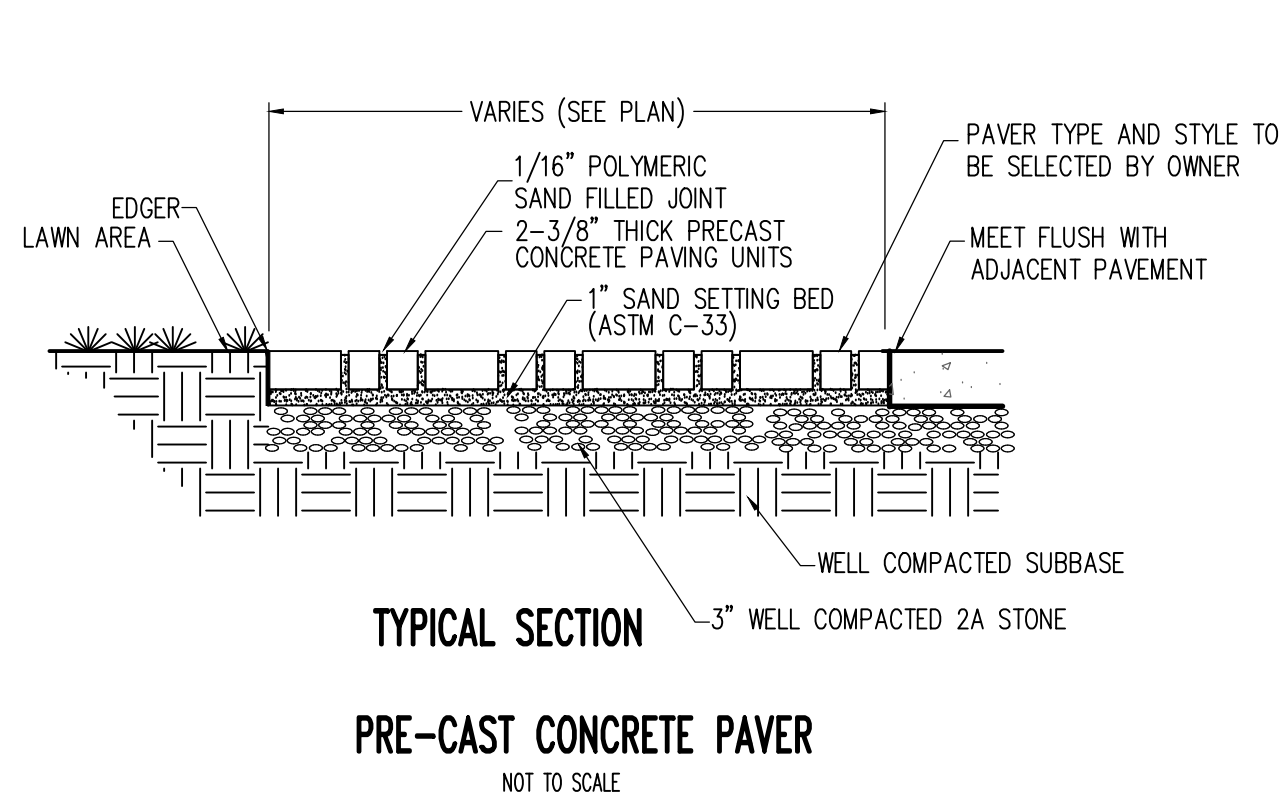
Date	Description	REVISIONS
11-29-19	PER TOWNSHIP COMMENTS	MJA
11-30-19	PER TOWNSHIP COMMENTS	MJA

KING WEALTH STRATEGIES
 FERGUSON TOWNSHIP
 CENTRE COUNTY
 PENNSYLVANIA

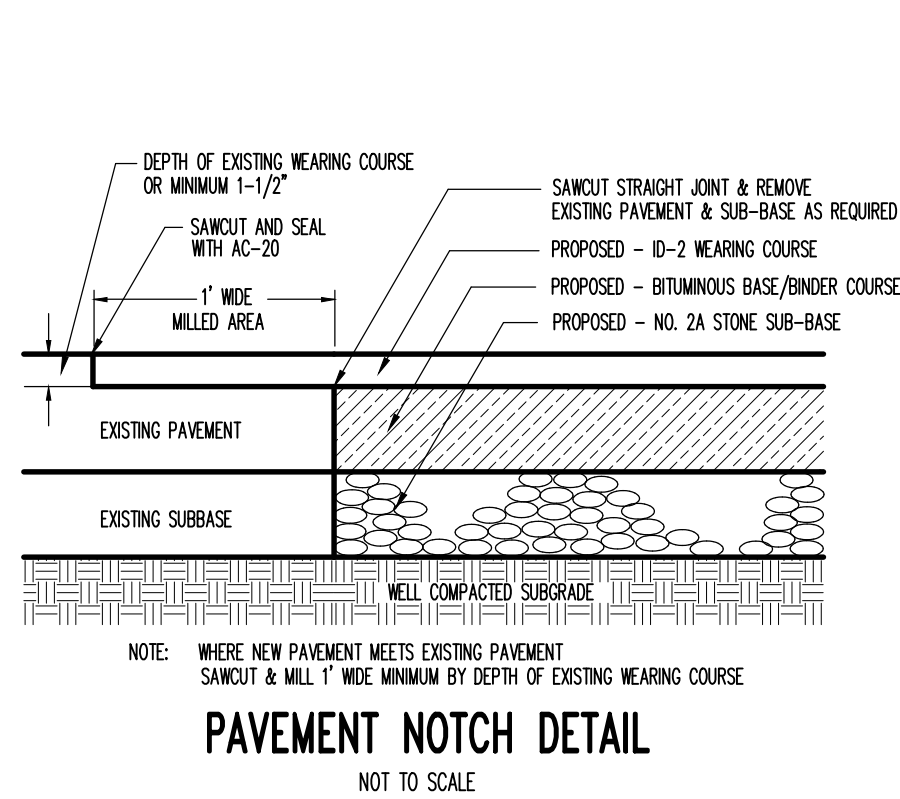
PRELIMINARY/FINAL LAND DEVELOPMENT PLAN

EROSION AND SEDIMENTATION CONTROL PLAN

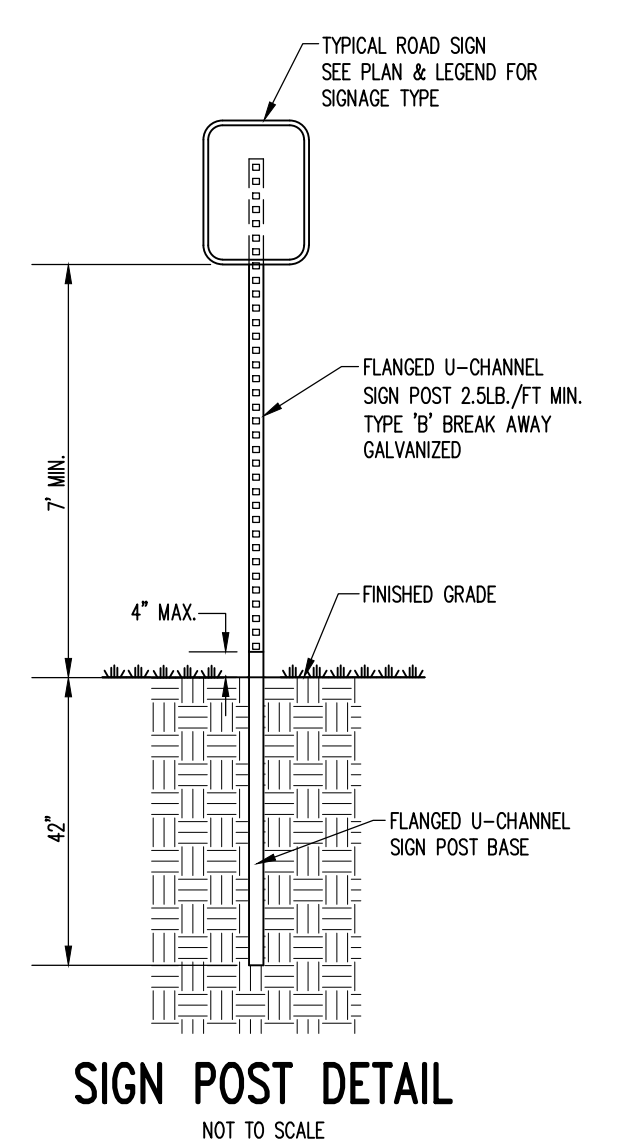
PROJECT NO. 17228
 DATE: JUNE 26, 2018
 SCALE: 1"=10'
 SHEET NO. 9 of 12



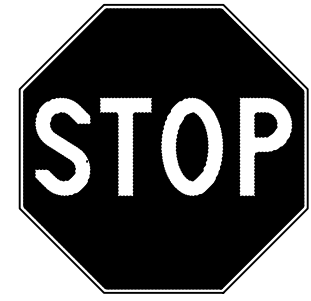
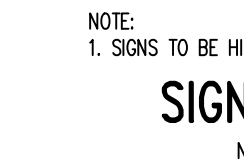
**TYPICAL SECTION
PRE-CAST CONCRETE PAVER**
NOT TO SCALE



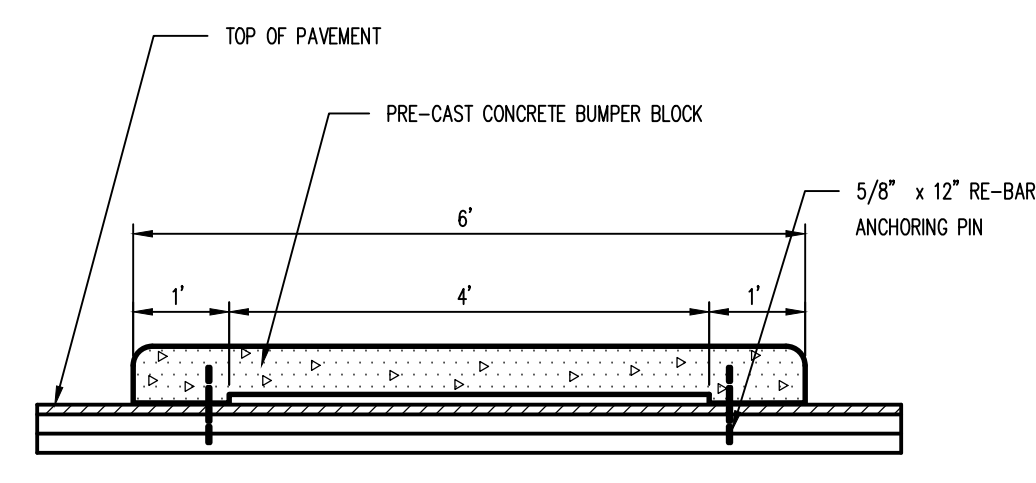
PAVEMENT NOTCH DETAIL
NOT TO SCALE



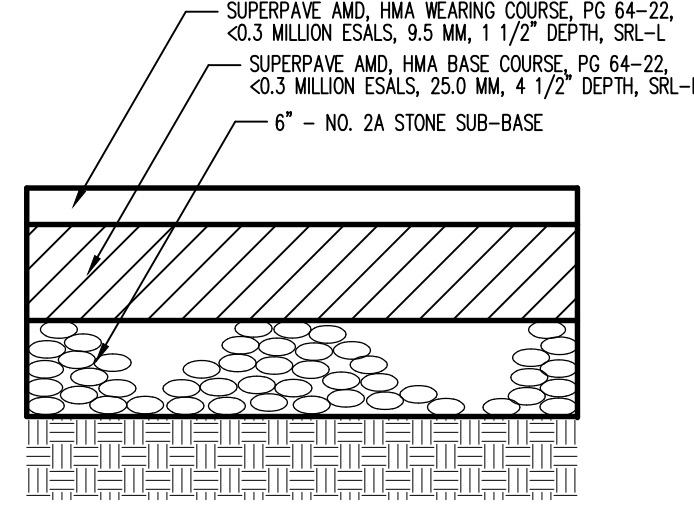
SIGN POST DETAIL
NOT TO SCALE



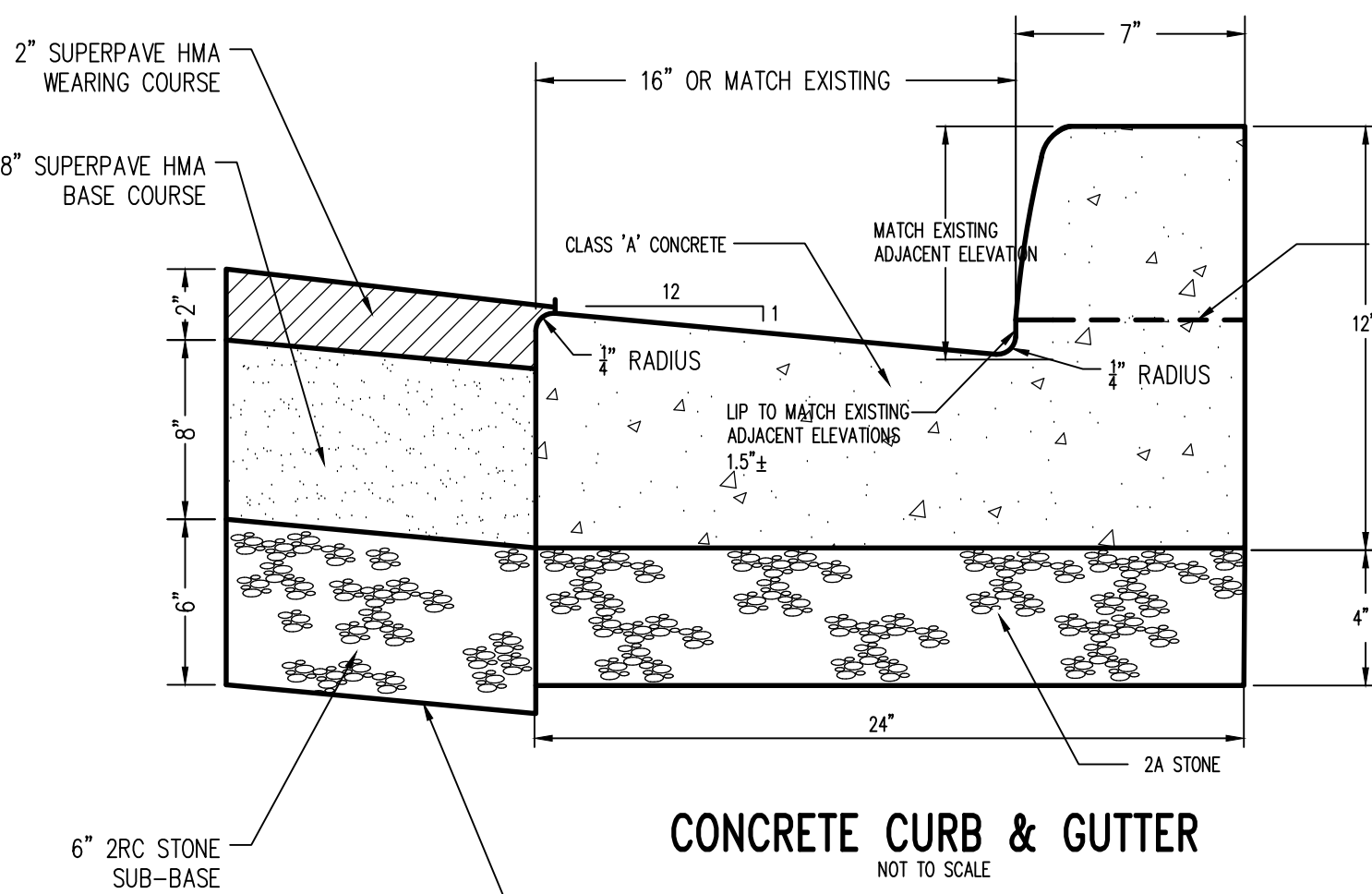
SIGN DETAILS
NOT TO SCALE



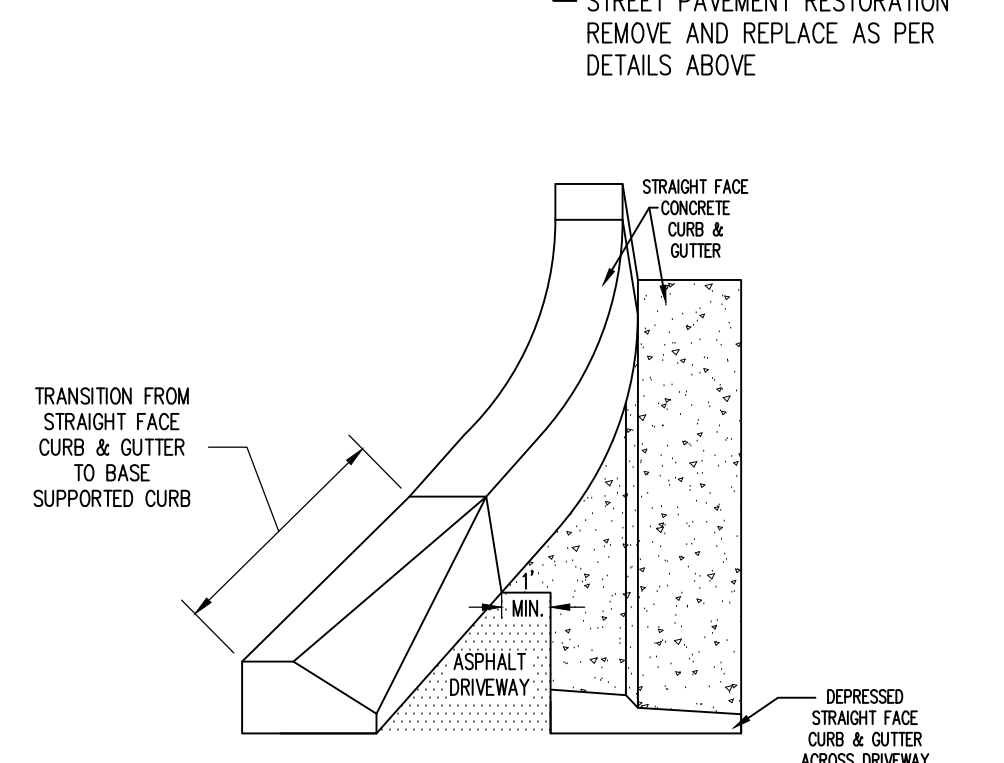
CONCRETE BUMPER BLOCK
NOT TO SCALE



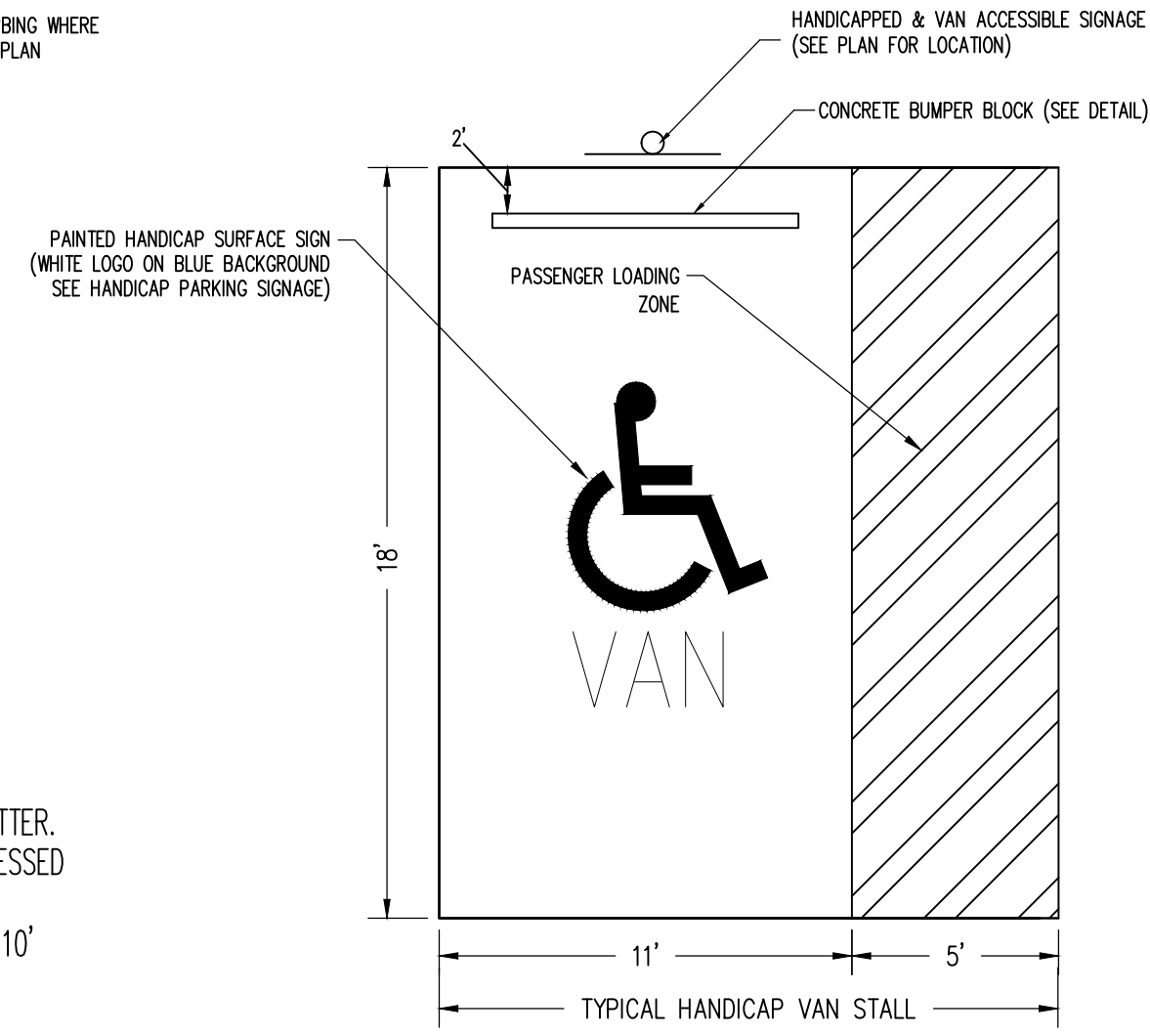
**PAVEMENT SECTION
PARKING LOT**
NOT TO SCALE



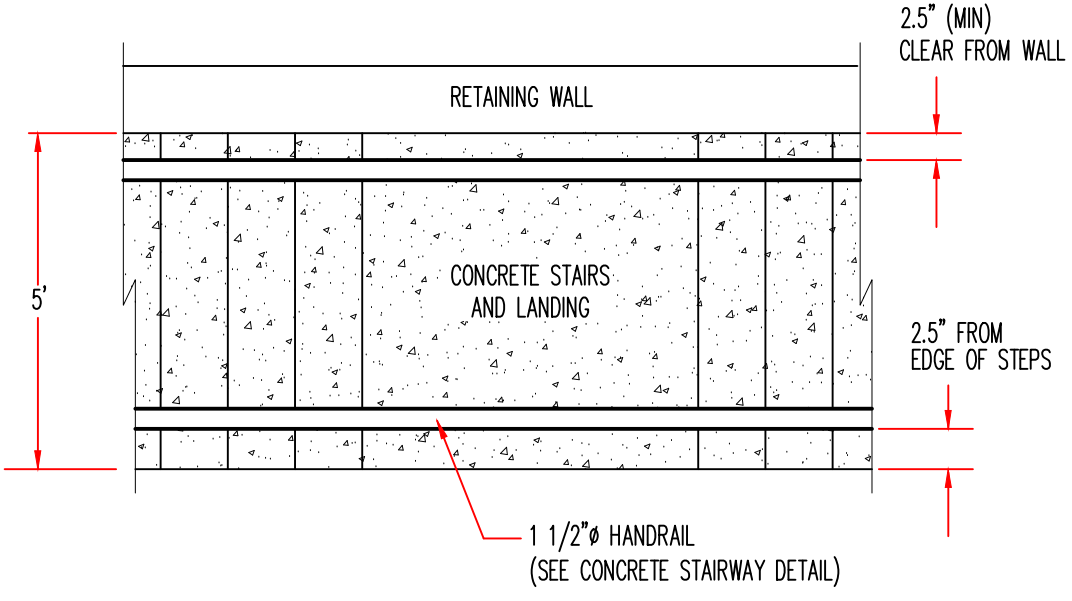
CONCRETE CURB & GUTTER
NOT TO SCALE



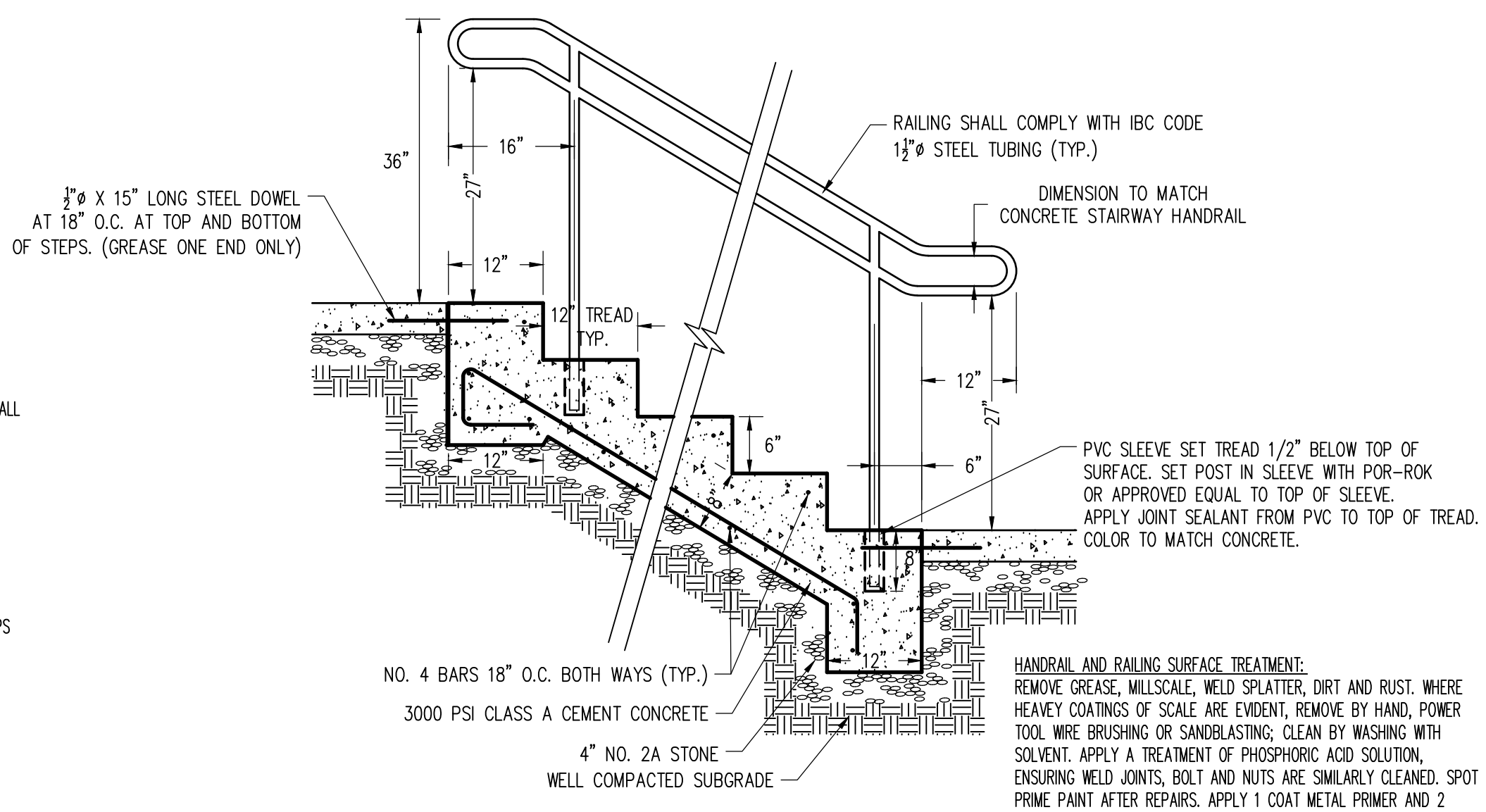
CURB TRANSITIONS AT DRIVEWAY
NOT TO SCALE



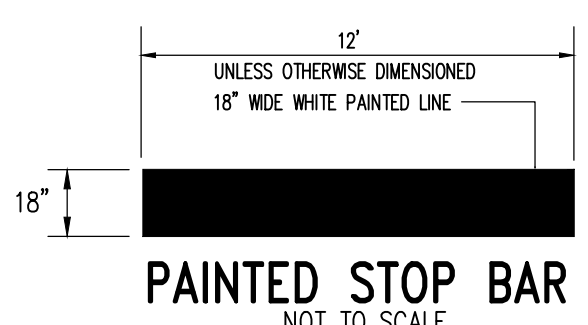
HANDICAP PARKING LAYOUT
SCALE: 1"=5'



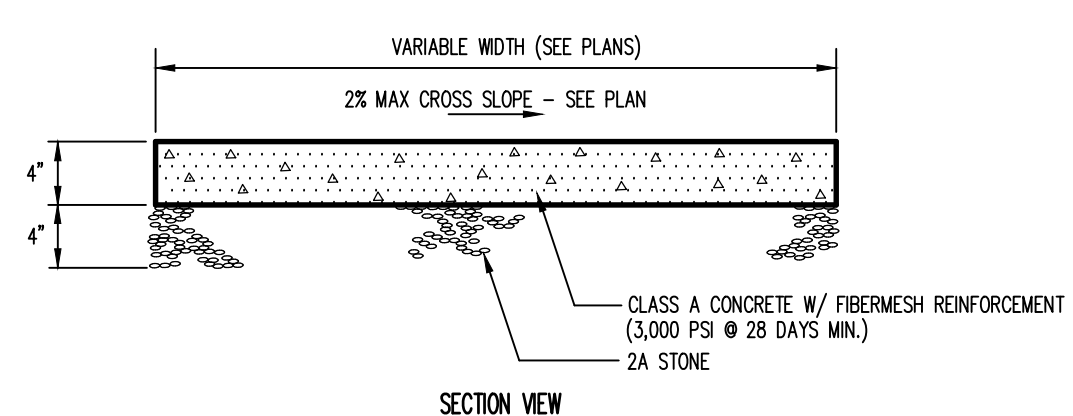
PLAN VIEW - STAIR HANDRAIL DETAIL
NOT TO SCALE



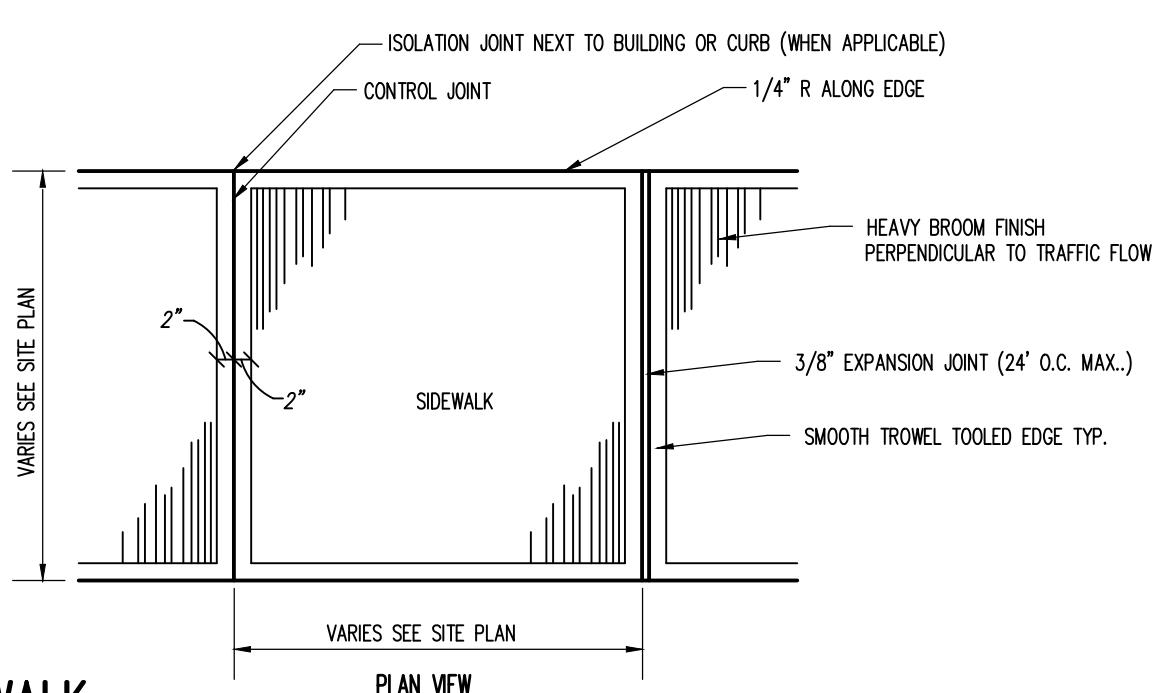
CONCRETE STAIRWAY DETAIL
NOT TO SCALE



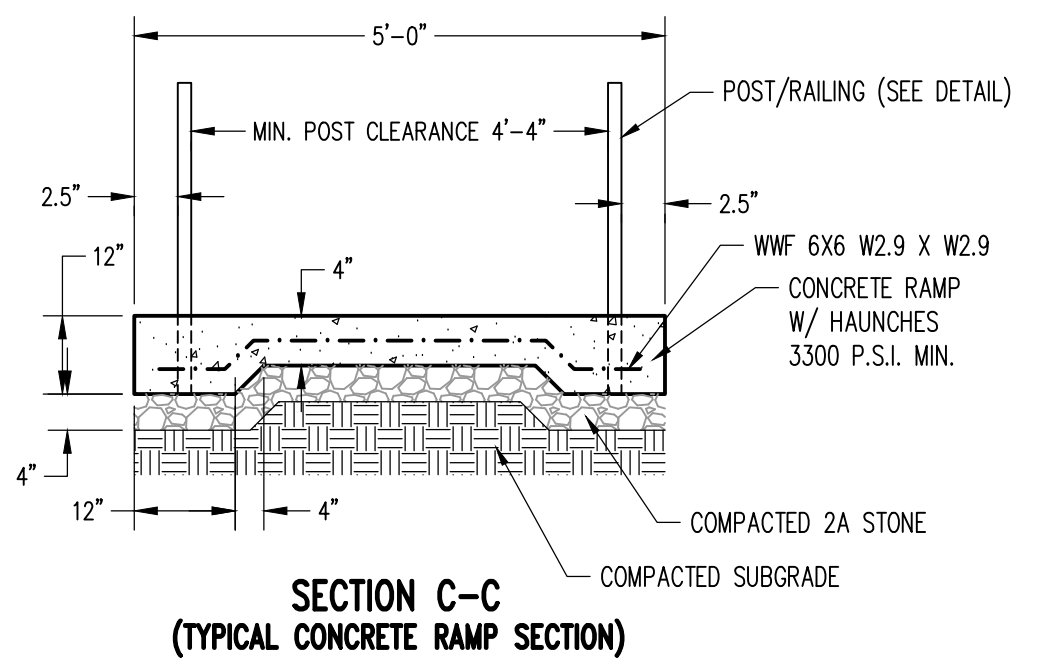
PAINTED STOP BAR
NOT TO SCALE



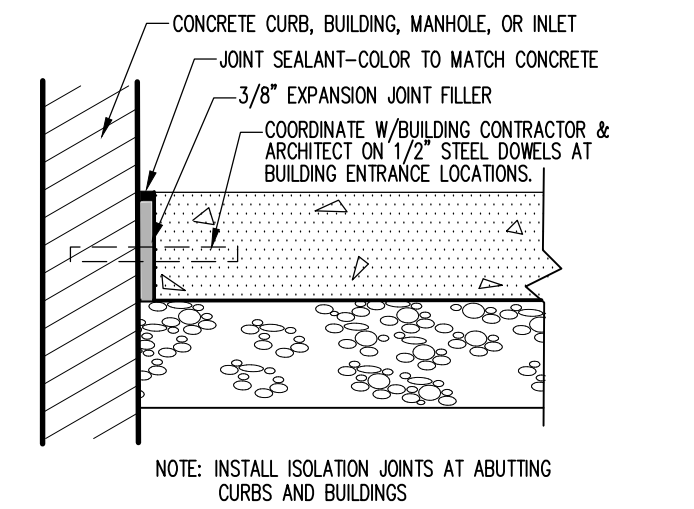
CEMENT CONCRETE SIDEWALK
NOT TO SCALE



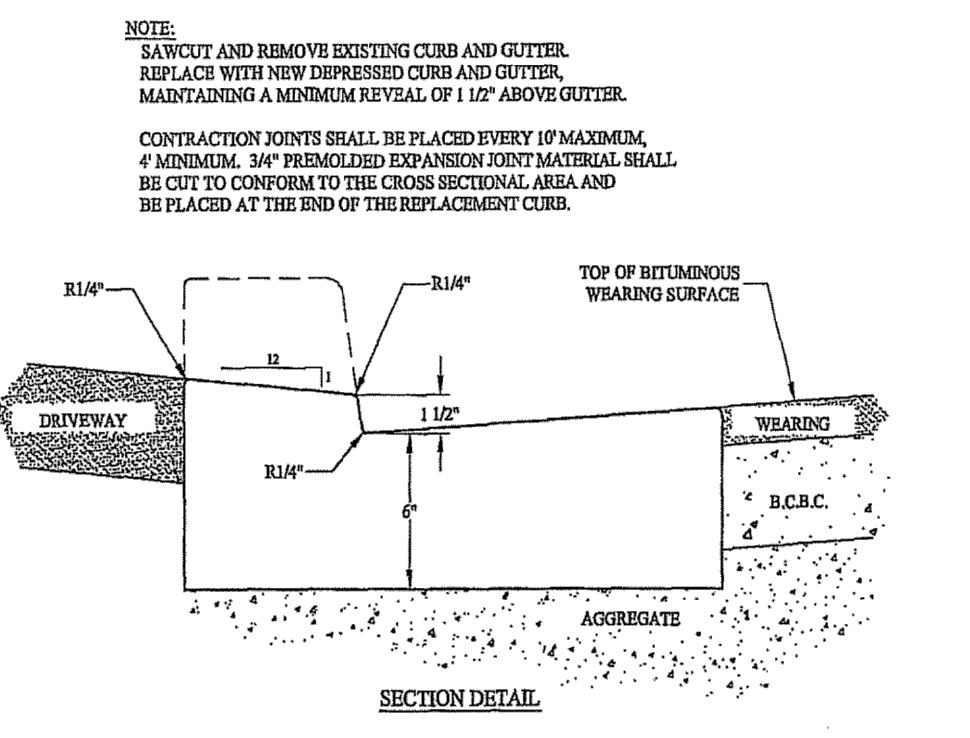
PLAN VIEW



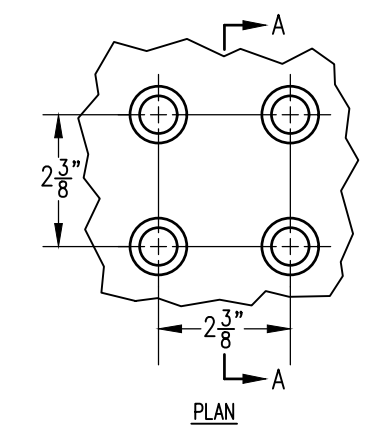
**SECTION C-C
(TYPICAL CONCRETE RAMP SECTION)**



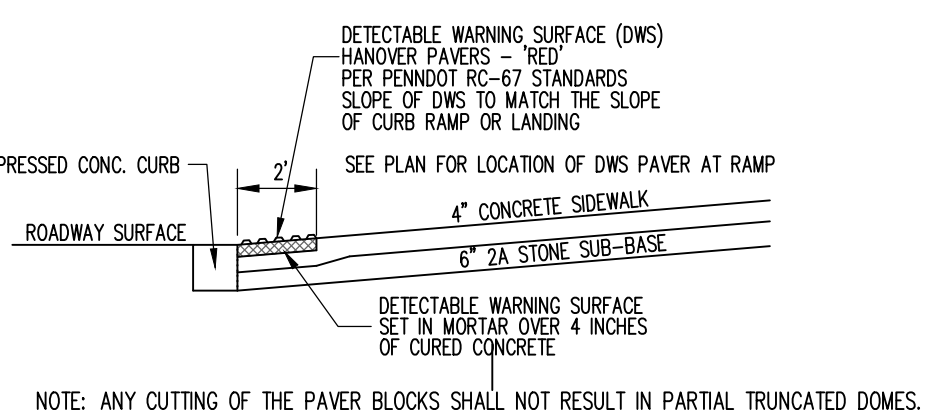
CONCRETE ISOLATION JOINT
NOT TO SCALE



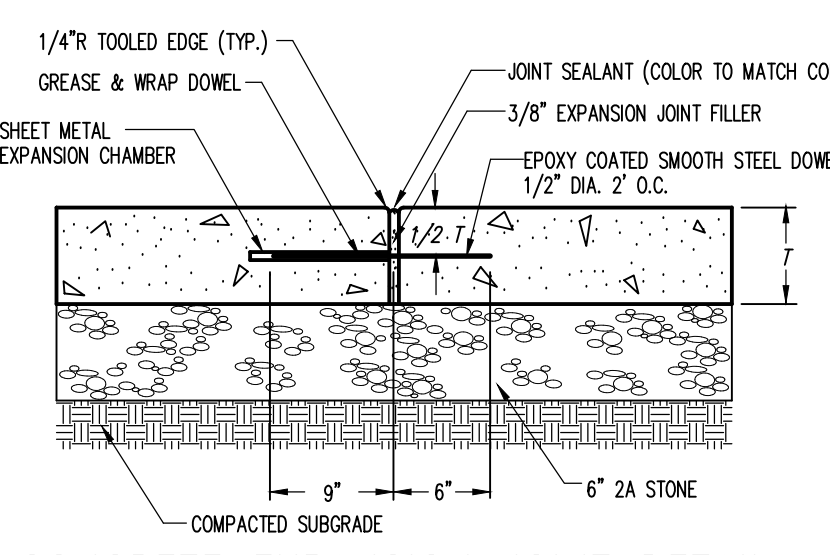
DEPRESSED STRAIGHT FACE CONCRETE CURB & GUTTER



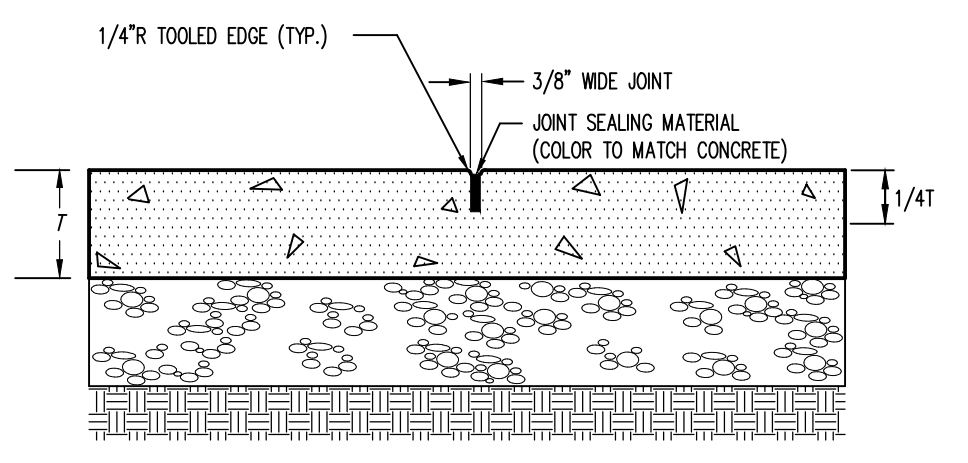
**DETECTABLE WARNING SURFACE/
RAMP CROSS SECTION**
NOT TO SCALE



NOTE: ANY CUTTING OF THE PAVER BLOCKS SHALL NOT RESULT IN PARTIAL TRUNCATED DOMES.



CONCRETE EXPANSION JOINT DETAIL
NOT TO SCALE



CONCRETE CONTROL JOINT
NOT TO SCALE

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REGISTERED PROFESSIONAL ENGINEER
JOHN C. SEPP
040003-E

Designer	MAT
Draftsman	MJA
Proj/Manager	MAT
Surveyor	BRK
Perimeter Ck.	
Book	527 Pg 2
File	11 - DETAILS
Layout	DETAILS

Date	Description
1-2-19	PER TOWNSHIP COMMENTS
11-30-18	PER TOWNSHIP COMMENTS

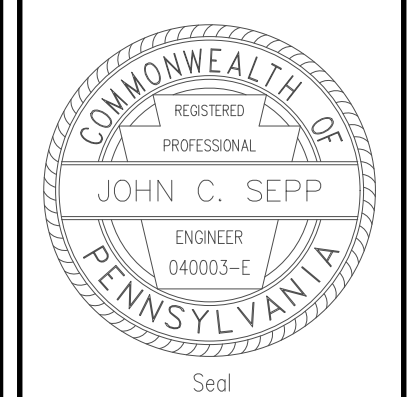
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FERGUSON TOWNSHIP
CENTRE COUNTY
PENNSYLVANIA

PRELIMINARY/FINAL
LAND DEVELOPMENT
PLAN

PROJECT NO.	17228
DATE	JUNE 26, 2018
SCALE	1"=10'
SHEET NO.	11 OF 12

P:\Metro\2017\17228\Design\plot (final) plans\11 - DETAILS.dwg, 1/22/2018 9:19:44 AM, 1:1



Seal

Designer: MAT
Draftsman: MJA
Proj Manager: MAT
Surveyor: BRK
Perimeter Ck:
Book: 527 Pg: 2
File: 12 - SWM-DETAILS
Layout: DETAILS

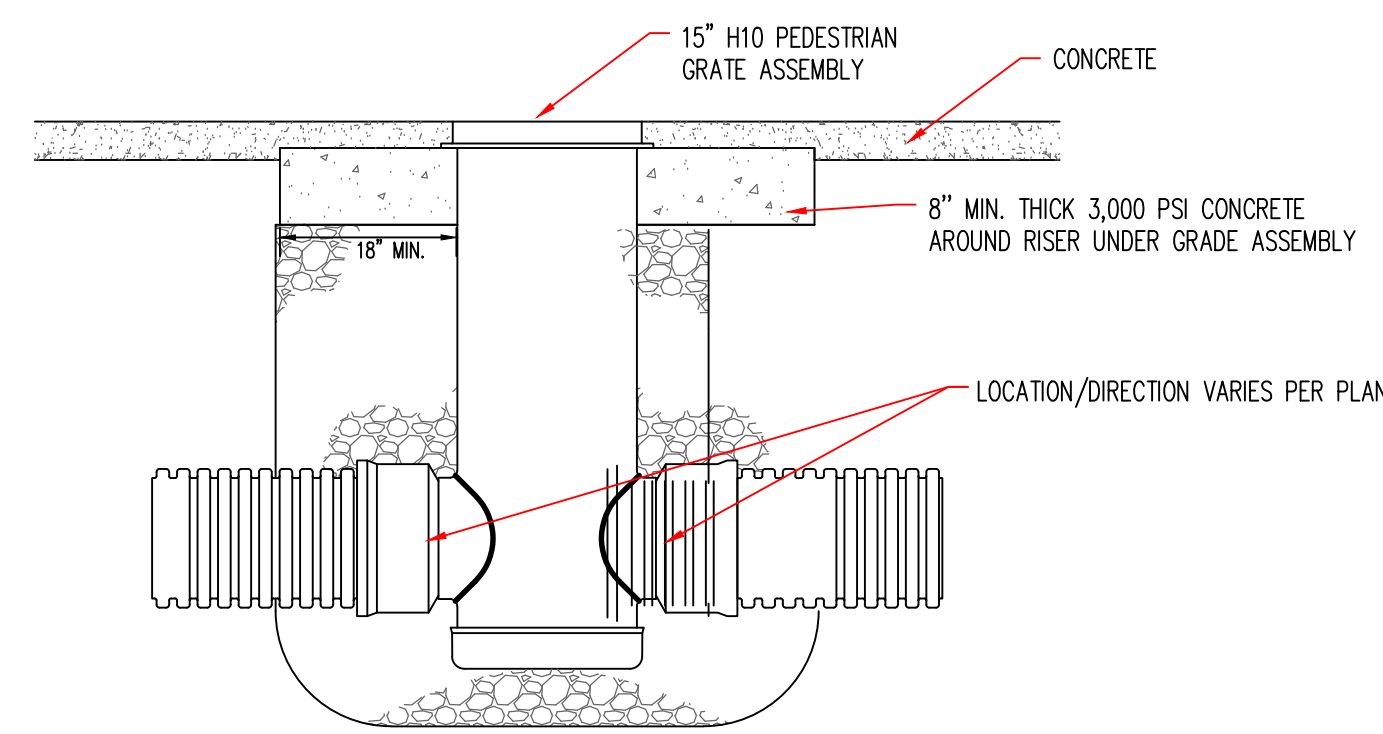
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MJA
11-30-18 PER TOWNSHIP COMMENTS
MJA
Date:
Description:
REVISIONS

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STRATEGIES
FERGUSON TOWNSHIP
CENTRE COUNTY
PENNSYLVANIA

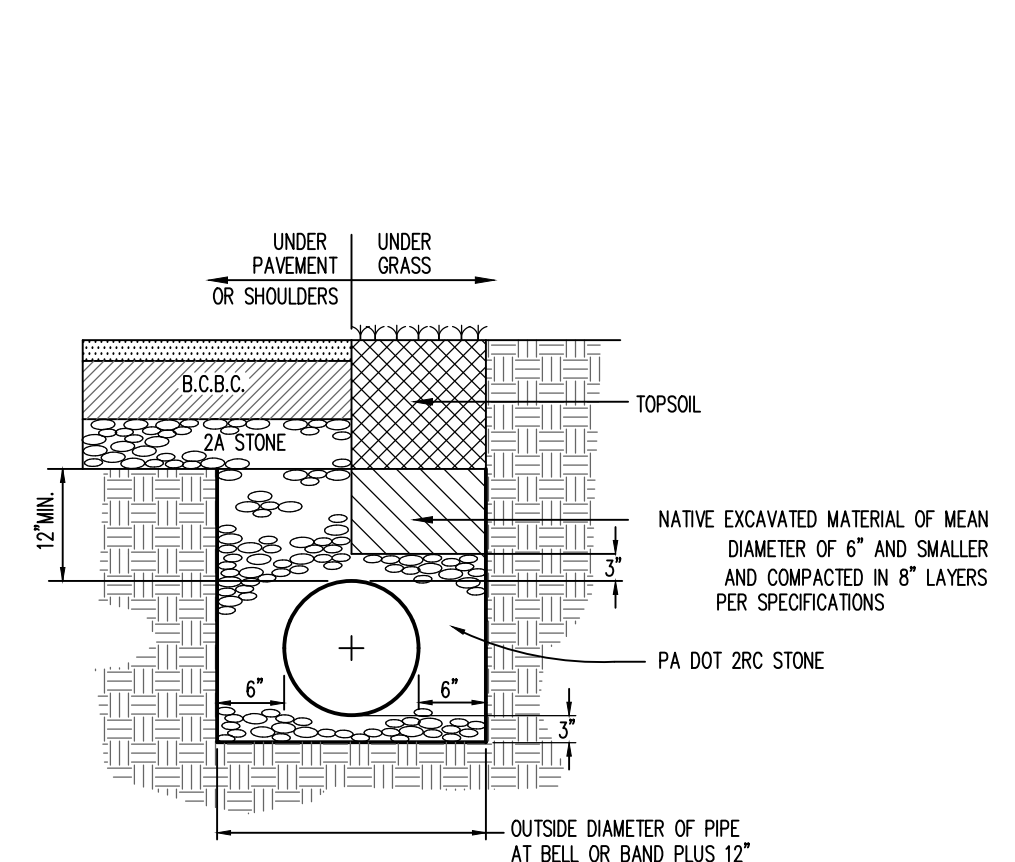
PRELIMINARY/FINAL
LAND DEVELOPMENT
PLAN

STORMWATER
MANAGEMENT
DETAILS

PROJECT NO.
17228
DATE
JUNE 26, 2018
SCALE SHEET NO.
1"=10' **12** of 12

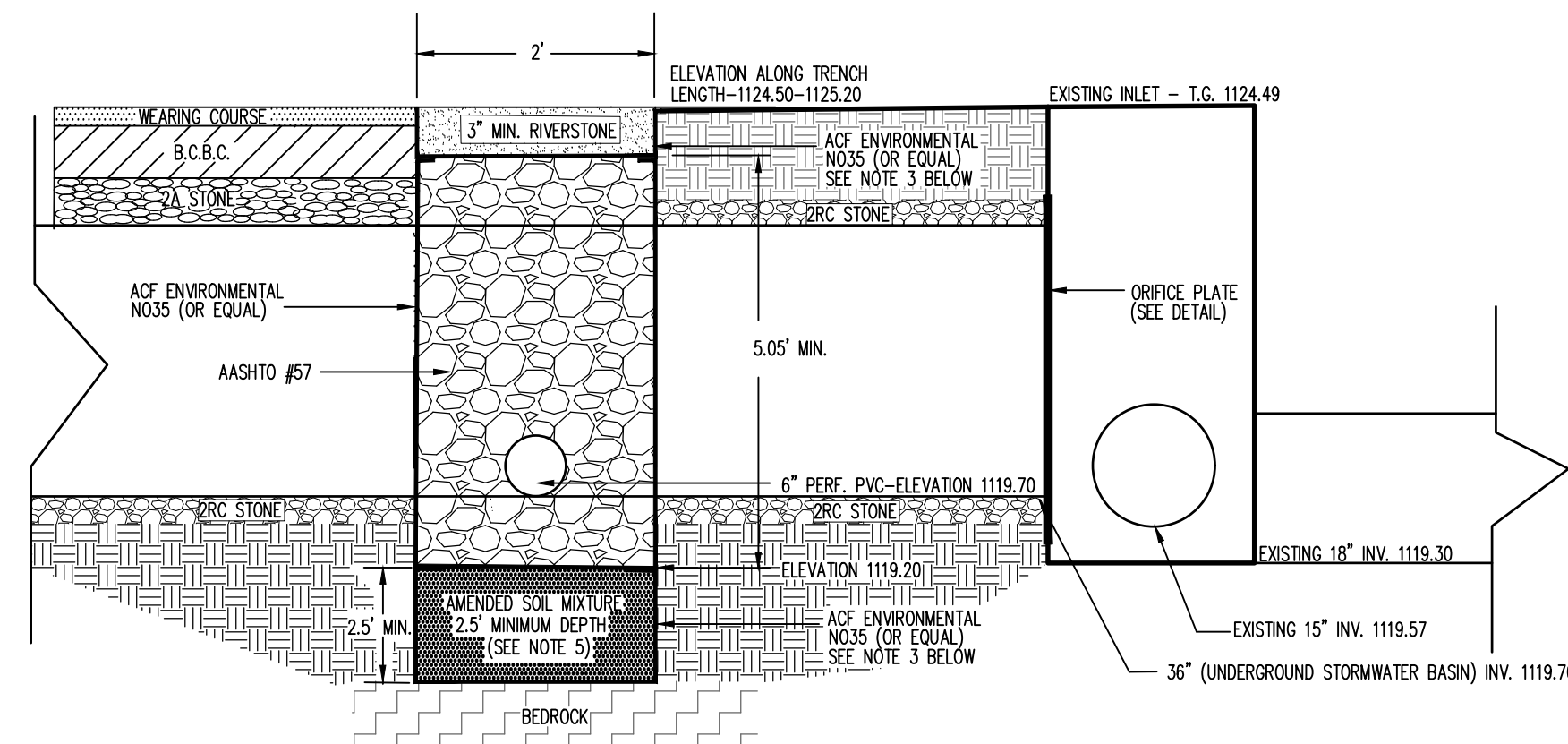


NYLOPLAST DRAIN BASIN
NOT TO SCALE



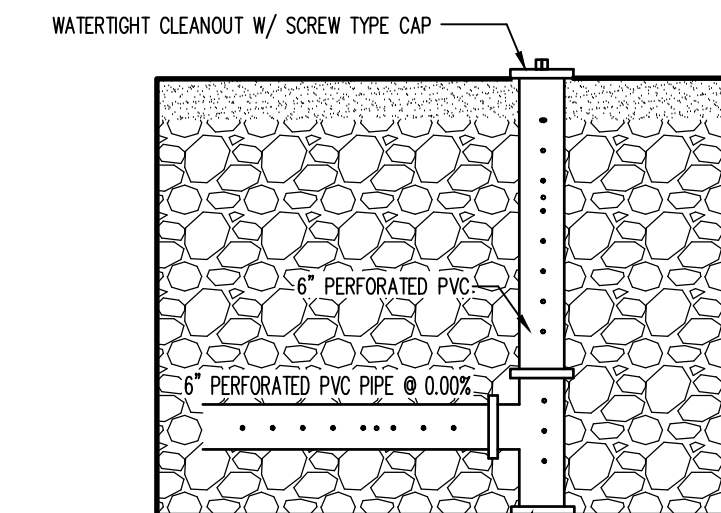
NOTE: ALL HDPE PIPE SHALL HAVE A SMOOTH LINED INTERIOR WALL
TRENCHING, BEDDING AND BACKFILLING REQUIREMENTS AND MATERIALS
SHALL CONFORM TO PENNDOT PUBLICATION 408 SPECIFICATIONS

STORMSEWER INSTALLATION
NOT TO SCALE

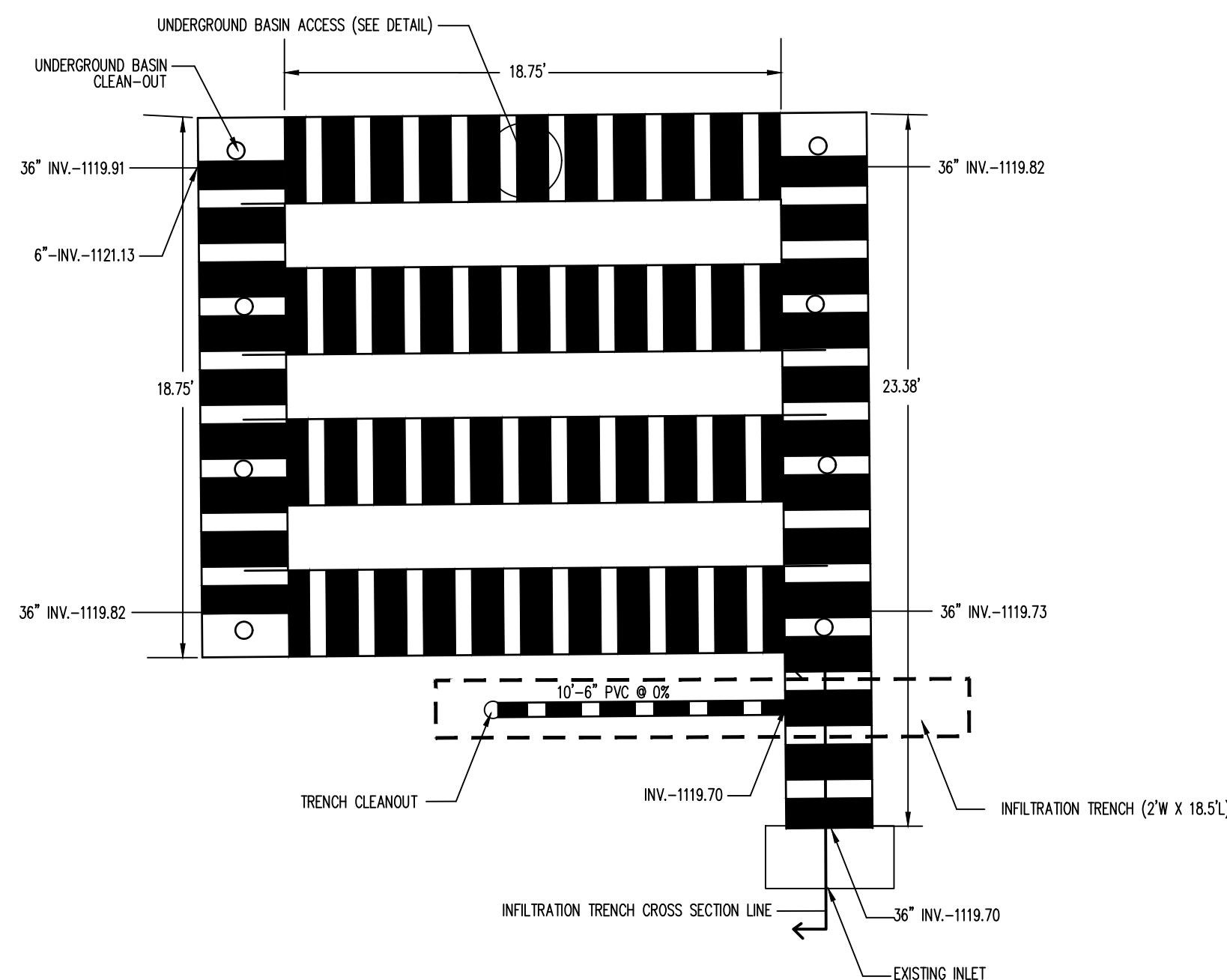


- NOTES:
1. THE TRENCH BOTTOM MUST NOT BE COMPACTED
 2. EQUIPMENT MUST NOT OPERATE IN THE TRENCH BOTTOM.
 3. GEOTEXTILE FABRIC (ACF ENVIRONMENTAL NOSS) MUST BE INSTALLED BETWEEN RIVERSTONE AND AASHTO #57 STONE AND AMENDED SOIL MIXTURE.
 4. CONTRACTOR TO COORDINATE CONSTRUCTION OF TRENCH WITH DESIGN ENGINEER. DESIGN ENGINEER MUST VERIFY EXCAVATED TRENCH GEOMETRY AND ELEVATION PRIOR TO BACKFILLING WITH STONE.
 5. A 2.5' SEPARATION MUST BE MAINTAINED BETWEEN THE BOTTOM OF THE TRENCH AT ELEVATION 1119.20 AND BEDROCK. IN ORDER FOR THIS SEPARATION TO BE MAINTAINED, THE TRENCH SHALL BE OVEREXCAVATED BY A MINIMUM DEPTH OF 2.5' AND AN AMENDED SOIL MIXTURE CONSISTING OF TOPSOIL COMBINED WITH SAND, MULCH OR COMPOST SHALL BE PLACED WITHIN THE 2.5' OVEREXCAVATED AREA. THIS MIXTURE SHALL BE TESTED BOTH PRIOR TO AND AFTER PLACEMENT IN ORDER TO ESTABLISH AND VERIFY AN INFILTRATION RATE RANGE OF 0.78 TO 2.34 IN/HR.

INFILTRATION TRENCH CROSS SECTION
NOT TO SCALE

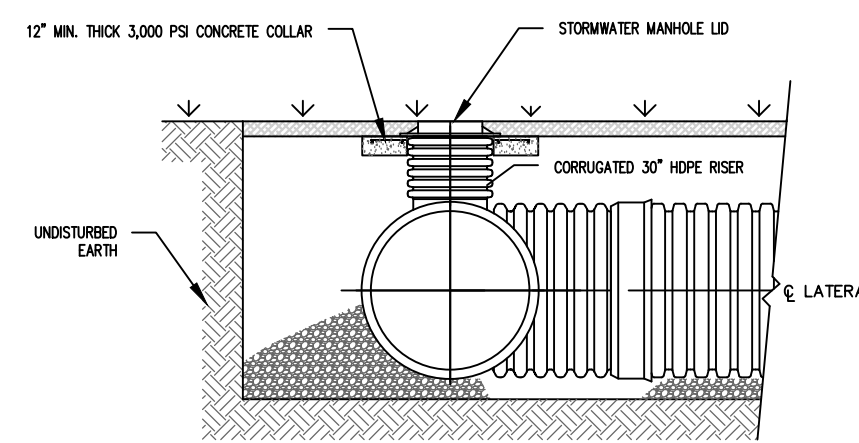


TRENCH CLEANOUT DETAIL
NOT TO SCALE

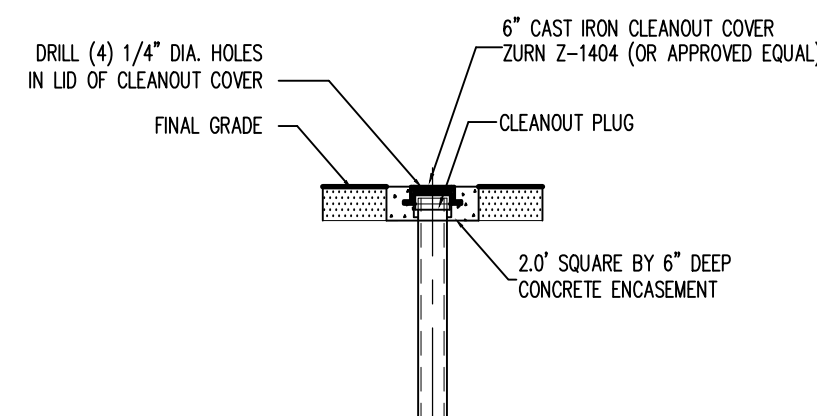


NOTES:
1. ALL PIPES/FITTINGS SHALL BE 36\"/>

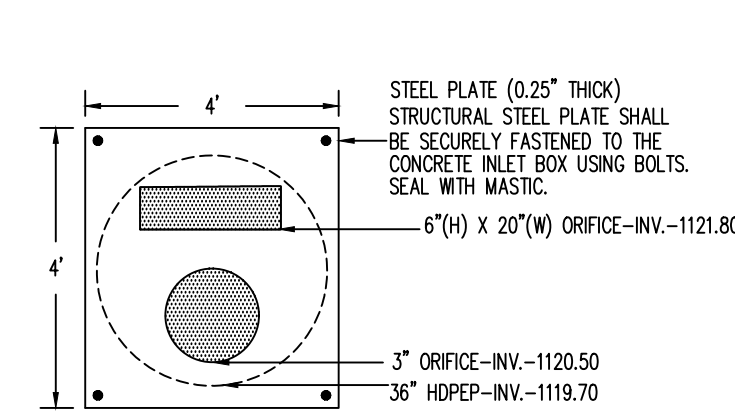
UNDERGROUND STORMWATER BASIN-PLAN VIEW
NOT TO SCALE



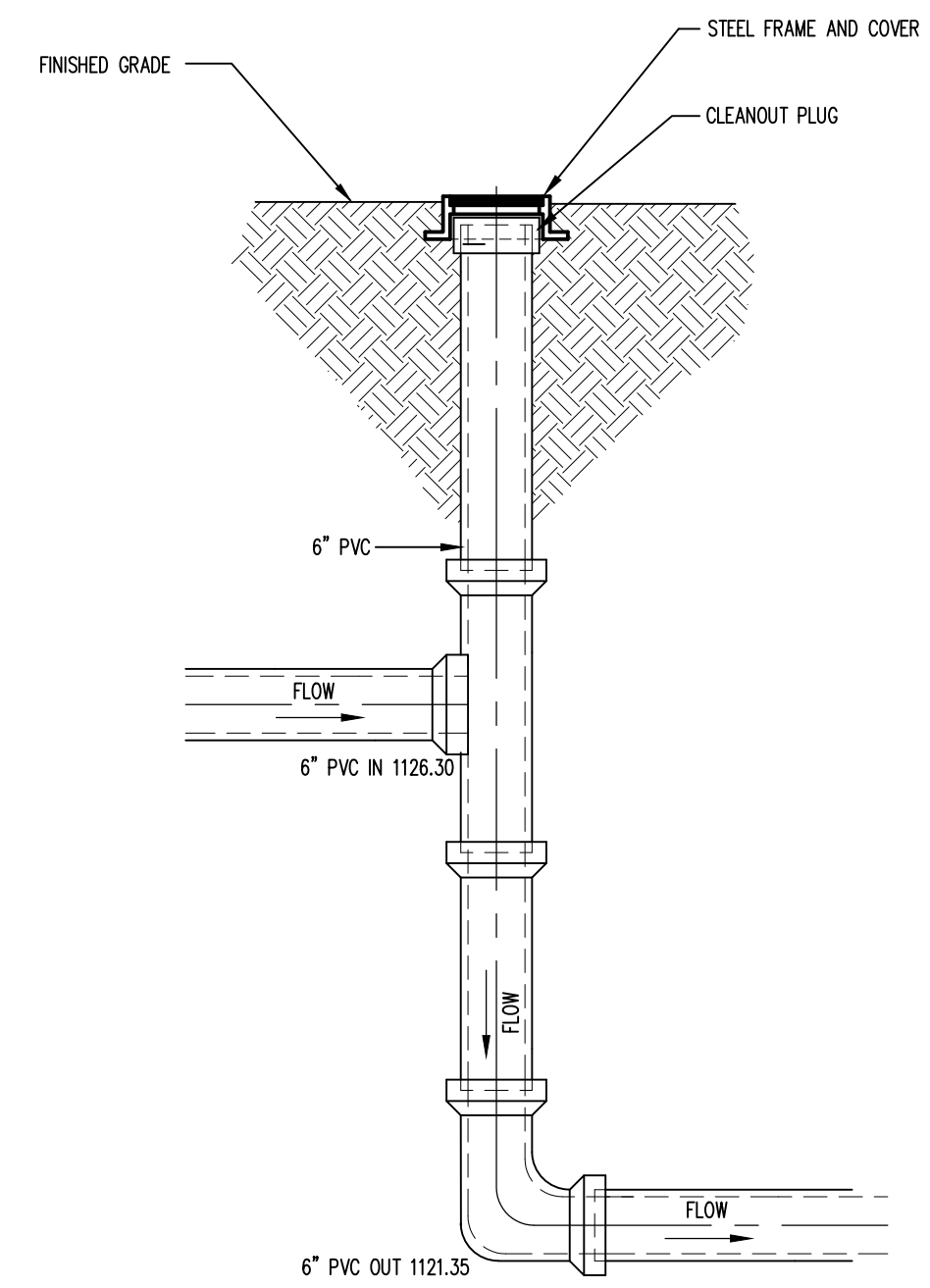
UNDERGROUND BASIN ACCESS
NOT TO SCALE



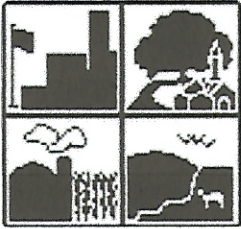
UNDERGROUND BASIN CLEAN-OUT
NOT TO SCALE



ORIFICE PLATE
NOT TO SCALE



ROOF DRAIN CLEAN-OUT DETAIL
NOT TO SCALE



TOWNSHIP OF FERGUSON

APPLICATION FOR VACANCY BOARD

The Ferguson Township Board of Supervisors is accepting applications until Thursday, January 17, from residents to fill a position on the Vacancy Board. The Vacancy Board will meet when there is a vacancy on the Board of Supervisors and the remaining Supervisors are unable to fill a vacancy within thirty days after the resignation has been accepted by the Board of Supervisors. Should the Vacancy board be required to meet, it will have fifteen days to appoint a successor. The appointment will be made on January 21 at the Regular Board of Supervisors meeting.

Date: January 14, 2019

Name: Mark Kunkle

Address: 770 Bloomsdorf Drive State College, PA 16801

Phone: 814-404-3909

Ferguson Township Resident: Yes No

Please explain your interest in serving on the Vacancy Board. *(provide attached paper if needed)*
I have been a resident of the Township since 1985. My professional service to the Township as its Manager for 32 years has provided me the opportunity to work with several Boards of Supervisors. It is my hope that the Vacancy Board will not be needed to fill the Ward III Board vacancy. It is always better for the remaining seated members to select an acceptable colleague that they have confidence they can work with as a team.

My interest in this position would be to work in a collaborative and cooperative manner with the remaining Board members to reach consensus on an applicant or alternate for the vacancy.

Mark A. Kunkle
Signature of Applicant

1/14/2019
Date

Return your completed application to the Township, Attention: Ferguson Township Manager, 3147 Research Drive, State College, or via admin@twp.ferguson.pa.us.



TOWNSHIP OF FERGUSON

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Date: JAN 14 2019
Name: WES GLEBE
Address: 115 N. BUTZ ST SC, PA 16801
Phone: 237 9312

Ferguson Township Resident: Yes No

Please explain your interest in serving on the Vacancy Board. (provide attached paper if needed)
I THINK I AM SIGNIFICANTLY CONCERNED ABOUT THE EFFECTIVE
PROCESS OF LOCAL GOVERNMENT. GIVEN THE CIRCUMSTANCES
THE VACANCY BOARD MAY BE NEEDED

[Signature]
Signature of Applicant

JAN 14 2019
Date

Return your completed application to the Township, Attention: Ferguson Township Manager, 3147 Research Drive, State College, or via admin@twp.ferguson.pa.us.



TOWNSHIP OF FERGUSON

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Date: 1.15.19

Name: G. RANDOLPH HUDSON

Address: 427 S. NIXON RD.

Phone: 814 937.4372

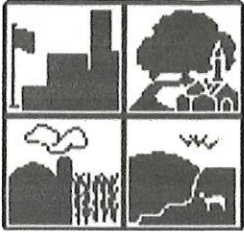
Ferguson Township Resident: Yes No

Please explain your interest in serving on the Vacancy Board. (provide attached paper if needed)

Ferguson Township must continue to have supervisors that are able to enact and enforce policy that is fiscally sound, and responsive to the community. I would like to help see that the Ward 3 supervisor meets these criteria.

G. Randolph Hudson
Signature of Applicant

1.15.19
Date



TOWNSHIP OF FERGUSON

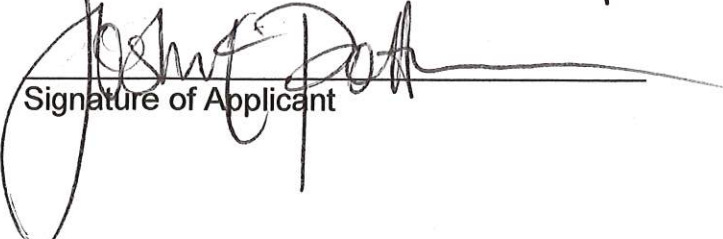
APPLICATION FOR VACANCY BOARD

The Ferguson Township Board of Supervisors is accepting applications until Thursday, January 17, from residents to fill a position on the Vacancy Board. The Vacancy Board will meet when there is a vacancy on the Board of Supervisors and the remaining Supervisors are unable to fill a vacancy within thirty days after the resignation has been accepted by the Board of Supervisors. Should the Vacancy board be required to meet, it will have fifteen days to appoint a successor. The appointment will be made on January 21 at the Regular Board of Supervisors meeting.

Date: 01/16/2019
Name: Joshua E. Potter
Address: 127 W. Chestnut St., Pine Grove Mills, PA 16868
Phone: 814-424-4057 (cell); 238-2383 (home)
Ferguson Township Resident: Yes No

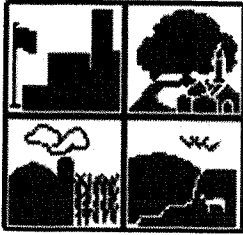
Please explain your interest in serving on the Vacancy Board. (provide attached paper if needed)

I have called Ferguson Township home for over 30 years, and would be honored to help play a role in choosing a passionate and qualified candidate to fill the current Supervisor vacancy for Ward 3. I have enjoyed and appreciated the Small Area Plan efforts this past fall, which has encouraged me to be more involved in our community. I believe this is an important opportunity to assist our Board as they seek a Supervisor candidate that will serve our Township well.


Signature of Applicant

01/16/2019
Date

Return your completed application to the Township, Attention: Ferguson Township Manager, 3147 Research Drive, State College, or via admin@twp.ferguson.pa.us.



TOWNSHIP OF FERGUSON
APPLICATION FOR VACANCY BOARD

The Ferguson Township Board of Supervisors is accepting applications until Thursday, January 17, from residents to fill a position on the Vacancy Board. The Vacancy Board will meet when there is a vacancy on the Board of Supervisors and the remaining Supervisors are unable to fill a vacancy within thirty days after the resignation has been accepted by the Board of Supervisors. Should the Vacancy board be required to meet, it will have fifteen days to appoint a successor. The appointment will be made on January 21 at the Regular Board of Supervisors meeting.

Date: 1/17/19
 Name: Dorothy Evensen
 Address: 2465 Circleville Rd #108, State College, PA 16803
 Phone: 814 883-6150

Ferguson Township Resident: Yes No

Please explain your interest in serving on the Vacancy Board. (provide attached paper if needed)

see attached

Dorothy Evensen
 Signature of Applicant

1/17/19
 Date

Township of Ferguson
Application for Vacancy Board
Dorothy Evensen

My interest to serve on the Vacancy Board stems from my increased ability to make time to learn about and work for national political issues about which I am deeply concerned. I realize, however, that in essence all politics is local, and I been keeping track of the various issues taken up by the Ferguson Board of Supervisors in the last few years – zoning, climate, education, and the safety of its citizens. I realize that this position requires only minimal involvement, but I hope to learn more about the plans and needs of the township should I be chosen to serve in this capacity. I worked 50 years as an educator serving 15 years as a high school teacher in New York City and its greater metropolitan area and the remaining years as a Professor of Education at Penn State from which I currently hold emeritus status. My life has been one of service to various communities and I wish to continue my efforts to serve others in these early years of retirement. I look forward to hearing the Board's decision on my application. Thank you for this opportunity.

The National Citizen Survey™ for Ferguson Township, PA 2019

THE NCS BASIC SERVICE

The National Citizen Survey™ (The NCS) is the premier citizen survey service from ICMA and National Research Center, Inc. (NRC). It is turned to by more jurisdictions than any other service. The NCS™ basic service includes all aspects of conducting the survey; all printing and mailing costs, geocoding the sample to ensure that all addresses are within the limits of Ferguson Township, ongoing consultation with staff about the survey process, sample selection, preparation and mailing of a five-page survey to 1,700 households (with a confidence interval of 95% and an approximate margin of error of plus or minus 5%), programming and hosting the web versions of the survey, data entry and analysis, Community Livability Report, Dashboard Report and full Technical Appendices Report. NRC uses all best practice methods in survey research, including over sampling multi-family units to decrease non-response bias, using a multi-contact method to improve response rates, and statistical weighting of the survey data.

The NCS™ Basic Service

Instrument development; assistance with crafting custom questions; three part mailing of 1,700 pieces each (pre-notification postcard, and two waves of the survey with cover letters and postage paid return envelope), all survey recipients will have the option to complete the survey online if they prefer, data entry and analysis of returned surveys; draft report for review; final reports that include national benchmark comparisons, analysis and detailed methods; technical assistance in understanding survey results via phone and email with key staff for The NCS\$15,690

Online Opt-in Survey

A web-only survey will be available to all Ferguson Township residents, you promote participation (non-scientific) Included in Basic Service Cost

Geographic Subgroup Comparison Report

Comparisons will be provided in a separate report for geographic subgroups (as predetermined by NRC and Township staff) by questions on the survey\$910

Demographic Subgroup Comparison Report

Crosstabs will be provided in a separate report for four demographic questions by the evaluative questions on the survey\$910

Custom Benchmark Comparisons

In addition to the national benchmarks (included with The NCS Basic Service), NRC will provide a custom set of benchmark comparisons, based on criteria as requested by Ferguson Township (population, region, etc.) \$1,085

One open-ended question

One open-ended question: includes one open-ended question added to survey. Responses will be categorized and reported in a table under separate cover, accompanied by a list of verbatim responses\$2,135

In-person presentation of results

NRC staff member will present survey results in-person. For this presentation, we use Microsoft® PowerPoint as a visual aid and a copy of the slideshow is left with Ferguson Township, this pricing is for one presentation and assumes one-night's stay and distance within 50 miles of an international airport with direct flights to Denver \$3,500

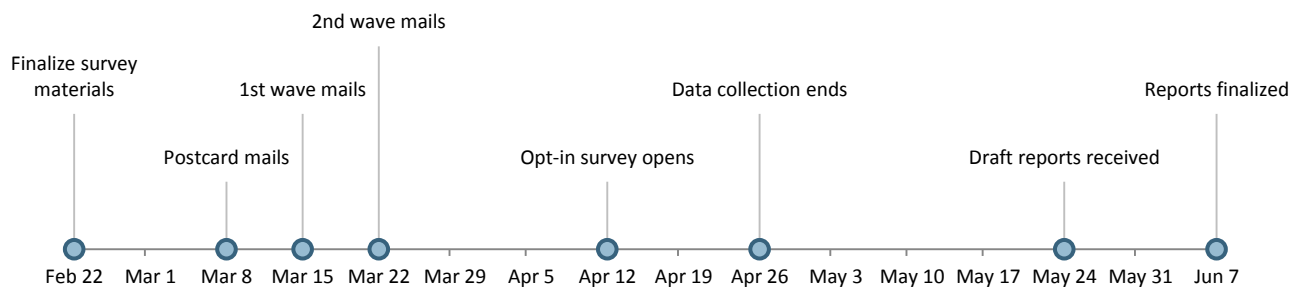
Total Cost to Ferguson Township with options as outlined above.....\$24,230

To enroll in The NCS™ the initial payment of \$9,975 is due, which will be applied to the cost of The NCS Basic Services, the remainder of the Basic Service will be billed upon delivery of draft reports, payment for add-on options will be invoiced upon confirmation of those choices.

**All pricing listed includes a 10% ICMA Member Discount. Pricing is good through June 30, 2019.*

Full pricing and add-on options are published on NRC’s website. Additional add-on options are available, upon request. To see additional information and pricing for The NCS, please visit <https://www.n-r-c.com/2019-pricing-national-citizen-survey/>

(STANDARD)
Timeline for The National Citizen Survey™

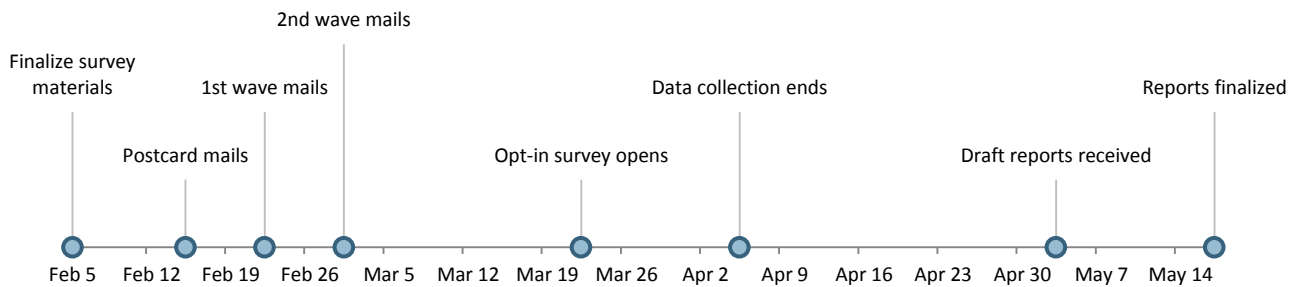


Item	Date
Preparing for the Survey	
⊙ The NCS survey process is initiated upon receipt of your first payment	Jan 18
← NRC emails you information to customize The NCS	Jan 18
→ Due to NRC: Selection of add-on options	Feb 1
→ Due to NRC: Drafts of the optional custom questions to be included in the survey	Feb 1
→ Due to NRC: Zip code information and GIS boundary data	Feb 8
→ Due to NRC: Additional payment for add-on options	Feb 8
⊙ NRC finalizes the survey instrument and mailing materials and sends .pdf samples for your records	Feb 22
⊙ NRC generates the sample of households in your community	Feb 8 to Feb 22
⊙ NRC prints materials and prepares mailings	Mar 1
→ Due to NRC: Selection of custom benchmark profile(s) (if custom benchmark add-on selected)	Mar 1
Conducting the survey	
⊙ Survey materials are mailed	Mar 8 to Mar 22
⊙ Prenotification postcards sent	Mar 8
⊙ 1st wave of surveys sent	Mar 15
⊙ 2nd wave of surveys sent	Mar 22
→ Opt-in web survey link posted on your website (source link provided to you by NRC)	Apr 12
⊙ Data collection: surveys received and processed for your community	Mar 15 to Apr 26
During this time, you will receive postcards that were undeliverable due to bad addresses, or vacant housing units. This is normal. Please count all the postcards, as we will subtract the number of returned postcards from the total number mailed to estimate the number of "eligible" households in calculating the final response rate.	
→ Due to NRC: Final count of returned postcards	Apr 26
⊙ Survey analysis and report writing	Apr 26 to May 24
During this time, NRC will process the surveys, perform the data analysis, and produce a draft report for your community. The report of results will contain a description of the methodology, information on understanding the results, and graphs and tables of your results, as well as a description of NRC's database of normative data from across the U.S. and actual comparisons to your results, where appropriate.	
← NRC emails draft report (in PDF format) to you along with invoice for balance due on The NCS Basic Service and any additional add-on options	May 24
→ Due to NRC: community feedback on the draft report (most final reports are identical to the draft reports, except being labeled as final instead of draft)	May 31
← NRC emails final report to you	Jun 7

Legend

←Indicates when items from NRC are due to you →Indicates when items from you are due to NRC ⊙Indicates information items

(CONDENSED)
Timeline for The National Citizen Survey™



Item	Date
Preparing for the Survey	
⊙ The NCS survey process is initiated upon receipt of your first payment	Jan 18
← NRC emails you information to customize The NCS	Jan 18
→ Due to NRC: Selection of add-on options	Jan 25
→ Due to NRC: Drafts of the optional custom questions to be included in the survey	Jan 25
→ Due to NRC: Zip code information and GIS boundary data	Jan 29
→ Due to NRC: Additional payment for add-on options	Jan 29
⊙ NRC finalizes the survey instrument and mailing materials and sends .pdf samples for your records	Feb 5
⊙ NRC generates the sample of households in your community	Jan 29 to Feb 12
⊙ NRC prints materials and prepares mailings	Feb 8
→ Due to NRC: Selection of custom benchmark profile(s) (if custom benchmark add-on selected)	Feb 8
Conducting the survey	
⊙ Survey materials are mailed	Feb 15 to Mar 1
⊙ Prenotification postcards sent	Feb 15
⊙ 1st wave of surveys sent	Feb 22
⊙ 2nd wave of surveys sent	Mar 1
→ Opt-in web survey link posted on your website (source link provided to you by NRC)	Mar 22
⊙ Data collection: surveys received and processed for your community	Feb 22 to Apr 5
During this time, you will receive postcards that were undeliverable due to bad addresses, or vacant housing units. This is normal. Please count all the postcards, as we will subtract the number of returned postcards from the total number mailed to estimate the number of "eligible" households in calculating the final response rate.	
→ Due to NRC: Final count of returned postcards	Apr 5
⊙ Survey analysis and report writing	Apr 5 to May 3
During this time, NRC will process the surveys, perform the data analysis, and produce a draft report for your community. The report of results will contain a description of the methodology, information on understanding the results, and graphs and tables of your results, as well as a description of NRC's database of normative data from across the U.S. and actual comparisons to your results, where appropriate.	
← NRC emails draft report (in PDF format) to you along with invoice for balance due on The NCS Basic Service and any additional add-on options	May 3
→ Due to NRC: community feedback on the draft report (most final reports are identical to the draft reports, except being labeled as final instead of draft)	May 10
← NRC emails final report to you	May 17

Legend

←Indicates when items from NRC are due to you →Indicates when items from you are due to NRC ⊙Indicates information items

Terms of Use

The National Citizen Survey™ (The NCS™), The National Employee Survey™ (The NES™), The National Business Survey™ (The NBS™) and The Community Assessment Survey for Older Adults™ (CASOA™) Terms of Use

As a Client of National Research Center, Inc. (NRC) using The NCS, The NBS, CASOA or The NES (the Survey Instruments), the Client recognizes that on all Materials and Survey Instruments, as defined herein, created by NRC prior to and after execution of these Terms of Use and used by the Client during the course of the project, NRC retains all rights of authorship and ownership of copyright. Client also acknowledges that NRC owns all data collected in connection with administration of any of NRC's Survey Instruments (Survey Data).

Definitions

In these Terms of Use, **"Materials"** means and includes: any and all work product, submittals, reports, plans, specifications, and other deliverables consisting of documents, writings, handwritings, typewriting, printing, photostatting, photographing, computer models, and any other computerized data and every other means of recording any form of information, communications, or representation, including letters, works, pictures, videos, drawings, sounds, or symbols, or any combination thereof. **"Survey Data"** means and includes any and all data collected in connection with administration of any of NRC's Survey Instruments. **"Survey Instruments"** means The NCS, The NBS, CASOA or The NES.

One-Time License to Survey Instruments and Materials

Survey enrollment and payment includes a one-time use license to use the Survey Instruments and Materials for a period of one (1) year following administration of the Survey Instrument. Prior to the expiration of the one (1) year period, Client may re-enroll and submit payment for future use of the Survey Instruments and Materials. Once the limited license has expired, no part of the Survey Instruments and Materials may be

reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of NRC, except where permitted by Fair Use, as defined in the Copyright Act, 17 U.S.C. § 107 or otherwise required by law. Notwithstanding the foregoing, Client's right to use its own summaries and reports of the Survey Data does not expire.

Perpetual, Conditional License to Survey Data

The Client acknowledges that in exchange for its use of NRC's proprietary questionnaires and reporting templates, NRC owns exclusive rights in all Survey Data. NRC grants Client a license to use and report Survey Data. The license to use and report Survey Data does not expire. Client's license to use and report Survey Data does not include the right for Client or any other party to use Survey Data for direct or indirect current or potential financial gain.

As part of any publication, transmission or posting of Survey Data, except for exclusively internal use, Client must include the following statement acknowledging that NRC is the owner of the compilation of Survey Data and that Survey Data may not be used by any third party:

This compilation of survey data is owned by National Research Center, Inc. It may not be reproduced or retransmitted in any form without the expressed written consent of National Research Center, Inc. Requests for permission to reproduce or transmit these data should be mailed to Managing Director, NRC, 2955 Valmont Road, Suite 300, Boulder, Colorado 80301.

Privacy Statement

NRC will not sell or distribute the following information of clients or those who provide us information on our website, n-r-c.com:

- Signatures
- Contact information such as emails, phone numbers or addresses
- Any other personal identifying information
- Payment information

The Client acknowledges that it has read and understands the Terms of Use of NRC's Survey Materials, Instruments and Data and agrees to be bound by them.

— I have read and agree to these Terms of Use, and have authority from my jurisdiction to do so *

First Name *

Last Name *

Title *

Organization *

Email *

SUBMIT

Partners and Memberships





THE NATIONAL CITIZEN SURVEY

COMMUNITY ASSESSMENT SURVEY FOR OLDER ADULTS

THE NATIONAL BUSINESS SURVEY

THE NATIONAL EMPLOYEE SURVEY

GET STARTED!

NRC Employment

NRC Resource Group

FAQ

Copyright Information

Terms Of Use

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Pribulka,David

From: Dininni,Laura
Sent: Wednesday, December 19, 2018 10:47 AM
To: Pribulka,David
Subject: Agenda item for Jan consent agenda

That the BOS discuss steps to preservation of the Beaver Branch, a priority identified in the 2009 RPOS plan, and invite Deb Nardone to discuss Clearwaters efforts.

Attachments:

2009 RPOS plan

Map of Beaver Branch watershed

SWP draft map

IMPORTANT WARNING: The information in this message (and the documents attached to it, if any) is confidential and may be legally privileged. It is intended solely for the addressee. Access to this message by anyone else is unauthorized. If you are not the intended recipient, any disclosure, copying, distribution or any action taken, or omitted to be taken, in reliance on it is prohibited and may be unlawful. If you have received this message in error, please delete all electronic copies of this message (and the documents attached to it, if any), destroy any hard copies you may have created and notify me immediately by replying to this email. Thank you.



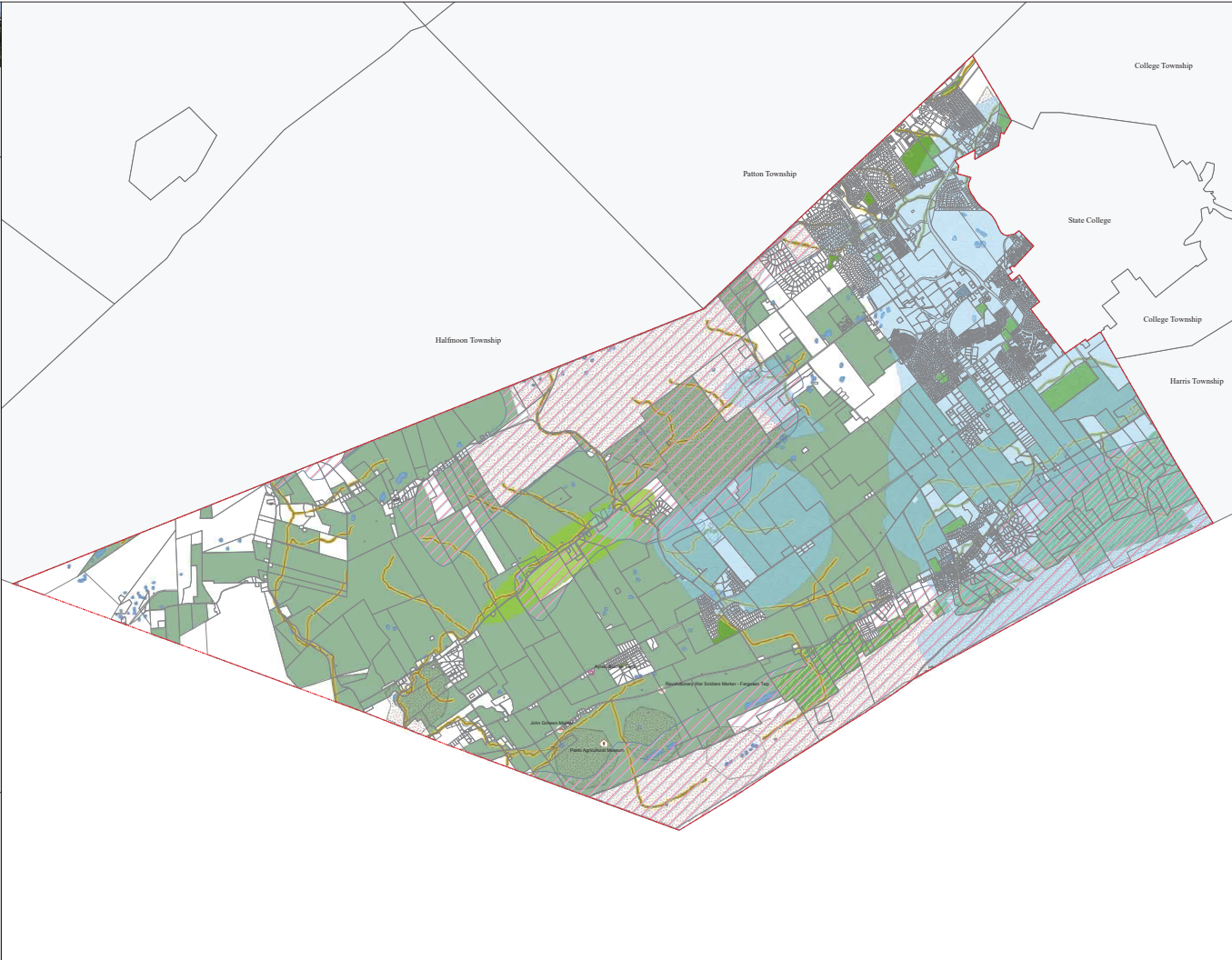
Potential for Environmentally Sensitive Area/Conservation Map

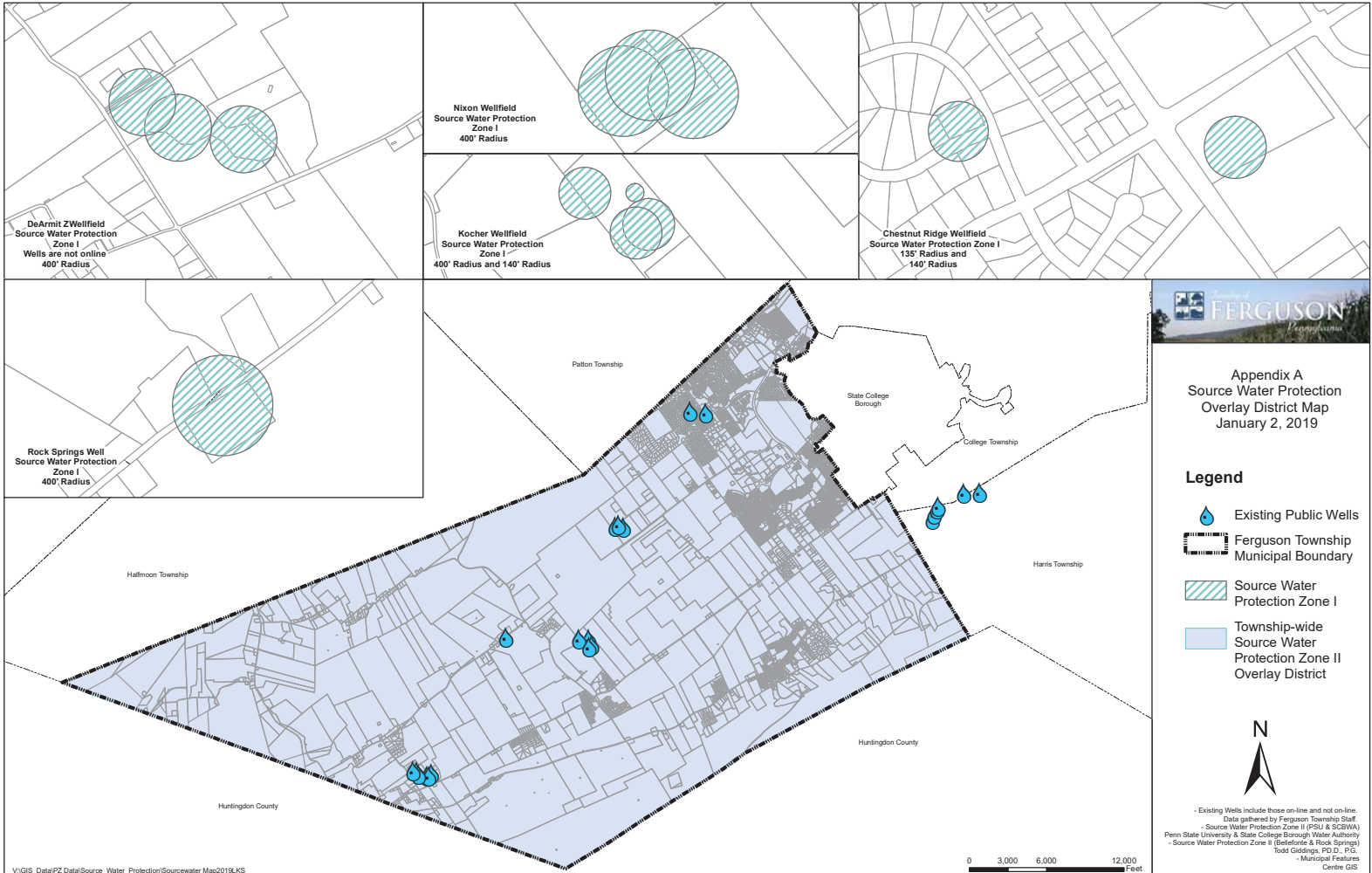
November 19, 2018

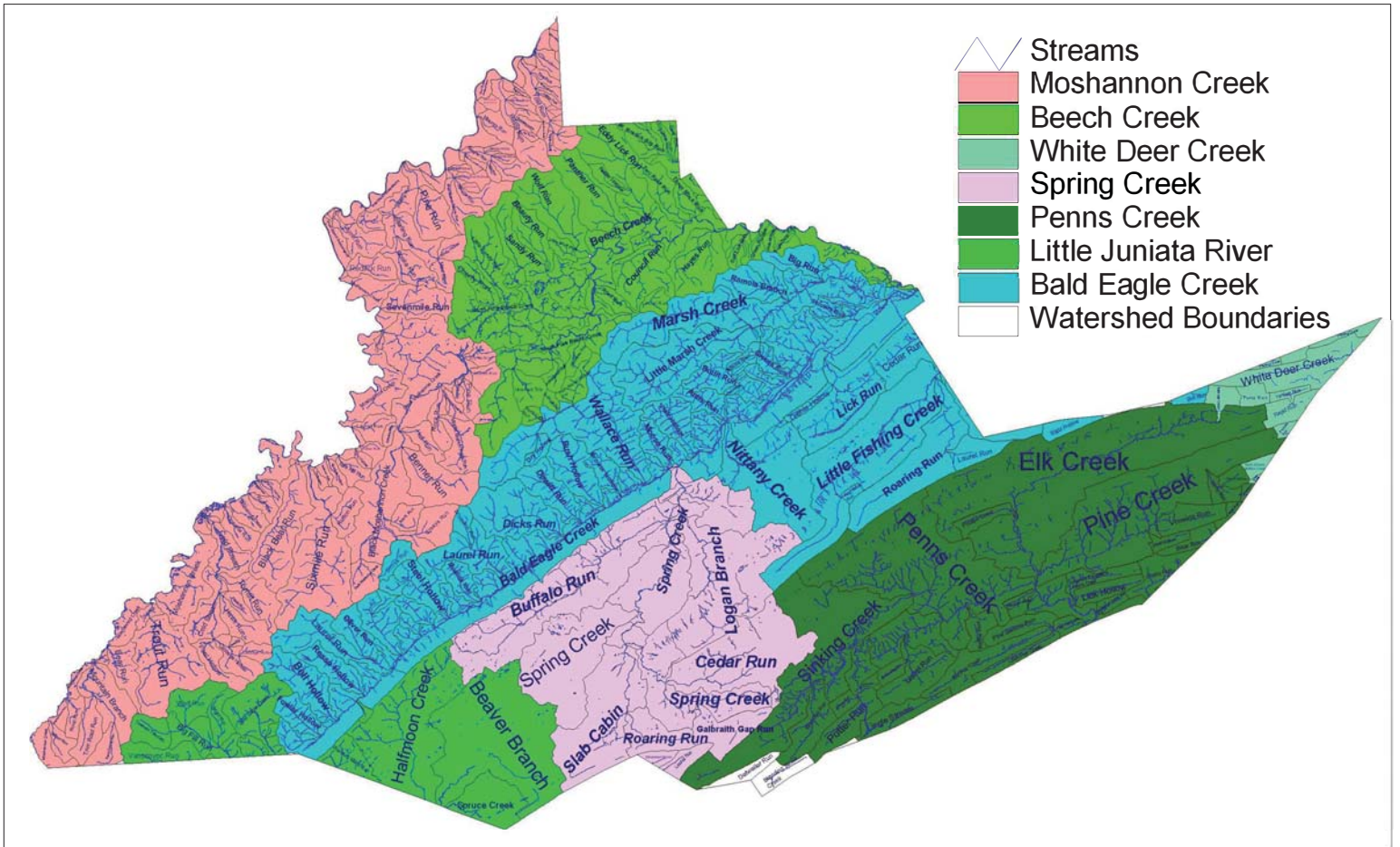
- ### Legend
- Ferguson Township Boundary
 - Parcels
 - National Register Historic Site
 - Historical Markers
 - Pasto Agricultural Museum
 - Natural Heritage Inventory
 - Audubon Bird Areas
 - Mines
 - Water Well Buffers
 - Source Water Protection
 - Ridge Overlay District (ROD)
 - 35' Riparian Buffer
 - 65' Riparian Buffer or Extent of Floodplain
 - Wetlands
 - Freshwater Emergent Wetland
 - Freshwater Forested/Shrub Wetland
 - Freshwater Pond
 - Riverine
 - 50' Wetland Buffer
 - Rock Springs Protection Zone II
 - Ag Preservation
 - Cemetery
 - Parks
 - Historical District

0 0.5 1 2 Miles

--- Existing Wetlands include those on-line and off-line.
Data gathered by Ferguson Township Staff
--- Source Water Protection Zone II (PZII) & (SCWQ)
Penn State University & State College Borough Water Authority
--- Source Water Protection Zone II (Baldwinville & Rock Springs)
Scott Giddings, PG D., P.E.
--- Municipal Features
Centre GIS







Ref: Centre County Conservation District

**FERGUSON TOWNSHIP
RECREATION PARK AND OPEN SPACE
PLAN UPDATE
2009**

PLAN PURPOSE AND GOALS

The Township's first Recreation, Parks, and Open Space Plan was adopted by the Ferguson Township Board of Supervisors in 1998. This Plan identified the importance of providing updates on a regular basis. This update of the Plan, begun in 2006, is intended to:

1. Identify the status of existing parks and other recreation resources and to subsequently determine the need for additional recreation, parks and open space opportunities in the Township.
2. Provide a document, for use at the local level, which will assist in determining consistency with the goals and objectives of the Regional Comprehensive Plan as well as provide guidance on the acquisition, conservation and preservation of park and open space resources in the community.

In February 2004, an Ad Hoc Recreation, Parks and Open Space (RPOS) Planning Committee was appointed by the Board of Supervisors to provide an update of this plan (Section 3.0 provides a listing of committee members). The RPOS Planning Committee followed a process that:

1. Identified the existing recreation, parks and open space facilities and programs in the Township.
2. Established goals for the RPOS Planning Committee and for the update of the Plan.
3. Utilized the format of the existing Plan
4. Identified the needs of the Township with regard to the acquisition of future parks, open space and trail facilities.
5. Provided a set of recommendations to the Board of Supervisors for implementation of the Plan.

The RPOS Planning Committee established the following goals to serve as guidelines for the Plan Update.

Goal: Develop a strategy that allows the Township to provide recreation, park, and open space facilities to current and future populations.

Objective: Determine the availability of recreational opportunities-within one-half mile of each Township resident

Objective: Establish a method for protecting and preserving community facilities and resources to serve future populations.

Objective: Identify funding alternatives for the acquisition, maintenance and development of existing and proposed parks, recreation, and open space

Goal: Evaluate how the services at the local level are impacted by the recently obtained regional park opportunities.

Objective: Identify what services are provided more efficiently and economically

on a regional basis.

Objective: Ensure the accessibility of regional parkland

Objective: Assure that the acquisition, design, and funding for regional facilities remains a regional responsibility that includes regional input

Goal: Provide safe and convenient access to park / open space for all residents of the Township

Objective: Provide the opportunity for the development of safe pedestrian / bicycle connections between existing and proposed parks and open space and for commuting purposes both within the Township and regionally

Objective: Coordinate infrastructure improvements with the location of the Regional Growth Boundary and Capital Improvements Planning.

Objective: Coordinate Park/ recreation /open space planning with other land use planning efforts.

Goal: Provide a range of park, recreation, and open space opportunities which support both active and passive recreation needs and serve all ages and abilities.

Objective: Acquire open space that includes opportunities to enhance natural areas as well as to develop recreation/sports fields

Objective: Propose multi-purpose facilities which can also be converted to other uses with minimal cost and effort.

Goal: Ensure public awareness and involvement in the planning process

Objective: Obtain public input during the development of the Update to the Plan.

Objective: Utilize the survey and facilities inventory to determine where there are gaps in the current delivery of services.

Objective: Hold a public hearing to obtain public feedback on the Update to the Plan

NATURAL FEATURES AND COMMUNITY DEVELOPMENT

Ferguson Township is characterized by a diversity of land uses. A portion of the Township(14%) is located within the Regional Growth Boundary for the Centre Region. This acreage is predominately developed and contains residential, commercial, and employment uses. The Centre Region, defined as the Townships of College, Patton, Harris, Halfmoon, Ferguson and the Borough of State College, recently amended this boundary and extended the associated sewer service area. One value of the RGB is the ability to better define the area in which growth will occur, as well as the extent of the provision of the services needed to support such growth. The portion of the Township outside of the boundary is primarily rural and agricultural and is currently zoned to provide for the continuation of this pattern of development.

Based on this growth management approach to future community development, the RPOS Planning Committee determined that the location and amount of future recreation, park and open space should be impacted by the following factors:

1. The presence of natural features in the Township that should be preserved and, where appropriate, coordinated with the provision of parkland and/or recreational opportunities
2. Demographic distribution of residents and accessibility of recreation, park and open space facilities.
3. The availability of both appropriate land and adequate funding to allow the Township to provide the necessary services.
4. Consistency with the goals and objectives of the adopted Regional Comprehensive Plan

NATURAL FEATURES

Location and Topography

Ferguson Township is comprised of 49.7 square miles and is situated in the southwest corner of Centre County. The Township is bordered on the northeast by College Township, State College Borough and Harris Township; on the northwest by Patton Township and Halfmoon Township; on the southeast by Jackson Township and Barree Township in Huntingdon County; and on the southwest by Franklin Township, Huntingdon County. The Township is relatively flat with the exception of the southeast section of the Township that extends onto Tussey Mountain. The majority of steep slopes within the Township are located along the southern section of the Township on the Tussey Ridge.

Streams / Floodplains / Wetlands

Ferguson Township's perennial streams include portions of Halfmoon Creek, Spruce Creek, Beaver Branch and Slab Cabin Run. Portions of these streams however, are

also intermittent streams which dry up during periods of dry weather. In general the floodplains in the Township follow Halfmoon Creek, Spruce Creek, Beaver Branch, Slab Cabin Run and the Big Hollow Drainageway. There are also many low lying areas throughout the Township that hold water during heavy storms. The eastern half of the Township drains to the Spring Creek drainage area and the western half drains to the Spruce Creek drainage area.

According to the PA Fish and Game Commission, none of the streams located in Ferguson Township are stocked for recreational fishing purposes. All of the stocked fishing areas in the region are located outside of the Township.

The National Wetland Inventory maps for Ferguson Township indicate that small areas of wetlands are scattered throughout the Township and are mostly located within the floodplain areas.

Woodlands

The major areas of woodlands within the Township are located along the south end of the Township in the Rothrock State Forest, along the south side of Tadpole Road throughout the State Game Lands and west through the Penn State Lands on the north end of the Township.

Agricultural Lands

Approximately 15,000 acres of the Township's total 30,448 acres (approximately 49% percent) are located in an agricultural security area. This land, containing prime agricultural soils, is a unique and non-renewable resource that requires protection from the impacts of unmanaged growth and incompatible development. The Township currently participates in two programs which seek to sustain the industry of agriculture within the community.

The Township has established an agricultural security area which provides the opportunity for a landowner, who expresses the intent to continue farming, to be relieved from compliance with the Township's nuisance laws (ordinances which are related to restrictions such as odor, noise, etc). This allows everyday farming practices to continue without constituting a violation of Township code. In addition, acreage within the Agricultural Security Area then becomes eligible for the County Agricultural Land Conservation Easement Program. As of August 2007, there are a total of twelve (12) farms comprised of 1,954.44 acres of land located in Ferguson Township that have been purchased as part of the Agricultural Land Conservation Easement Program. This program, which is run by the County, is designed to preserve farmland for farming purposes. The owners of properties in the program have been paid a fee in return for the development rights to their property. Thus, the land will be preserved for agricultural use in perpetuity.

Sensitive Lands

According to the Centre County Natural Heritage Inventory prepared by the Western Pennsylvania Conservancy in 1991, there are six areas within Ferguson Township that are unique or uncommon within Centre County. These areas include the Beaver Branch Gorge, eastern side of Overlook Heights, Chime and Miller Caves, Scotia Barrens, Gobbler Knob Vernal Pools, and Fairbrook Cemetery, as well as areas of managed lands identified as Rothrock State Forest and State Game Lands Number 176. These areas also encompass an Audubon Important Bird Area and Important Mammal Areas established through the State Wildlife Society. Identification of these areas is important because it allowed the RPOS Planning Committee to determine whether or not these areas should be included in this plan as areas of open space preservation, as parks or open space, and/or as areas to avoid because of their environmental significance.

The Beaver Branch Gorge is a natural community located along the western edge of the Township between Tadpole Road and the Centre County / Huntingdon County border. The Beaver Branch Gorge is an old railroad grade with the remnants of a calcareous glade and beaver wetland. Historically this general area was known for several rare species, but today a gas pipeline runs through the area and the limestone glade appears to be disrupted. The east side of the gorge contains approximately 50 acres of pure eastern hemlock and white pine. Although the tree stand is only about 100 years old, the white pines and eastern hemlock represent a type of forest that was once more prevalent than it is today. Natural Heritage sites in Centre County are ranked according to their significance as areas of importance to the biological diversity and ecological integrity of the county. This site has been identified as having low county significance yet, it will have increasing importance to the future quality of the County's overall environment and merits the attention of planners and conservationists to maintain the area's present condition.

The area identified as comprising the Beaver Branch Gorge is in private ownership and currently falls within two different zoning districts; the RA Rural Agricultural and the RR Rural Residential. These districts have distinctly divergent abilities to protect this resource from future development. The RA zone allows only one lot to be subdivided for every fifty (50) acres while the RR zone permits unlimited one acre lot development. Although the RR zone includes an opportunity to utilize a conservation development design, this practice is not required. Without the application of this design approach, there is no language in the current code which would provide protection for the existing natural features identified by the inventory.

Calcareous cliff communities within the Gorge are threatened by adjacent upslope development and its associated runoff. Other threats include habitat alteration and recreational overuse. Several cliff communities are threatened by invasive species such as Black swallow-wort, Canada bluegrass, Garlic mustard, and Tree of heaven. This acreage is currently enrolled in the Clean and Green program, which provides some restrictions on development opportunities. However, it is recommended that the Township consider rezoning this area or, providing some type of overlay in the RR zone to provide a more appropriate level of long-term protection for this resource.

The Overlook Heights area is located on the east side of the Overlook Heights development on Penn State University land and straddles the boundary of Ferguson and College Townships. The area probably once supported a unique calcareous community but is now limited to a few isolated spots in the middle of largely developed lands. A rare species (species not named due to sensitivity) has been able to adapt to the disturbance but is in such a heavily traveled area that it is danger of being harvested, trampled or removed. This area is also considered to be of low importance to the biological diversity and ecological integrity of the county. The Western Pennsylvania Conservancy recommends mowing be discontinued in this area and the site should be managed by a qualified biologist to help restore some of the habitat to insure that the species remains viable. This area appears to be encompassed entirely by the Township's RA Rural Agricultural zoning district which limits the potential for development to compromise the integrity of the resource. In addition, this acreage appears to be owned in its entirety by the University which intends to carry out plans to create an arboretum on the site. It is recommended that the Township discuss the recommendations of the Conservancy with Penn State personnel in order to provide the most appropriate preservation measures for the area and that an overlay zoning district continue to be considered as an appropriate tool for the protection of the resource(s) found in this location.

The Miller Caves are located on Penn State's Russell E. Larson Agricultural Research Farm on the southeast side of State Route 45 adjacent to the Rothrock State Forest. Both the northern long-eared bat and the even rarer eastern small-footed bat have been documented to hibernate in this cave during the winter. This site is ranked high as a natural heritage area in Centre County, indicating outstanding significance. It supports possibly the rarest animal species (species not named due to sensitivity) in Centre County. These caves also support three other special animals and two natural communities. Because of the high significance of the caves, the Western Pennsylvania Conservancy recommends they be fully protected and established as an area of no disturbance. This area falls entirely within the Township's AR Agricultural Research zoning district and entirely on University owned land. The AR zone was established to permit the uses associated with the University's Ag Research Days to take place in an area otherwise protected from such intrusions. As a result, a relatively wide range of uses are permitted. There is currently no language that would provide for protection of this significant resource. As above, it is recommended that the Township discuss the recommendations of the Conservancy with Penn State personnel in order to provide the most appropriate preservation measures for the area. An overlay, or the inclusion of other protective language within the AR district, could serve to greatly limit the impact to this resource.

The greatest threat to the globally rare aquatic animals that occupy the aquifer connected to these caves is the degradation of water quality in the aquifer through pollutant runoff from the watershed above. Sediment pollution, nutrient enrichment, and chemical contamination could all be very damaging to these species (names unknown). The bat populations cannot tolerate disturbances in the caves during their hibernation period in the winter months. Additionally, any physical alterations to the cave entrance

or the rock surrounding the cave could render the cave unusable to bats by altering the patterns of air and water flow such that the microclimate conditions would no longer meet their requirements.

The Scotia Barrens is a 9,000 acre scrub oak-pitch pine community located in the north central section of the Township straddling the Township's border with Patton and Halfmoon Townships. It is currently considered one of Pennsylvania's Important Bird Areas (IBA's). A majority of the Scotia Barrens is located within and around State Game Lands Number 176. The Scotia Barrens is identified as high significance and is one of the highest priority sites in the County. In fact, three natural communities, three special plants and fourteen special animals have a habitat within this area. This unique habitat is one of the largest barrens left in Pennsylvania. It harbors large numbers of Neotropical migrants during spring and fall migration. Thirty-three species of warblers have been observed. The Western Pennsylvania Conservancy recommends that because of the high county significance of the Scotia barrens it should be fully protected and established as an area of no disturbance. The land within this area that is controlled by the Commonwealth falls within the FG Forest and Gameland zoning district. This limits the development potential of this acreage and provides reasonable protection to the resources identified. However, land within the Barrens that falls outside of the State Game Lands is located in both the AR Agricultural Residential and RR Rural Residential zoning districts. If the limits of the Barrens can be defined, it would be appropriate to provide both some form of protection for the area itself, as well as some form of buffer on the adjacent lands to preserve the integrity of the resource. This is an area of heavy use by humans for foot travel, biking, and hunting. Attempts have been made, with little success, to provide buffer areas between the Gamelands and encroaching housing developments. It is again recommended that the Township consider amending the existing code to establish some form of overlay district that would provide the appropriate level of protection.

There are two publicly managed areas within the Township including Rothrock State Forest and the State Game Lands Number 176. The State Game Lands are located in the north central section of the Township and straddle the Township's boundary with Patton and Halfmoon Townships. The Rothrock State Forest is located on Tussey Mountain along the southern boundary of the Township adjacent to the Township's border with Huntingdon County. Both of these areas are considered to be of high County significance. As noted above, the zoning applicable to both these areas is FG Forest and Gameland. Acreage adjacent to Rothrock State Forest falls within the Township's RR Rural Residential zoning district which has been previously identified as providing limited protection. However, in the area of Tussey Mountain, the Township recently adopted Ridge Overlay zoning that aims to protect the fragile soils and steep slopes of the mountain side from inappropriate and indiscriminate development. This overlay acts as a form of buffer between the State Forest and the more intensely developed areas along Routes 45 & 26. To the west, acreage adjacent to the State lands is owned by the University and falls within the AR Agricultural Research zoning district. As mentioned previously, the Township should consider discussing future land uses with Penn State personnel in order to provide the most appropriate preservation

measures for the area. An overlay, or the inclusion of other protective language within the AR district, could serve to greatly limit potential impacts to this area which borders State Gameland and State Forest.

COMMUNITY DEVELOPMENT

As noted above, the adopted Regional Growth Boundary establishes a basis for managing the amount and location of growth in the Township. According to the guidelines of the National Recreation and Parks Association, the means for determining the appropriateness of the acreage and distribution of parkland and the availability of recreational opportunities is directly related to the size and location of the population to be served. As a result, the following sections provide data on the past and present population as well as forecasts for future growth in the Township and comparisons to the Region, the County, and the State.

The demand for recreational services and, in some cases the type of recreational opportunities desired, is often the product of the socio-economic characteristics of the subject population. Therefore, census data, such as income, employment, and educational attributes is incorporated here in order to track trends and/or establish relationships in these areas over time.

Population Growth

Ferguson Township has been one of the fastest growing Townships in the Centre Region. Population tripled in the 30 years between 1960 and 1990. The 2000 Census data identified another significant rise in the number of Township residents. All projections seem to indicate that the Township will continue to grow; perhaps more slowly but, at a steady pace.

The following table shows the growth of Ferguson Township in relation to the Centre Region as a whole from 1960 through the 2000 census.

TABLE 2-4				
POPULATION				
AREA	1960¹	1980¹	1990¹	2000¹
Ferguson Township	3,832	8,105	9,349	14,063
Centre Region	34,147	62,015	71,633	79,406
¹ Data from the U.S. Census				

From 1980-1990, Ferguson Township's population grew approximately 34 percent while the Centre Region as a whole grew approximately 9 percent. Between 1990 and 2000,

Ferguson Township's population grew by more than 50 percent which is almost five times (5x) the rate of growth within the Centre Region as a whole.

General Demographics

Table 2-5 identifies the median age of the residents of the Township and the percentage of the population less than 18 years and over 65 years in 2000. Also noted is the percentage of older residents with some form of disability. Growth in this demographic may suggest the importance of providing recreational opportunities that are designed consistent with ADA regulations.

TABLE 2-5				
2000 GENERAL DEMOGRAPHICS¹				
AREA	MEDIAN AGE	UNDER 18 YEARS	OVER 65 YEARS	OVER 65 WITH A DISABILITY
Ferguson Township	31.8 years	22%	10%	23%
Centre County	28.7 years	18%	10%	36%
State of Pennsylvania	38.0 years	24%	16%	39%

¹ U.S. Census, 2000

The median age of the Township in 2000 was higher than the County, but lower than the State. Assuming the distribution of the population has not changed drastically since 2000, more than a fifth of the Township's population is less than 18 years of age while less than 1500 residents are over 65. Over the next several years, it is expected that the median age of the population and the percentage over 65 years will increase as baby boomers reach retirement age and retirees continue to migrate to the area.

Future Population Growth

Table 2-6 identifies the estimated future populations for Ferguson Township and the Centre Region based on forecasts by the Centre Region Planning Agency.

TABLE 2-6			
ESTIMATED FUTURE POPULATION			
AREA	2010	2020	2030
Ferguson Township	16,027 ¹	19,359 ¹	21,513 ¹
Centre Region	85,689	91,972	98,255

¹ Estimated population based on housing units and average population per household.
² Data estimated from Centre Region Planning Population Projections.

Over the next twenty (20) years, it is estimated that the population of Ferguson Township could increase by approximately 5,500 people or about 36 percent if current growth trends continue. The Region's population is anticipated to increase approximately 15 percent during the same time period.

SOCIO-ECONOMIC DATA

Income

Table 2-7 details the per capita income, household median income and average family size in Ferguson Township compared to the Centre Region, Centre County and the State of Pennsylvania. Income is directly related to leisure services. Higher levels of affluence are associated with higher levels of participation, varied interests and a willingness to pay for services.

TABLE 2-7			
2000 INCOME AND FAMILY SIZE¹			
AREA	PER CAPITA INCOME	MEDIAN FAMILY INCOME	AVERAGE FAMILY SIZE
Ferguson Township	\$22,724	\$62,461	3.00
Centre Region	\$22,900	\$62,334	2.99
Centre County	\$18,020	\$50,557	2.95
State of Pennsylvania	\$20,880	\$49,184	3.04

¹ U.S. Census 2000 (figures not adjusted for inflation)

While family size is relatively consistent in the State, County, Region, and Township, the table reveals that median family income is distinctly different when comparing the Township and Region with the County and the State. This same disparity is identified by the figures which indicate per capita income.

Housing

Table 2-8 identifies housing data related to Ferguson Township as well as the Centre Region, Centre County, and the State of Pennsylvania. Home ownership is one indicator of affluence.

TABLE 2-8				
2000 HOUSING UNIT STATUS ¹				
AREA	PERCENT OF HOUSING UNITS OWNER OCCUPIED	MEDIAN VALUE OF OWNER OCCUPIED HOUSING	UNITS THAT ARE SINGLE FAMILY DETACHED	UNITS BUILT SINCE 1990
Ferguson Township	59.6%	\$144,900	59%	36%
Centre Region	89%	\$129,367	44%	19%
Centre County	60.2%	\$114,900	57%	17%
State of Pennsylvania	71.3%	\$97,000	56%	10%
¹ U.S. Census 2000				

Ferguson Township's households include a wide variety of single family detached and attached homes, duplexes, quadraplexes, mobile homes, apartments and personal care homes. The Township is similar to both Centre **County** and the State of Pennsylvania in terms of the percentage of owner occupied housing units. However, Ferguson Township has the lowest percentage of owner occupied homes in the Centre **Region**, where the average is significantly higher than the remainder of the County. This may be due to the average value of housing in the Township or may be an indication of the family status of Township residents. This lower incidence of home ownership may also relate to the affordability of homes in the Township. Many families may simply be unable to afford their own home thus increasing the number of rental properties.

The Township's median value of owner occupied housing in 2000 is 12 percent more than the Centre Region, 26 percent more than Centre County and 49 percent more than the State of Pennsylvania. This tends to support the suggestion that home ownership rates are lower due to the high costs of homeownership in the Township

More than one-third of the Township's dwelling units were constructed in the last decade (1990-2000); nearly twice the amount of new units in the Region as a whole. This rate of growth impacts the Township's ability to provide the necessary infrastructure to support these new residents in a timely manner. Even land acquired as part of the development approval process cannot be immediately ready to serve as park and open space facilities to these new inhabitants. Although the Township should appropriately anticipate growth, it must rely on capital improvement planning to implement the expected park improvements. Thus, there may always be a discrepancy

between the demand for parkland and its availability for active recreation.

Employment

Table 2-9 shows the unemployment rate in 2000 of Ferguson Township, Centre County and the State of Pennsylvania.

TABLE 2-9	
EMPLOYMENT STATUS ¹	
AREA	2000 PERCENT UNEMPLOYMENT
Ferguson Township	1.6%
Centre County	3.3%
State of Pennsylvania	3.5%
¹ U.S. Census 2000	

In 2000 Ferguson Township had a significantly lower percentage of unemployment than Centre County and the State of Pennsylvania. The Centre Region continues to have one of the lowest unemployment rates in the State of Pennsylvania.

Education

Table 2-10 details the educational attainment level for Ferguson Township, the Centre Region, Centre County, and the State of Pennsylvania. Educational attainment is the strongest indicator of an individual's income potential, attitudes and spending habits.

TABLE 2-10			
2000 EDUCATIONAL ATTAINMENT ¹			
AREA	OVER 25 YEARS HIGH SCHOOL GRADUATE OR HIGHER	OVER 25 YEARS BACHELOR'S DEGREE OR HIGHER	OVER 25 YEARS GRADUATE DEGREE
Ferguson Township	95.0%	56.0%	29.0%
Centre Region	95.0%	59.0%	31.0%
Centre County	88.2%	36.3%	17.5%
State of Pennsylvania	81.9%	22.4%	8.4%
¹ U.S. Census 2000			

The Centre Region's over -25 population is more highly educated than that of the County or State. Ferguson Township residents are closely aligned with these regional

numbers. This is most likely due to the proximity of the University and the characteristics of the work force which supports the businesses located within the Township.

PUBLIC PARTICIPATION

The Ferguson Township Board of Supervisors solicited citizen input into the development of the Recreation, Parks and Open Space Plan by:

1. Appointing Township residents to the Ad Hoc Recreation, Parks and Open Space (RPOS) Planning Committee.
2. Providing a resident survey of Parks, Recreation and Open Space.
3. Scheduling public meetings to review the RPOS Committee's recommendations.

RPOS Planning Committee

In 2004 Ferguson Township began the selection process for the Ad Hoc RPOS Planning Committee whose members would be responsible for development of the Recreation Parks and Open Space Plan for the Township. Township staff developed a list of knowledgeable residents who should be involved in the development of the Recreation, Park and Open Space Plan. These persons included:

1. One Representative from the Ferguson Township Board of Supervisors
2. One Representative from the Ferguson Township Planning Commission
3. Ferguson Township Representative to the Centre Region Parks and Recreation Board
4. The Centre Region Director of Parks and Recreation
5. The Ferguson Township Director of Planning and Zoning

The range of recreation experience from the RPOS Planning Committee is broad. The following list identifies the membership in the RPOS Planning Committee:

1. George Pytel - Ferguson Township Supervisor
2. Bill Zeigler - Ferguson Township Planning Commission
3. Sue Mascolo - Ferguson Township Representative to the Centre Region Parks and Recreation Board
4. Dale Roth - Penn State Director of Recreation Services
5. Ronald Woodhead - Director of the Centre Region Parks & Rec. Agency
6. Trisha Lang - Ferguson Township Director of Planning and Zoning
7. Brad Ross – Biological Consultant
8. Donald Suit – Ferguson Township Planning Commission

PUBLIC INPUT AND REVIEW

Upon completion of the first draft of this plan copies were distributed for review to several different agencies. The Township solicited comment on the plan from the PA Department of Conservation and Natural Resources, Centre Region Planning Agency, Centre Region Planning Commission, Centre Region Parks and Recreation Department, Ferguson Township Planning Commission and Ferguson Township Board

of Supervisors.

In order to obtain input from the public, the following were done:

1. An article was placed in the Township Newsletter which identified the goals of the Plan and provided a survey for input to the Plan.
2. The Planning Commission reviewed the Plan during public meetings on November 23, and December 8, 2009.
3. On February 16, 2009, the Board of Supervisors received a presentation of the Plan at a public meeting.
5. In May 2008, the Township held an Open House which was attended by approximately 300 residents. One of the displays was the Recreation Plan. In addition a representative was on hand to receive comment and answer any questions raised.
6. On December 14, 2009, the Board of Supervisors held a public hearing to receive comment on the Update to the Parks, Recreation and Open Space Plan.

In general, although the public had opportunity to comment on the plan, there were no comments that significantly changed the content of the current Plan update.

PARKS, RECREATION AND OPEN SPACE SURVEY

In 2006, the Township distributed a Parks, Recreation and Open Space survey through the Township Newsletter to all households within Ferguson Township. This survey asked residents about their opinion of parks and open space, recreation programs, and the level of service and commitment to parks and recreation. Of the surveys that were sent out, 95 were returned; a 1.3% response rate. A sampling of the key survey results which have an impact on this Plan Update are identified below.¹ A copy of the entire survey is available at the Ferguson Township Office.

Based on the results of the survey, a broad set of assumptions influenced the development of the Ferguson Township Recreation, Parks and Open Space Plan. These include:

1. The availability of parkland is very important to the majority of residents of Ferguson Township.
2. Convenient access to Township parkland is very important to the residents of Ferguson Township.
3. Preserved open space is very important to Ferguson Township residents.
4. Ferguson Township Parks were visited on average 1-2 times/week by nearly one-half of those responding to the survey.
5. The attributes which attract visitors to the Township parks include open space,

¹ Note: Not all questions were answered by each individual and some questions asked for more than one response, therefore totals may not be 100%.

- trails, woods, and convenience.
6. Factors which discourage residents from using Township parks include distance, not having the desired facilities, and a lack of interest.
 7. The most desired improvements to the existing park system include natural areas, flush toilets, off-leash dog areas, and picnic areas.
 8. Ferguson Township residents are satisfied with the Township's efforts to provide parkland and other recreational opportunities
 9. Ferguson Township residents believe that the quality of the programs currently offered is adequate and that the level of park maintenance is high.
 10. Ferguson Township residents agree that more parkland is needed in the Township.
 11. Ferguson Township residents are generally satisfied with the amount and location of parkland in the Township
 12. Ferguson Township residents strongly support linking local parks with a bikeway network.
 13. Ferguson Township residents strongly agree that more effort should be placed on protecting environmental features of the Township. These areas include woodlands, wildlife areas, meadows, wetlands, streams, etc.
 14. A majority of respondents agree that more effort should be placed on providing fields for active recreation such as football, soccer, softball, etc.
 15. The majority of respondents agree that the development of Township parks should follow a master planning process.
 16. Ferguson Township residents agree that a portion of municipal taxes should be dedicated to open space / parkland acquisition and support placing this issue on the ballot as a referendum

With regard to the then proposed purchase of regional parkland on Whitehall Road, the survey results reveal the following:

1. The most important features to provide at this facility would include fitness trails, restrooms, parking areas, public gardens, and picnic areas.
2. The majority of respondents would access the site by motor vehicle although many indicated the intent to walk or bike
3. Facilities in the park should not target a single age group. However, facilities specifically for pre-school and college age individuals were the least supported.
4. Most of the respondents felt that the availability of a community-wide facility would be just as important in meeting their recreational needs. However, a considerable percentage felt it would not be as important as the local park sites.

These assumptions will be used in to assist in establishing the ultimate recommendations of the Plan Update.

EXISTING FACILITY AND OPEN SPACE INVENTORY

TOWNSHIP OWNED

There is a wide variety of open space located in the Township that is available to residents. The following table lists municipal parkland, acreage, and a summary of existing facilities at each location:

FAIRBROOK PARK

Fairbrook Park is a twenty-nine acre park located on the south side of Whitehall Road between Tadpole Road and the Fairbrook Subdivision. The southeast end of the park borders on the Russell E. Larsen Agricultural Research Center.

The park provides a wide variety of equipment and facilities which can be used by all age groups. The baseball fields and soccer fields are used for league play. There are no formal pedestrian or bicycle access points in the park.

AUTUMNWOOD PARK

Autumnwood park contains nine and one-half (9.5) acres and is located at the southeast end of the proposed Foxpointe subdivision. Vehicular access to the park is from Autumnwood Drive. There are no formal pedestrian or bicycle access points to this park

GREENBRIAR/SAYBROOK PARK

The Greenbriar/Saybrook park is an eight and one-half (8.5) acre park located between the Greenbriar and Saybrook subdivisions on the south side of Sleepy Hollow Road. Vehicular access to the park is through North Foxpointe Drive on the Saybrook side and Apple Green Drive on the Greenbriar side. Dedicated pedestrian and bicycle access exists via the Tudek/Circleville bike path.

HAYMARKET PARK

Haymarket Park is a twelve (12) acre park which is located at the southwest corner of the intersection of Blue Course Drive and Bristol Avenue. The southern edge of the property abuts the Stonebridge open space which is where the State College Area Little League baseball fields are located. Vehicular access to this park is via Blue Course Drive. Dedicated pedestrian and bicycle access is through the bike path which is located on the west side of Blue Course Drive.

HOMESTEAD PARK

Homestead Park is a ten (10) acre park located between Farmstead Lane, Berkshire Drive and Cambridge Drive in the Homestead Farms subdivision. Dedicated pedestrian access to the site is provided through three easements between the single-family home lots which surround the park. There are no bicycle paths which access the site although there is a walking/bicycle path which surrounds the perimeter of the park. Both bicycles and pedestrians can access the site from Yorkshire Drive.

MEADOWS PARK

Meadows Park is a four (4.0) acre park located on the east side of Timothy Lane in the Meadows subdivision. Vehicular access and on-street parking are from Timothy Lane. There is no dedicated pedestrian or bicycle access to this park.

OVERLOOK TOT LOT

The Overlook Tot Lot is located on a one(1) acre parcel at the eastern corner of Overlook Heights. This park is very small and is developed for small children only. The Clinton Avenue/McKee Street bike path connects the tot lot with Sunset Park in State

College Borough. Vehicles can only reach the site via East Clinton Avenue and, with the exception of the bike path, this is the only access for bicycles and pedestrians.

PARK HILLS PARK

Park Hills Park is a four (4.0) acre linear park located on the east side of Park Hills Avenue on the north side of Circleville Road. The only vehicular access is from Park Hills Avenue where parking is permitted along the street. There are three dedicated pedestrian easements which connect Glenwood Drive, Cherry Hill Road and Oxford Circle to Park Hills Park. There are no bicycle paths which connect with this park. The facilities at this park are geared toward younger children.

SUBURBAN PARK

Suburban Park is a ten (10) acre park located on the north end of Overlook Heights adjacent to Vairo Boulevard. Vehicle access is from Suburban Avenue.

TOM TUDEK MEMORIAL PARK

Tom Tudek Memorial Park is an eighty-seven (87) acre park located between Circleville Road, Martin Street, West Aaron Drive and Park Hills Avenue. Vehicular access to the site is currently via Herman Drive and Park Crest Lane. Access to the site for pedestrians and bicyclists is provided by the Tudek/Circleville Bike Path which extends through the site from Circleville Road to West Aaron Drive.

WESTFIELD PARK

Westfield Park is a 1.5 acre park located on the north side of Sunday Drive in the Westfield Subdivision. The park is situated so that the parkland dedication from future subdivisions can be added to this park to create a larger more community oriented park. Access to the park is from a future road to be built as additional land develops.

CENTRE REGION PARKS AND RECREATION FACILITIES NOT LOCATED IN FERGUSON TOWNSHIP

There are a wide variety of park and recreation facilities which are not located in Ferguson Township but are readily available for use by Township residents. The following list identifies the facilities, the acreage, and the recreation opportunities available at each location.

College Township – 180acres

Thompson Woods Playlot	1.8	
Harris Acres Parklet	2.0	
Mt. Nittany Terrace Parklet	2.7	
Oak Grove Parklet	2.92	
Nittany Orchard Park	6.3	Playground, tennis court, basketball court, youth ball field, gazebo
Moutainside Park	7.17	
Penn Hills Park	10.14	Youth ball field, play equipment
Slab Cabin Park	14.02	Picnic pavilion, playground, seasonal sledding slope, covered bridge
Dalevue Park	14.78	Playground, picnic pavilion, bike path, basketball, tennis court, volleyball, youth ball field
Fogleman Fields Park	15	Soccer fields, walking paths
Stoney Batter Natural Area	32.90	Hiking trail to Mt. Nittany overlooks
Spring Creek Park	33.99	Playground, horseshoes, picnic pavilions, sand volleyball, tennis courts, walking paths, adult softball field, adult baseball field, fitness unit, covered bridge, fishing, restrooms, maintenance building
Thompson Woods Preserve	36.6	Hiking trails, nature study

Shamrock Avenue Park	-----	Future development
Stearn's Crossing Park	-----	Future development

Harris Township – 64 acres

Country Place Park	4.1	Playground, half-court basketball
Blue Spring Park	8	Basketball, youth ball fields with seasonal soccer field, seasonal ice rink, playground, pavilion
Nittany View Park	9	Pavilion, playground, walking path, youth ball field, seasonal soccer field
Kaywood Park	10	Playground, pavilion, basketball court, youth ballfield
Stan Yoder Memorial Preserve	15	Walking paths, nature study
Eugene Fasick Park	18.3	Playground, bocce court, horseshoes, youth ball field, pavilion, basketball court, nature trails

Patton Township – 235 acres

Carnegie Drive Tot Lot	0.4	Play equipment, tot swings, spring riders, drinking fountain, benches, tables
Ridgemont Parklet	0.46	Basketball court, swing set, benches
Park Forest Tot Lot	0.85	Pavilion, playground
Graycairn Park	1.5	Intended to remain as open space
Ghaner Drive Parklet	2.21	Play equipment, swings, pavilion, drinking fountain, benches, tables
Cedar Cliff Park	2.48	Intended to remain as open space
Oakwood Park	4.33	Playground, pavilions, youth ball field, walking path, drinking fountain
Marjorie Mae Park	4.7	Play equipment, pavilion
Woodycrest Park	6.0	Playground, basketball court, youth ball field with seasonal soccer field, pavilion, drinking fountain
Ambleside Park	7.14	For Future Development
Graysdale Park	14.1	Playground, soccer field, youth ball field, basketball, pavilion, walking path
Green Hollow Park	15.64	Playground & tot lot, pavilion, tennis courts, basketball court, youth ball field
Circleville Park	37.69	Playground, dedicated soccer field, youth ball field, pavilion, disc-golf course, walking path, future development
Patton Wood's Natural Recreation Area	62.7	
Bernel Road Park	74.36	For Future Development

State College Borough – 115 acres

Central Parklet	0.5	Tot climbing apparatus, picnic tables, at-grade stage
Nittany Village Park	0.5	Playground, picnic tables
East Fairmount Park	1.5	Playground, picnic tables
South Hills Park	1.5	Playground, covered picnic table, basketball court
Smithfield Park	1.7	Playground, picnic pavilion, half-court basketball
Tusseyview Park	4.5	Playground, basketball, tennis courts, picnic pavilion
High Point Park	6.2	Playground, basketball, tennis court, youth ball field with seasonal soccer field, picnic tables
Thompson Woods Preserve	6.75	Hiking trails, nature study
Holmes-Foster Park	11	Picnic pavilions, playground areas, basketball court, horseshoes, bocce courts, restrooms
Orchard Park	19.4	Playgrounds, picnic pavilion, lawn volleyball court, tennis courts, adult softball field with seasonal soccer field, youth ball field, basketball court, bike path, walking path, amphitheater, restrooms
Walnut Springs Park	19.4	Hiking trails, nature study

Sunset Park	20	Playground, picnic pavilions, basketball court, exercise trail, horseshoes, youth ball field, hiking trail, restrooms
Lederer Park	21.8	Walking paths, arboretum, picnic pavilions

CENTRE REGION NON-MUNICIPAL RECREATION FACILITIES

Non-municipal recreation facilities located throughout the Centre Region include: The Pennsylvania State University Intramural Fields and athletic facilities such as Recreation Hall, White Building, Intramural Building, Bryce Jordan Center, Beaver Stadium, and various walking and bicycle paths located on PSU land. The Blue Golf course, located between the Teaberry Ridge PRD and West College Avenue on the east side of Corl Road, provides a public golf course for the Centre Region. Additionally, Toftrees Golf Course, PSU White Golf Course, Pebble Creek Miniature Golf Course, and various fitness facilities owned and operated as private business enterprises are available for residents.

Other non-profit, non-municipal facilities, acquired through the subdivision and land development ordinance provisions that require dedication of open space, are owned by various Homeowners Associations throughout the Township. This type of open space is private and intended to be for use only by the residents of the neighborhood development which it serves. Some of these are developed for active recreation and some accommodate passive recreation.

Centre Soccer Field	9.0	Young Scholars of Central Pennsylvania
Greenleaf Manor PRD Open Space	4.7	Greenleaf Manor Homeowners Association
Stonebridge PRD Open Space	9.75	Stonebridge Homeowners Association
Teaberry Ridge PRD Open Space	6.5	Teaberry Ridge Homeowners Association
Landings PRD Open Space	12.4	Landings Homeowners Association
Foxpointe PRD Open Space	13.9	Foxpointe Homeowners Association
Homestead Farms Open Space	5.7	Cato Associates & Ginther Family

Greenleaf Manor PRD Open Space

The Greenleaf Manor PRD Open Space consists of two (2) main lots. The first lot is 2.1 acres and is planned to be developed as private open space for the residents of the PRD with a basketball court, play equipment and benches.

The second open space area in the PRD is a 2.6 acre stormwater management facility which will be developed with a soccer field and parking area to be used as a regional facility.

Stonebridge PRD Open Space

The Stonebridge PRD Open Space is private open space located on two (2) separate lots. The first lot is located on the north side of Bristol Avenue, is 5.75 acres in size and contains two ball fields which are used exclusively by the State College Area Little League. The second open space area, located on the south side of Bristol Avenue, is 4.0 acres in size and contains a swimming pool, picnic pavilion, two tennis courts, volleyball court and picnic grove and is for the exclusive use of the Homeowners Association.

Foxpointe PRD Open Space

The Foxpointe PRD has 13.9 acres of open space of which 9.4 acres are dedicated to stormwater management

Landings PRD Open Space

The Landings PRD has three (3) open space areas which are for the residents of the

PRD only. The first area is a 7.4 acre parcel developed with a baseball field for use by the Teener League. This site is also proposed to be developed with a pavilion, grills, play equipment, and swings. The second area is a 4.2 acre stormwater management area to be developed with a soccer field, volleyball court, horseshoe pits and a playground. The third area is an 0.8 acre parcel which is proposed as a vacant passive recreation area that connects to Haymarket Park.

Teaberry Ridge PRD Open Space

The Teaberry Ridge PRD has two areas of open space. The first is the Tudek / Circleville Bikeway and a 6.5 acre natural area which extends along the eastern edge of the property. The second is another natural area and a walking path on the west side of Corl Road between Megan Drive and Sowards Place.

Homestead Farms Open Space

The Homestead Farms Open Space is 5.7 acres located between Valley Vista Drive and Berkshire Drive in the Homestead Farms III Subdivision. The land is partially wooded, partially meadow and does not have any improvements. At one time this land was offered for dedication to the Township, but was rejected due to the steep slopes. A small portion (0.9 acres) of the open space is privately owned and maintained by Ray and Jeannie Ginther, and the remaining section is owned by Cato Associates. Although the entire property is held in private ownership, it is available for public use.

COMMUNITY FACILITIES

Some recreational facilities, although located in one municipality, are available to all residents of the region. At some of these facilities, fees are charged to cover operating expenses. The table below identifies the name, address, and acreage of each such facility. As with the locally owned facilities, maintenance and programming of these are the responsibility of the Centre Region Parks and Rec Department.

Centre Region Senior Center	-----	131 S. Fraser Street #1 State College, PA
Houserville Elementary Ballfield	1.5	Houserville Elementary School State College, PA
Ferguson Elementary Ballfields	3	Ferguson Elementary School Pine Grove Mills ,PA
Wm. Welch Community Pool	3.15	670 Westerly Parkway State College, PA
Radio Park Elementary Ballfields	4	Radio Park Elementary School State College, PA
Park Forest Community Pool	4.4	2100 School Drive State College, PA
Millbrook Marsh Nature Center	62	614 Puddintown Road State College, PA
Oak Hall Parkland	68	102 Linden Hall Road State College, PA
Whitehall Road Parkland	75	Blue Course Drive State College, PA

EXISTING RECREATION PROGRAMS

The Centre Region Parks and Recreation Department coordinates recreation programs and services at Township Parks and other facilities throughout the Township and the Region. These programs and services are offered year round and serve all ages of people. The specific activities run by CRPR, Centre Soccer and various other

organizations that coordinate recreation programs that occur in Ferguson Township parks are identified in the following chart:

PROGRAMS AND ACTIVITIES IN FERGUSON TOWNSHIP PARKS	
Fairbrook Park	Softball, Soccer, Baseball, Neighborhood Park Program
Ferguson Elementary School	Neighborhood Park Program
Homestead Park	Softball, Soccer, Baseball, Neighborhood Park Program
Meadows Park	Neighborhood Park Program
Overlook Heights	No Programs or Activities
Park Hills Park	Neighborhood Park Program
Suburban Park	Softball, Tennis, Baseball, Neighborhood Park Program
Tudek Park	Softball, Soccer, Baseball

REGIONAL FACILITIES

The following list identifies regional park and recreational facilities located outside of the Centre Region. Most are located within a two hour drive, and all are open to the public. While many of these are State owned and operated, some are non-profit, and others are commercial business ventures.

Bald Eagle State Park - Located in Centre County off of State Route 150 - Facilities and activities include picnicking, ballfield, playground, beach, snack bar, fishing, boat rentals, boat mooring, boat launching, wheelchair accessible, bicycle rentals, ice fishing, ice skating, camping and showers.
www.dcnr.state.pa.us/stateparks/parks/baldeagle.

Black Moshannon State Park - Located in Centre County off of State Route 504 - Facilities and activities include picnicking, beach, snack bar, fishing, boat rentals, boat mooring, boat launching, wheelchair accessible, hiking, ice fishing, ice skating, camping and showers.
www.dcnr.state.pa.us/stateparks/parks/blackmoshannon

Greenwood Furnace State Park - Located in Huntingdon County off of State Route 305 - Facilities and activities include picnicking, ballfield, playground, beach, snack bar, fishing, wheelchair accessible, hiking, ice fishing, ice skating, camping and showers.
www.dcnr.state.pa.us/stateparks/parks/greenwoodfurnace

McCall Dam State Park - Located in Centre County off of State Route 192 - Facilities and activities include picnicking and fishing.
www.dcnr.state.pa.us/stateParks/parks/mccallsdam

Parker Dam State Park - Located in Clearfield County off of State Route 153 - Facilities and activities include picnicking, ballfield, playground, beach, snack bar, fishing, boat rentals, boat launching, wheelchair accessible, hiking, bicycle rentals, ice fishing, skating, camping and showers.
www.dcnr.state.pa.us/stateparks/parks/parkerdam

Penn Roosevelt State Park - Located in Centre County off of Interstate Route 322 - Facilities and activities include picnicking, fishing, wheelchair accessible, hiking, ice fishing, ice skating and camping.
www.dcnr.state.pa.us/stateparks/parks/pennroosevelt

Poe Paddy State Park - Located in Centre County off of Interstate Route 322 - Facilities and activities include picnicking, playground, fishing, wheelchair accessible, hiking and camping.

www.dcnr.state.pa.us/stateparks/parks/poepaddy

Poe Valley State Park - Located in Centre County off of Interstate Route 322 - facilities and activities include picnicking, playground, beach, snack bar, fishing, boat rentals, boat launching, boat mooring, hiking, ice fishing, ice skating and camping. www.dcnr.state.pa.us/stateparks/parks/poevalley

Reeds Gap State Park - Located in Mifflin County off of Interstate Route 322 - Facilities and activities include picnicking, playground, pool, snack bar, fishing, hiking and camping.

www.dcnr.state.pa.us/stateParks/parks/reedsgap

S.B. Elliott State Park - Located in Clearfield County off of State Route 153 - Facilities and activities include picnicking, ballfield, playground, hiking and camping.

www.dcnr.state.pa.us/stateparks/parks/sbelliott

Shaver's Creek Environmental Center - Located in Huntingdon County off of State Route 26 next to the Stone Valley Recreation Center - Facilities and activities include nature exhibits and education programs, hiking, picnicking and a raptor center. www.shaverscreek.org

Stone Valley Recreational Facility - Located in Huntingdon County off of State Route 26 - Facilities and activities include picnicking, fishing, hiking, boating, ice skating, lodge and cabin rentals. www.psu.edu/Stone_Valley

Tussey Mountain Ski Area - Located in Centre County off of State Route 322 - Facilities include ski slopes, restaurant, driving range, par three golf course, summer concerts and go carts. www.tusseymountain.com

Whipple Dam State Park - Located in Huntingdon County off of State Route 26 - Facilities and activities include picnicking, beach, snack bar, fishing, boat mooring, boat launching, wheelchair accessible, hiking, ice fishing and ice skating. www.dcnr.state.pa.us/stateParks/parks/whippedam

Sproul State Forest: The 278,000-acre Sproul State Forest is in western Clinton and northern Centre counties. The multiple-use management system provides forest-based recreational opportunities such as hiking, backpack camping, snowmobiling pleasure driving, and horseback, ATV, and mountain bike riding. All areas of Sproul State Forest are open to hunting and fishing. Camping permits are required before setting up camp on state forest lands. 570-923-6011

www.dcnr.state.pa.us/FORESTRY/stateforests/sproul

Alvin R. Bush Dam: This flood control dam is operated by the U.S. Army Corps of Engineers and creates 4.5 miles of natural, scenic shoreline. This is one of four dams in the flood control plan for the West Branch Basin of the Susquehanna River watershed. 570-923-1800

www.nab.usace.army.mil/recreation/bush.htm

Kettle Creek State Park: Kettle Creek State Park consists of 1,793 acres along Kettle Creek in Western Clinton County. The park is in a valley surrounded by mountainous

terrain and wilderness. Many of the existing recreational facilities arose from a joint flood control project developed by the U.S. Army Corps of Engineers and the former Pennsylvania Department of Environmental Resources.

www.dcnr.state.pa.us/stateParks/parks/kettlecreek

Kettle Creek Vista: Three miles west of the park, this vantage point provides a breathtaking view of the Kettle Creek Valley.

Pennsylvania Wilds is two million acres of public lands for hiking, biking, fishing, boating, hunting and exploration in northcentral Pennsylvania. Within the twelve-county region are; 27 state parks, eight state forest districts (1.3 million acres), 50 state game lands and Allegheny National Forest (500,000 acres). Highlights of the area are; elk watching, scenic Pennsylvania Route 6, Pine Creek Gorge (PA Grand Canyon), the darkest skies in the east at Cherry Springs State Park, and hundreds of miles of backpacking trails, bike paths and trout fishing streams. www.pawilds.com

Fort Roberdeau Historic Site and Natural Area is located near Altoona in Blair County, Pennsylvania. The rural **230-acre tract** features a reconstructed Revolutionary War stockade surrounding six log cabins. It also includes an 1858 barn containing exhibits and a museum shop, an education center in an 1860 farmhouse, three nature trails, picnic facilities, and White Oak Hall, a large multipurpose facility.

www.fortroberdeau.org

Canoe Creek State Park, 12 miles east of Altoona, is a modern day use facility developed during the Project 70 expansion era of state parks and was dedicated in 1979. The vast openness of this 958-acre park is exemplified with a panoramic view when cresting the hill on Canoe Creek Road. A 155-acre lake provides excellent year-round fishing, a popular swimming area and enjoyment for small pleasure boaters. Fields and woodlots are managed to provide diversified habitat for small game species and a variety of wildlife. Canoe Creek's proximity to nearby communities allows local residents to take a short pleasure drive and enjoy an evening of fishing, picnicking or walking. Within an hour's drive of the park are the world famous Horseshoe Curve, [Blue Knob Ski Area](#), State Game Land 166, and [Rothrock](#) and [Gallitzin](#) state forests.

www.dcnr.state.pa.us/stateparks/parks/canoecreek

Raystown Lake, an 8,300-acre flood control reservoir, is operated by the Corps of Engineers to provide flood control, fisheries enhancement, water quality, and recreational opportunities. Nestled between the ridges of Huntingdon County, adjacent to the southern portion of Rothrock State Forest, the visitor to this 29,300-acre Federal facility can participate in hiking, fishing, camping, recreational boating, hunting, picnicking, and many other outdoor activities. www.raystownlake.com

Rothrock State Forest <http://www.dcnr.state.pa.us/forestry/stateforests/rothrock>

Gallitzin State Forest consists of 2 separate areas of State Forest land located in Northern Bedford, Cambria, Indiana, and Northern Somerset counties. The total area of

State Forest land is 15,336 acres.

<http://www.dcnr.state.pa.us/forestry/stateforests/gallitzin>

Prince Gallitzin State Park this 6,249-acre site is in the scenic Allegheny Plateau Region of Pennsylvania. Large portions of the park can be seen from several easily accessible vistas. The major attractions to the park are the 1,600-acre Glendale Lake and the large campground. www.dcnr.state.pa.us/stateParks/parks/princegallitzin

R. B. Winter State Park covers 695 acres of the Ridge and Valley Province in central Pennsylvania. Located within Bald Eagle State Forest, the park lies in a shallow basin surrounded by rocky ridges covered with an oak and pine forest. The focal point of the park is Halfway Lake which is filled by spring-fed mountain streams and contained by a hand-laid, native sandstone dam. Open year-round, the park provides diverse opportunities for recreation.

www.dcnr.state.pa.us/stateParks/parks/rbwinter

The Tiadaghton State Forest is one of twenty forest districts created for the protection and management of Pennsylvania's forest lands. The Tiadaghton State Forest is comprised of approximately 215,500 acres of state forest land, most of which is in Lycoming County. Small portions extend into Tioga, Sullivan, Potter, Clinton, and Union counties. www.stateparks.com/tiadaghton.html

Ravensburg State Park is located in Clinton County on PA 880. Twenty-one non-reservable, tent-camping-only sites are available. Visitors can also enjoy hiking, picnicking and cold-water fishing. The park lies in a cozy, steep-walled gorge carved by Rauchtown Run through the side of Nippenose Mountain. A northern hardwood forest blankets the bottomland along this spring-fed stream.

www.dcnr.state.pa.us/stateParks/parks/ravensburg

Sand Bridge State Park located on PA 192 east of R.B. Winter, includes picnic tables, pavilions and restrooms. The park also offers stream fishing.

www.dcnr.state.pa.us/stateParks/parks/sandbridge

State Forest Picnic Areas - Located at various points in surrounding counties.

Mid State Trail The Mid State Trail System (MST) is a long distance hiking trail and its side trails in central Pennsylvania. The current northern end is at the West Rim Trail on Bohem Run north of Blackwell and the southern end is a junction with Green Ridge Hiking Trail in Maryland at the Mason-Dixon line. The MST is almost entirely on public land: state forests, game lands and parks.

www.dcnr.state.pa.us/FORESTRY/hiking/midstate

ADMINISTRATION AND THE PLANNING PROCESS

At this time, CRPR maintains eleven (11) parks within Ferguson Township and more than 40 parks throughout the Centre Region. The eleven (11) Township owned parks within Ferguson Township create a combined total of 258 acres of parkland. This includes: Fairbrook Park, Meadows Park, Suburban Park, Overlook Heights Tot Lot, Tom Tudek Memorial Park, Park Hills Park, Homestead Park, Haymarket Park, Autumnwood Park, Greenbriar / Saybrook Park, and Westfield Park as well as an eighty (80) acre preserve formerly owned by the Township Municipal Authority. In addition there are five (5) bikeways. These bikeways are the Tudek / Circleville, the Cato / Stonebridge Bikeway, the Mckee Street Bikeway, the Blue / White Bikeway and the Vairo/Suburban Bikeway.

The bikeways are provided and maintained solely by Ferguson Township.

THE MUNICIPALITIES PLANNING CODE (MPC)

Article III, Section 301 of the Municipalities Planning Code addresses the contents of a municipal comprehensive plan. According to the MPC, this document "...shall include but need not be limited to..." such basic elements as:

- (4) A plan for community facilities and utilities, which may include public and private education, recreation, municipal buildings, fire and police stations, libraries, hospitals, water supply and distribution, sewerage and waste treatment, solid waste management, storm drainage, and flood plain management, utility corridors and associated facilities, and other similar facilities or uses.
- (6) A plan for the protection of natural and historic resources to the extent not preempted by federal or state law. This clause includes but is not limited to, wetlands and aquifer recharge zones, woodlands, steep slopes, prime agricultural land, floodplains, unique natural areas and historic sites.

In addition:

- (d) The municipal, multi-municipal or county comprehensive plan may identify those areas where growth and development will occur so that a full range of public infrastructure services, including sewer, water, highways, police and fire protection, public schools, parks, open space and other services can be adequately planned and provided as needed to accommodate growth.

As noted below, the Centre Region Comprehensive Plan, a multi-municipal planning document, contains a chapter on Open Space Conservation and Preservation that qualifies as the required basic element identified by the MPC. However, adoption of this Township Recreation, Park and Open Space Plan Update, as an adjunct to these provisions in the Regional Comprehensive Plan, can provide more guidance at the local level, and result in the provision of facilities and services that are consistent with the needs and desires of the Township residents. Additionally, it is intended that this RPOS Plan Update may serve to identify how local efforts can begin to address the regional

goals highlighted by the Plan.

RELATIONSHIP TO CENTRE REGION COMPREHENSIVE PLAN

The Centre Region Comprehensive Plan, adopted in June 2000, provides a framework for regional cooperation in all aspects of comprehensive planning and community decision making. The 2000 Plan maintains the intent and regional context of the 1990 plan, but with new emphasis on detail and implementation. To this end, the Plan includes Goals, Policies, Initiatives and specific Action steps to aid in achievement of the various objectives. Goals of the adopted Plan speak to the necessity of assessing the recreation, park, and open space needs of each municipality and providing the appropriate protection for community resources at the local level. These include:

- Balance community growth while protecting and enhancing the Centre Region's environmental, historic and cultural resources.
- Direct the majority of future growth to areas within the Regional Growth Boundary so that new development can be efficiently served by public utilities, services, and transit.
- Obtain additional parkland and open-space areas, and provide a broad range of recreational opportunities.

The Open Space Conservation and Preservation chapter of the Plan details several Policies and Initiatives that help guide the content of the Township's Recreation, Parks, and Open Space Plan. It is intended that this update to the Recreation, Parks, and Open Space Plan be consistent with these adopted policies and further, that it provide details on their implementation at the local level.

Policies:

Coordinate inter-connected open-space systems for the Centre Region based on existing permanent open space resources, sensitive natural features, and projected future development patterns.

Encourage the placement of conservation easements on significant regional natural or open space resources.

Develop, with the support of the Centre Region Municipalities, municipal park plans, fee-in-lieu regulations and local tax financing strategies to acquire land within the Centre Region for open-space and recreational activities.

Initiatives:

Use current survey data and/or a voter referendum to assess the public's attitude toward the public purchase of lands for preservation and recreational uses

Determine all sources of financing strategies applicable to the acquisition of lands for preservation and recreational uses

Require pedestrian and bikeway trail connections as part of the land development approval process when existing trails are adjacent or nearby a future land development site.

Identify open-space and natural resource areas that will provide the basis for future decisions in the land development review process regarding protection and acquisition of these areas.

Identify and provide information on potential sites that contain significant natural and open space features.

Coordinate activities with property owners, municipalities and environmental organizations in the acquisition of conservation easements.

Other chapters of the adopted Comprehensive Plan, including those on Community Design, Historic Preservation, Future Development Patterns, Transportation, and Environment & Natural Resources also provide relevant objectives that guide the Township in development of this RPOS Plan. These are:

Policies:

Preserve the Centre Region’s historic resources and maintain regional community identity, history, and culture.

Preserve and enhance the Region’s open-space areas

Preserve steep slopes and existing topographic features of the Centre Region during the planning and development process.

Protect floodplains, wetlands, and stream corridors within the Spring Creek and Spruce Creek Watersheds.

Protect the quality of the Region’s groundwater resources through efficient and effective land-use management

Limit land development activities in areas identified as habitats for threatened and endangered plant and animal species in the Centre County Natural Heritage Inventory.

Transportation projects and programs that provide support for a broad range of transportation options and that decrease the Region’s dependence on the private automobile are critical to meeting future travel needs.

Initiatives:

Develop a continuous, interconnected system of pedestrian and bicycle facilities, which can be implemented in phases, to meet the needs of existing developed areas and future growth needs.

Encourage municipal regulations to provide site design features such as pedestrian and transit amenities, parks, woodland protection, landscaping, and building construction consistent with the character of the site location.

Encourage and maintain interconnections between open-space areas.

Implement regulations to protect identified aquifers, floodplains, wetlands, waterways, future park locations, and valuable woodlands.

Encourage the continued use of the Official Map provisions to identify and preserve future open-space areas.

Implement riparian buffer regulations to filter run-off, reduce stream temperatures, provide open space and wildlife habitat and prevent the development of parking lots and structures within close proximity of a stream corridor,

Prohibit development activities within 100-year floodplain boundaries.

Identify the one-year zone of contribution for all public well sites in the Centre Region.

Develop and implement wellhead protection regulations in the Centre Region.

Direct intensive development activities away from groundwater recharge areas identified within the one-year zone of contribution.

Centre County and the Centre Region municipalities should develop an update to the 1991 Centre County Natural Heritage Inventory.

Encourage municipal land development and subdivision regulations that protect identified threatened and endangered species.

Although generally consistent with the stated goals of this Recreation, Parks, and Open Space Plan Update, many of these statements deserve candid consideration; as they have not been the focus of previous planning efforts in the Township. One goal of this Plan Update is to ensure that these fundamental tenets of the preservation and conservation of resources are adequately addressed by the Township.

In keeping with the provisions of the Municipalities Planning Code, chief among these concerns is the adequate protection of resources such as wetlands and aquifer recharge zones, woodlands, steep slopes, prime agricultural land, floodplains, and unique natural areas and historic sites within the Township. While existing regulations provide a level of protection for certain features such as floodplains, steep slopes, and agricultural land, there are many Township resources that are not provided with any protection at the local level. As a result, many of these features can be impaired or destroyed by development projects and/or construction practices, as well as through the actions of individual property owners who may not be aware of the presence or value of these resources.

LOCAL ORDINANCES

There are two existing Township ordinances which impact the preservation of parkland / open space during the subdivision / land development process. These Ordinances are the subdivision ordinance, Chapter 22, Section 513.2C, and the Zoning Ordinance which includes provisions for Planned Residential Developments (Chapter 27, Section 407) and Traditional Town Developments (Chapter 27, Section 701). The following sections describe how these regulations can affect the amount and location of park and open space provided in the Township.

Subdivision Ordinance

The following list highlights the current parkland requirements of the subdivision

ordinance which apply to both single and multi-family residential developments.

The total acreage required to be dedicated for each development is based on an acreage per person calculation as follows:

Total average number of people per dwelling unit (2.54 people per unit) x .024 acres per person x 65% (developable acreage)

For the Township to accept land for dedication, the park must have the following attributes:

- Access - Must be accessible to all residents. Minimum frontage should be 50 feet if adjacent to public street.
- Location - Located equally to serve all residents.
- Shape - Suitable to accommodate activities which meet needs of residents.
- SWM - May not be developed in stormwater management basin.
- Soils - Soil shall be suitable for the intended park uses. No parkland may be located on or within any drainageway, wetland area, steep slope area or stormwater detention basin, with the exception that up to 25 percent of the total parkland may be located within a floodplain with approval of the Board of Supervisors.
- Size - The minimum parcel size shall be no less than 4 acres.
- Slope - The majority of the park shall have a slope of no more than 4 percent, and the average slope of the park, as measured perpendicular to the contour lines, shall not exceed 8 percent.
- Unity - Fewer larger pieces rather than several smaller pieces.
- Utilities - Utilities shall not cross land above ground. May be underground.

Under certain conditions, the applicant may be permitted to contribute fee-in-lieu rather than acreage for parkland. This money is required to be used to enhance public recreation areas which will directly benefit future inhabitants of the development or subdivision for which the fee was provided.

The fee-in-lieu payment is determined using the following calculation:

$$D \times 2.54 \text{ person/d.u.} \times \text{Parkland Fee/person} = \text{Parkland Fee - in - Lieu}$$

D= Number of Dwelling Units

Parkland Fee /person = Fee established by Resolution of the Board

Zoning Ordinance

- A. The following list highlights the parkland requirements of the existing PRD regulations as outlined in the Township Zoning Ordinance.

The percent of acreage required to be dedicated for each PRD is based on the total number of dwelling units per acre as follows:

<u>Residential Dwelling Units Per Acre</u>	<u>Required Common Open Space Percentage</u>
1-4.9	15
5-9.9	18
10-14.9	20
15-19.9	25
>20	25

The requirements for the common open space dedicated as part of a PRD include:

- (1) The location, shape, size and character of the common open space shall be provided in a manner to meet the needs of the planned residential development and the criteria of the Subdivision and Land Development Ordinance, §§22-513.2.D(1)-(6); 22-513.2.G.
- (2) Common open space shall be used for amenity or recreational purposes. The uses authorized for the common open space must be appropriate to the scale and character of the planned residential development, considering its size, density, expected population, topography and the number and type of dwellings to be provided.
- (3) Adequate access shall be provided to the open space from all dwelling units in the PRD. This includes providing connections to existing and proposed sidewalks and bikeway systems.
- (4) A minimum of 50% of the required open space shall be contiguous land.
- (5) A minimum of 50% of the required open space shall be suitable for recreation purposes (i.e., no floodplain, wetlands, steep slopes, sinkholes).
- (6) Common open space must be suitably improved for its intended use, but common open space containing natural features, existing trees and ground cover worthy of preservation may be left unimproved. The buildings, structures and improvements which are permitted in the common open space shall be appropriate to the uses which are authorized for the common open space having regard to its topography and unimproved condition.
- (7) The development schedule which is part of the development plan must coordinate the improvement of the common open space, the construction of buildings, structures, and improvements in the common open space, and the construction of residential dwellings in the planned residential development.
- (8) The use and improvement of the common open space shall be planned in relation to any existing or proposed public or semipublic open space which adjoins or which is within 1,500 feet of the perimeter of the planned residential development.

There are five PRDs in existence within the Township. However, three of these were approved prior to the adoption of the ordinance standards indicated above. As a result,

the total open space provided by these developments is somewhat less than is currently. As a result, it may be recommended that this method of obtaining and/or owning open space not be continued required. In addition, since the majority of this open space is in private ownership, it is not available to all residents in the Township and therefore does not contribute toward the inventory of parkland used to calculate the Township's ability to meet the needs of the majority of residents..

The provisions for Traditional Town Development, also found in the Zoning Chapter, require that the provision of open space within the development conform to the following standards:

1. A minimum of 50% of the site proposed for development is to be devoted to useable common open space. Through the use of incentives offered in subsection 4.F, the amount of required useable common open space may be significantly reduced. However, in no case is less than 25% of a site permitted to be devoted to the provision of usable common open space, including permitted percentages of public areas.
2. All common open space reserved is to be designed for one or more of the following uses:
 - Community green, square, or commons.
 - Community garden or park.
 - Streams, ponds and other natural or man-made bodies of water.
 - Playground or tot-lot.
 - Bikeway, greenway, trail or environmental corridor.
 - Active recreational facility.
 - Public space.
 - Conservation area/protected natural area which may include: woodlands, wildlife corridor(s), meadow, horticulture, or wetland that is incorporated into the design for stormwater management.
3. Stormwater management facilities such as detention basins and swales are only permitted to be included to the extent that the open space exceeds the 25% required minimum, or through the use of one or more design incentives.
4. In addition to responding to the unique conditions and environmental resources of the parcel(s), the open space provided on each site is to be responsive to the needs of the community as expressed in the Ferguson Township Recreation, Parks, and Open Space Plan and, to the extent feasible, is required to provide useable play or recreation areas, or equipment, that is conveniently accessible to residents throughout the community. Conformance with the provisions of the Subdivision and Land Development Ordinance, §22- 513.2.G (1) - (4), and .H is expected as well.

The reservation of passive parkland which may include wooded sites, formal gardens, conservation areas, and open grass spaces may also be included. However, such facilities are not permitted to account for more than 40% of the

required common open space. Where the existence of adequate play or recreation areas within walking distance of a proposed TTD or associated Mixed Residential Area can be shown, the percentage of passive parkland permitted to be credited toward the total required common open space may be raised to as much as 55%.

5. Public space is required to serve as a focal point and may comprise up to 10% of the useable common open space provided. Such areas shall be subject to the same maintenance criteria as identified by §27- 702.4.C(4)(m).

6. All common open space is to be publicly accessible either from a public street or public area, and/or from a pedestrian/bicycle network that links various playgrounds, parks, commons and greens to each other as well as to the developed portions of the site. Land designated as common open space shall be suitable for the purpose specified.

7. Each Traditional Town Development or associated Mixed Residential Area site that includes 50 or more dwelling units is required to include at least one public square or green with a minimum size of 20,000 square feet. Other squares, greens, commons, or public areas of not less than 10,000 square feet in area shall be dispersed throughout the development. Each dwelling unit shall be situated so as to be located no more than 1,000 feet from a commons, square, green, or trail.

The addition of the TTD zoning district to the Zoning Ordinance created an opportunity for the Township to obtain a significant amount of parkland in an area where the previous Recreation, Parks, and Open Space Plan called for the provision of Community and/or Neighborhood Parkland. The TTD regulations contain language that seeks to preserve the unique features of a site, such as woodland, floodplain, and steep slopes, in addition to the traditional emphasis on providing land that will be available for active recreational pursuits. The text of the zoning district also calls for all open space within the future development to be linked through the provision of pedestrian greenways, bikeways, or other off-street corridors. This will facilitate the Township's ability to incorporate these areas into the existing park infrastructure while limiting the expenditure of taxpayer dollars to do so.

The addition of the TTD zoning district to the Township's Zoning map occurred through the rezoning of acreage previously zoned for Industrial development and adjacent acreage previously zoned RA or rural agricultural. Combined, this area constitutes approximately 350 acres that is located within the existing Regional Growth Boundary. If the development of this land adheres to the requirement to preserve 50% in open space, a total of 175 acres will be added to the Township's parkland inventory. Even at the minimum 25% reservation, more than 87 acres would be set aside for use as open space.

In 2008, an ordinance amendment was instituted to allow the collection of a fee for the

master planning of parkland. This fee of \$165.00 per dwelling unit will be collected when parkland is offered for dedication.

PARK ACQUISITION AND DEVELOPMENT POLICY

Ferguson Township acquires and owns parkland and completes the capital improvements at each park site. The Township generally acquires parkland through the ordinance provisions described above. Then, based on financing constraints and the adopted Capital Improvements Plan, the Township develops the land and purchases or constructs the equipment and facilities. Details of the current CIP, which budgets funds through 2012, can be obtained from the Township.

As a general policy, the Township considers a park master plan good for approximately 15 years. However, if grant funding requires a newer master plan, the Township will evaluate updating a master plan prior to the 15 year limit. Where the capital improvements will require a substantial time frame for implementation, the Township might consider a phased approach to Master Planning for parkland. This would allow new input at appropriate intervals – perhaps in five (5) year increments, consistent with the capital improvement budget.

The existence of a master plan helps the Township plan and budget for park development and improvements on a yearly basis. The Township may apply for a grant or use capital funds to develop either a portion of or the entire park. Decisions regarding the timing and amount of funds expended are a product of the Capital Improvements Planning process. However, this Recreation, Park and Open Space Plan Update should provide appropriate guidance for this decision-making so that residents can better understand how the Township's efforts to provide park and recreation opportunities on a community-wide basis relate to the available funding and its distribution for Township services.

CLASSIFICATION SYSTEM

According to the National Recreation and Park Association publication Open Space Guidelines & Standards, the following are classifications for local and regional recreation open space:

Mini-Park: Specialized facilities of an acre or less that serve a concentrated or limited population or specific group such as tots or senior citizens. The service area is less than ¼ mile. They are generally located within neighborhoods and in close proximity to apartment complexes, townhouse developments, or housing for the elderly. NRPA recommends .25 to .5 acres/1,000 population. **2020 need: 4.75 -9.5 acres**

Neighborhood Park/Playground: Area(s) for intense recreational activities such as field games, court games, crafts, playground apparatus area, skating, picnicking, wading pools, etc. The service area is ¼ mile to ½ mile and the expected size is 15+

acres. These parks are suited for intense development and are easily accessible to the neighborhood population with safe walking and bike access. NRPA recommends 1.0 to 2.0 acres/1,000 population. **2020 need: 19-38 acres**

Community Park: Area(s) of diverse environmental quality. May include natural features such as water bodies and areas suited for intense development. The service area is a 1 to 2 mile radius and the expected size is 25+ acres. NRPA recommends 5.0 to 8.0 acres/1,000 population. **2020 need: 95-152 acres**

Regional/Metropolitan Park: Area(s) of natural or ornamental quality for outdoor recreation such as picnicking, boating, fishing, swimming, and camping, contiguous to or encompassing natural resources. The service area is within a one hour drive and the anticipated size is 200+ acres. NRPA recommends 5.0 to 10.0 acres/1,000 population.

Recent research on the use of Recreation, Park and Open Space Standards and Guidelines by the NRPA suggests that few jurisdictions feel that nationally prescribed minimums by park type are feasible. The NRPA recommends that a community use the guidelines for guidance only, and determine their own mix of recreation needs. This can be accomplished by completing a Level of Service analysis. This is a detailed analysis that outlines the recreation activity menu, open space standards, present supply, expressed demand and minimum population service requirements for each park class and the entire park and recreation system.

Rather than attempt to conform to the NRPA established guidelines for recreation facilities or complete an in-depth level of service analysis, the RPOS Planning Committee recommends that the Township deal with future equipment/facility needs through the master plan process for each park, through general citizen input, special interest group input and through input from the CRPR Department and Recreation Board.

Assuming build-out within the regional growth boundary, the Township is anticipating the addition of 1312 dwelling units, or 3,332 new residents by the year 2020. Using NRPA guidelines, existing demographics, expected community parkland acquisition, and anticipated future development, the Township's current parkland resources appear sufficient to address this growth. An update to this plan, which would be scheduled for 2012, will provide an evaluation of this assessment

If needed in the future, the Township could undertake a detailed level of service analysis to determine facility needs.

RECOMMENDATIONS

The RPOS Planning Committee has defined through the development of this plan, a set of recommendations to be considered by the Township Board of Supervisors. The recommendations are divided into five categories: General, Parks and Recreation, Ordinance Revisions, Regional, and Financing and are listed below. Upon approval of this plan, Township staff should pursue implementation of the recommendations.

GENERAL

1. The Township should adopt this update to the Recreation, Parks and Open Space Plan to be used as a guide for future park, recreation and open space development and to continue the Township's compliance with the PA Municipalities Planning Code.
2. This Recreation, Parks and Open Space Plan should be updated again in five years to assure that the proposed changes are consistent with anticipated development.
3. The Board should establish an advisory committee to oversee implementation and updating of the Plan and to advise on priorities.

PARKS, RECREATION AND OPEN SPACE

1. The Township should adopt a minimum set of standards for parkland development. The recommendations for minimum development of parkland are:
 - a. Each park which has been only partially developed should be fully developed to meet the master plan recommendations.
 - b. Each park which has not been developed should have a master plan completed and development started in incremental stages.
 - c. During the master planning process the Township should ensure that there is an appropriate mix of active and passive recreation areas in each park to meet the needs of the park users. In addition, the public should be actively involved in determining the facilities that are constructed within the park.
 - d. The minimum facilities within each park should include a playground, picnic area, active recreation area and a park trail that connects to adjacent bikepaths.
 - e. The facilities planned in each park should be flexible in use (ie. Dual soccer and ballfield) and should be able to be converted to meet changing needs.
 - f. The Township should provide CIP funding each year to develop portions of the parks.
2. The Township has established and should continue to utilize a standard master planning process as outlined below:
 - a. A park planning consultant is retained to prepare the master plan.
 - b. A public meeting is held to obtain input from the public prior to the development of alternatives.
 - c. The consultant prepares several alternative conceptual plans based on citizen input.
 - d. A second public meeting is held to obtain input on the individual concepts and to determine which alternate or combination of alternatives is preferable.

- e. The consultant prepares a final master plan alternative based on input from the public which is reviewed by the Board of Supervisors.
 - f. A public hearing is held by the Board of Supervisors prior to adoption of the master plan.
 - g. The Township may apply for a grant or use capital funds to develop either a portion of or the entire park.
 - h. The Master Plan design should be posted at each park location.
 - h. As a general policy, the Township considers a park master plan good for approximately 15 years. If grant funding requires a newer master plan, the Township will evaluate updating a master plan prior to the 15 year limit. In addition, if the implementation of the Master Plan improvements has not been undertaken within thi 15 year time frame, the Township will consider redoing the Master Plan.
3. The Township should complete development of partially developed parks. The partially developed parks are:
- a. Homestead Park
 - b. Fairbrook Park
 - c. Meadows Park
 - d. Suburban Park
 - e. Tudek Park
 - f. Haymarket Park
 - g. Greenbriar / Saybrook Park
 - h. Autumnwood Park
4. The Township should continue to utilize the Official Map to designate future parkland locations
5. The Township should continue to utilize a regional master planning process for the development of community parkland.
6. The Township should determine the status of the following bike paths and, if appropriate, depict on the Official Map.
- Bikepath 2 (BP-2):** A bikepath independent of the roadway that extends from the end of the Tudek / Circleville bikeway at Teaberry Ridge to the multi-use trail that extends east across the PSU Golf Course to North Atherton Street.
- Bikepath 4 (BP-4):** An on-road bike lane that extends from the Tudek / Circleville bikepath north along Farmstead Lane to Homestead Park.
- Bikepath 7 (BP-7):** A bikepath aligned with the roadway that extends from Foxpointe Drive along Old Gatesburg Road west and then along the entire length of Nixon Road from Old Gatesburg Road to Sunday Drive in Pine Grove Mills.
- Bikepath 8 (BP-8):** An on-road bike lane along Nixon Road from Sunday Drive to Pine Grove Road (Route 45) and along Pine Grove Road from Meckley Drive west to Wyoming Avenue.
- Bikepath 11 (BP-11):** A bikepath independent from the roadway on the south side of Whitehall Road from the Township Boundary with the Borough of State College west to West College Avenue.
- Bikepath 13 (BP-13):** An on-road bike lane along Bristol Avenue from Pamela Court east to West College Avenue.
- Bikepath 14 (BP-14):** An on-road bike lane along Concord Drive from Bristol Avenue north to the bikepath through the Good Hope Farms II open space.
- Bikepath 15 (BP-15):** An on-road bikepath along Park Center Boulevard from Bristol Avenue to Qual Run Road.

- Bikepath 17 (BP-17):** A bikepath aligned with the roadway along Science Park Road from West College Avenue to Old Gatesburg Road.
- Bikepath 18 (BP-18):** A bikepath independent from the roadway from Vairo Boulevard to Curtin Road and south along the eastern edge of Overlook Heights to the Clinton Avenue / McKee Street bikepath.
- Bikepath 19 (BP-19):** A bikepath independent from the roadway that extends from the Ryder property along the Western Inner Loop, west along the old railroad bed to Foxpointe Drive.
- Bikepath 22 (BP-22):** The bikepath along Foxpointe Drive should be identified as a bikepath aligned with the roadway.
- Bikepath 23 (BP-23):** The bikepath along the Western Inner Loop and Blue Course Drive should be identified as a bikepath aligned with the roadway.
- Bikepath 24 (BP-24):** The bikepath along Old Gatesburg Road from Foxpointe Drive to the Western Inner Loop should be identified as a bikepath aligned with the roadway.
- Bikepath 25 (BP-25):** The bikepath along Science Park Road and Valley Vista Drive should be identified as a bikepath aligned with the roadway.
- Bikepath 26 (BP-26):** The bikepath from Foxpointe Drive to Sandy Drive should be identified as a bikepath independent from the roadway.
- Bikepath 27 (BP-27):** The bikepath along Bristol Avenue from Park Center Boulevard to Blue Course Drive should be identified as a bikepath aligned with the roadway.
- Bikepath 28 (BP-28):** The bikepath along Park Center Drive should be identified as an on-road bike lane.
- Bikepath 29 (BP-29):** The bikepath from Foxpointe Drive to Concord Drive should be identified as a bikepath independent from the roadway.
- Bikepath 30 (BP-30):** The bikepath along Enterprise Drive should be identified as an on-road bike lane.
- Bikepath 31 (BP-31):** The bikepath along Cato Avenue from Enterprise Drive to Research Drive should be identified as an on-road bike lane.
- Bikepath 32 (BP-32):** The bikepath from the Western Inner Loop east across the PSU Golf Course should be identified as a bikepath independent from the roadway.
- Bikepath 36 (BP-36):** The bikepath which extends from Toftrees to the Tudek/Circleville Bikepath through the Overlook Heights Tot Lot should be identified as a bikepath independent from the roadway.
- Bikepath 37 (BP-37):** The bikepath which extends from the end of the Tudek/Circleville Bikepath along West Aaron Drive, Park Lane, and Devonshire Drive through to the Township border should be shown as an on-road bike lane.

7. The Township's Official Map should be revised to add the recommended open space areas. The recommended open space areas are:

Open Space 1 (OS-1): Area adjacent to Overlook Heights (described in Section 2.1) which is owned by PSU and will be developed as an arboretum.

Open Space 2 (OS-2): The Miller Caves, Scotia Barrens, and Beaver Branch Gorge

8. The Township should continue to pursue the purchase of agricultural conservation easements in order to manage growth and to preserve the industry of farming. This will allow the cost effective provision of services to residents located within the growth boundary.
9. The Township should limit the rezoning of RA land outside of the growth boundary as a strategy for the preservation and provision of adequate open space.
10. The Township should pursue additional forms of open space preservation such

as greenways and linear parks.

11. The Township should coordinate the timing, funding, location, and maintenance of bikepaths with adjacent municipalities where connections are feasible.
12. The Township should continue to pursue the opportunity to purchase open space adjacent to existing park facilities to expand recreational opportunities.

ORDINANCE REVISIONS

1. The Township Subdivision Ordinance and zoning Ordinance should be updated regularly to ensure consistency with the goals and objectives of this Plan.
2. The zoning ordinance should be reviewed regularly to determine whether there is a need to revise the requirements to assure the protection of environmentally significant areas of the Township.

REGIONAL/COMMUNITY

1. The Township should actively support the acquisition and continued operation of other parks and recreation facilities in the Centre Region. Many facilities, although located in adjacent municipalities, serve the residents of Ferguson Township. Some facilities, such as the Millbrook Marsh, Welsh and Park Forest Pools and the Senior Center are designed to serve the region. The recently acquired Oak Hall and Whitehall Road parkland parcels are also examples of facilities with a regional focus. These community facilities contribute to the level of service enjoyed by residents throughout the region.
2. The Township should utilize the services of CRPC to ensure that the plans of adjacent municipalities are compatible with this Plan Update.
3. The Township should continue to work with COG to support the regional funding of acquisition, development and operations for parks, trails and open space.

FINANCING

1. The RPOS Planning Committee recommends that increasing taxes for the purpose of developing, maintaining and operating recreation and park facilities should be avoided.
2. The Township should pursue creative funding alternatives to develop the parks and bikepaths and preserve open space
3. The Township should continue to set aside a portion of each year's budget for parkland purchase or development.
4. The Township and CRPR should continue, and look for opportunities to expand,

the program for accepting financial contributions to acquire, develop and maintain parkland.

5. The Township and CRPR should continue, and look for opportunities to expand, the Park Partners program to maintain parks and recreational facilities.
6. The Township and CRPR should continue to apply for available grants on a yearly basis.

Board of Supervisors Request – Pennsylvania Cap and Trade Petition

From: Sent: Pribulka,David
Subject: Wednesday, January 2, 2019 8:05 AM
Attachments: FW: Pennsylvania Cap and Trade Petition
PA auction cap and trade petition.docx; Draft EQB Regulation.docx; Exhibit A - Identification of Petitioners.docx; EQB Rulemaking Petition fact sheet 11.17.18.docx

From: Peter Buckland <pdbuckland@gmail.com>
Sent: Wednesday, January 2, 2019 6:40 AM
To: Buckland,Peter
Subject:

<http://www.paenvironmentdigest.com/newsletter/default.asp?NewsletterArticleID=45184>

From: Buckland,Peter
Sent: Wednesday, January 2, 2019 6:26 AM
To: Pribulka,David <dpribulka@twp.ferguson.pa.us>
Subject: Fwd: Pennsylvania Cap and Trade Petition

Please include in the Consent Agenda with the with attachments. Thank you!

Ferguson Township should endorse the attached petition to Pennsylvania's Environmental Quality Board to establish, by regulation, an economy-wide auction greenhouse cap-and-trade system. By joining as a petitioner, the board would be living into its provision under Resolution 2017-14 to cooperate and lead by example to achieve net zero emissions by 2050, ensure our township's right to a sustainable energy future under the Community and Environmental Bill of Rights attached to our Home Rule Charter, and align our strategic priorities more deeply with Article 1, § 27 of the Commonwealth Constitution. The Clean Air Council is the lead petitioner. They are joined by Widener University Commonwealth Law School Environmental Law and Sustainability Center, and others. Professors at Widener co-authored Resolution 2017-14. The auction cap-and-trade as it is drafted would have the Commonwealth reduce emissions consonant with the most recent Intergovernmental Panel on Climate Change 1.5 C report and the Fourth National Climate Assessment, both of which were released this past fall. Signatories must join by the end of January 2019.

The auction-cap-and-trade program is described in the overview portion of the attached current draft of the Petition, as well as the attached Fact Sheet. The legal basis, which includes the obligation to act under Article I, § 27 of the Pennsylvania Constitution, is set forth in Part III of the Petition and the draft article (Exhibit C) by John Dernbach and Robert McKinstry, to be published in the Fall edition of the Michigan Journal of Environmental and Administrative Law. As set forth in the article, they believe that the Pennsylvania Environmental Rights Amendment creates a constitutional mandate for Pennsylvania to take meaningful action to curtail greenhouse gas emissions to the extent necessary to prevent the worst impacts and that the Pennsylvania Air Pollution Control Act provides sufficient legislative authority to adopt the proposed regulation. The proposed regulation will mandate the emissions

reductions that the most recent IPCC report indicates will be necessary to forestall the worst effects of climate disruption. The current draft of the regulation and Exhibit A to the Petition listing the petitioners is also attached.

The proposed regulatory structure will promote good government and economic development in several respects. First, it would create a measured and foreseeable path for the Commonwealth to do what is necessary to avoid the worst consequences of climate disruption. Second, in the decadal term, it will ameliorate the Commonwealth's severe and structural budget deficit without impairing environmental capital, through the auction of GHG allowances with a reserve price (i.e. setting a floor on the price at which allowances may be sold). McKinstry has described the fiscal impacts in the attached Impact of the Proposed Regulation. Third, if used wisely, some of the income could be used to provide seed capital for the infrastructure projects that will be necessary to adapt to the effects of climate change, impacts our board recognizes. Finally, it will provide an incentive for investment in the types of projects that will be key to keeping Pennsylvania's--and by extension Ferguson Township's--economy strong as we transition to an economy that does not emit greenhouse gases.

L

November 27, 2018

Patrick McDonnell, Secretary
Department of Environmental Protection
Rachel Carson State Office Building
400 Market Street
Harrisburg, PA 17101
pcmcdonnell@pa.gov

Laura Edinger, Regulatory Coordinator
Environmental Quality Board
P.O. Box 8477
Harrisburg, PA, 17105-8477
ledinger@pa.gov
RA-EPEQB@pa.gov
(717) 787-4526

By email

Re: Petition Pursuant to 25 Pa. Code §§ 23.1-23.5, Article I, §27 of the Pennsylvania Constitution, and the Pennsylvania Air Pollution Control Act to Adopt the Attached Regulation Establishing a Comprehensive Program to Limit Greenhouse Gas Emissions Though an Auction-Cap-and-Trade Program to Conserve and Maintain a Stable Climate and Other Public Resources for Which the Commonwealth is a Trustee.

Dear Secretary McDonnell and Ms. Edinger,

On behalf of the Pennsylvania Clean Air Council, the Widener University Commonwealth Law School Environmental Law and Sustainability Center, and the other Petitioners identified at Exhibit A to the Petition, we hereby submit the following Petition for Rulemaking to adopt the proposed regulation attached as Exhibit B to the Petition or an equally effective regulation.

Article I, Section 27 of the Pennsylvania Constitution provides: “The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment. Pennsylvania’s public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.” Section 4005 of the Pennsylvania Air Pollution Control Act (“APCA”) provides the Environmental Quality Board (“EQB” or “Board”) the power and imposes upon the Board the affirmative duty to “[a]dopt rules and regulations, for the prevention, control reduction and abatement of air pollution . . . which shall be applicable to all air contamination sources.” 35 P.S. § 4005. Those regulations may “establish . . . maximum quantities of air contaminants” from any air pollution source” and “prohibit or regulate the combustion of certain fuels.” *Id.* Greenhouse gases are regulated air pollutants within the meaning of the federal Clean Air Act and the PaAPCA. *Massachusetts v. Environmental Protection Agency*, 549 U.S. 497 (2007); *Coalition for Responsible Regulation*,

Inc. v. EPA, 684 F.3d 102 (D.C. Cir. 2012), *see also Utility Air Regulatory Group v. EPA*, 134 S. Ct. 2427 (2014); *Funk v. Wolf*, 144 A.3d 228, 250 n. 17 (Pa. Cmwlth. 2016), *aff'd without opinion* 158 A.3d 642 (Pa. 2017). Pollution caused by excessive levels of these contaminants poses an existential threat the Pennsylvania's climate and other public natural resources for which the Commonwealth, including the Board, have a duty, as trustees, to maintain and conserve.

For the reasons set forth in this Petition and its Exhibits, we urge the Board to accept the attached regulation establishing an economy-wide auction-cap-and-trade program for Pennsylvania, with measures to prevent leakage and auction most allowances with a reserve price. Excess allowances will be retired and the cap will be reduced to zero by the fifth decade of this century, consistent with the requirements of the United Nations Framework Convention on Climate Change, as defined in the Paris Agreement.

The proposed regulation will require the degree of greenhouse gas emissions reductions on a schedule that will achieve the reductions that the most recent report of the Intergovernmental Panel on Climate Change has determined will be necessary throughout the world to avoid the worst impacts of climate disruption. The emissions reductions and the schedule are necessary to assure the beneficiaries of the constitutional environmental trust established by Article I, §27 of the Pennsylvania Constitution that the corpus of the trust will be conserved and maintained and that the beneficiaries and the Commonwealth will recover income from the sustainable husbanding of the remaining capacity of the atmosphere to absorb greenhouse gases.

For the benefit of the Board, we have also attached a Fact Sheet that provides a more abbreviated summary of the regulation than is provided in the Overview portion of the Petition.

Respectfully,

Robert B. McKinstry, Jr., Esq.
John C. Dernbach, Esq.
Joseph Minott, Esq.
Robert Routh, Esquire
C. Baird Brown, Esquire

cc: Jessica Shirley jesshirley@pa.gov
Robert A. Reiley rreiley@pa.gov
Petitioners

EQB Climate Petition: Pennsylvania Cap-and-Trade Fact Sheet

- Article I, Section 27 of the Pennsylvania Constitution provides: “The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment. Pennsylvania’s public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.” This requires the Commonwealth to control greenhouse gas (“GHG”) emissions, which pose a threat to human health and the environment and to limit such emissions to the extent consistent with the social cost of carbon.
- Section 4005 of the APCA grants EQB the power, and imposes the duty, to “[a]dopt rules and regulations, for the prevention, control, reduction and abatement of air pollution . . . which shall be applicable to all air contamination sources” and to “[e]stablish and publish maximum quantities of air contaminants.”
- The proposed regulation will establish a Pennsylvania program where emissions from covered sources of GHG emissions would be capped, with the cap declining each year by an amount equal to 3% of the 2016 emissions, beginning in 2018. This would put Pennsylvania on track to achieve carbon neutrality by 2052, consistent with the goal established by the United Nations Framework Convention on Climate Change, as defined in the Paris Agreement. Under the proposed regulation:
 - o DEP would auction or distribute allowances equal to the cap, with each allowance equal to one metric ton of CO₂e, as determined under the EPA’s Mandatory Greenhouse Gas Reporting Rule (MRR). Sources required to report their emissions under the MRR, or otherwise required to report direct emissions, must annually surrender a number of allowances equal to their total annual GHG emissions (in CO₂e).
 - o Fossil fuel distributors (petroleum fuel products, natural gas, propane and natural gas liquids used for fuel, and coal) must annually surrender a number of allowances equal to the total annual GHG emissions (in CO₂e) released into the ambient atmosphere from combustion of the fuels.
 - o Fossil fuels sold to entities required to surrender allowances based on their GHG emissions will be exempt from the requirement for the surrender of allowances. Sales of fossil fuels to manufacture products that will not release GHGs, such as plastics, will be exempt from the requirement for the surrender of allowances. Biogenic CO₂ and geologically sequestered CO₂ will also be exempt.
 - o Most allowances will be distributed by auction, subject to a reserve price equal to 10% in 2020, increasing by 10% per year plus inflation, or any higher reserve price in a program linked to the Pennsylvania program. Auctions occur periodically. Unsold allowances will be offered for sale at the next auction, put into a price containment reserve or retired.
 - o Industries with products (excluding fossil fuel and electricity generation) subject to international and interstate competition may apply for distribution of some allowances free of charge, by showing that this is necessary to prevent “leakage,” which might result if production were moved to other states or nations that do not put a price on GHG emissions. The number of free allowances will be reduced by 5% annually. If a company closes or reduces production, its free allowances will be reduced proportionately. DEP will be entitled to distribute free allowances to new businesses subject to international or interstate competition from any unsold allowances or the containment reserve in order to assure that this program does not discourage new business formation. Allowances may be bought by any person and may be freely traded. Allowances may also be banked for future use.

COMMONWEALTH OF PENNSYLVANIA
ENVIRONMENTAL QUALITY BOARD

PETITION FORM

I. PETITIONER INFORMATION

Name: Robert B. McKinstry, Jr., Clean Air Council, John C. Dernbach, C. Baird Brown and others on Exhibit A to the attached Petition. Others will be joining in the future and Exhibit A will be supplemented.

Mailing Address: See Exhibit A to the attached Petition.

Telephone Number: See Exhibit A to the attached Petition.

Date: November 27, 2018

II. PETITION INFORMATION

A. The petitioner requests the Environmental Quality Board to (check one of the following):

- Adopt a regulation
- Amend a regulation (Citation_)
- Repeal a regulation (Citation_)

Please attach suggested regulatory language if request is to adopt or amend a regulation.

B. Why is the petitioner requesting this action from the Board? (Describe problems encountered under current regulations and the changes being recommended to address the problems. State factual and legal contentions and include supporting documentation that establishes a clear justification for the requested action.)

See the reasons set forth in the introduction and sections I, II, and III and Exhibit C to the attached longer Petition.

C. Describe the types of persons, businesses and organizations likely to be impacted by this proposal.

See Section IV of the attached Petition.

D. Does the action requested in the petition concern a matter currently in litigation? If yes, please explain.

No.

E. For stream redesignation petitions, the following information must be included for the petition to be considered complete. Attach supporting material as necessary.

1. A clear delineation of the watershed or stream segment to be redesignated, both in narrative form and on a map.
2. The current designated use(s) of the watershed or segment.
3. The requested designated use(s) of the watershed or segment.
4. Available technical data on instream conditions for the following: water chemistry, the aquatic community (benthic macroinvertebrates and/or fishes), or instream habitat. If such data are not included, provide a description of the data sources investigated.
5. A description of existing and proposed point and nonpoint source discharges and their impact on water quality and/or the aquatic community. The names, locations, and permit numbers of point source discharges and a description of the types and locations of nonpoint source discharges should be listed.
6. Information regarding any of the qualifiers for designation as high quality waters (HQ) or exceptional value waters (EV) in §93.4b (relating to qualifying as High Quality or Exceptional Value waters) used as a basis for the requested designation.
7. A general description of land use and development patterns in the watershed. Examples include the amount or percentage of public lands (including ownership) and the amount or percentage of various land use types (such as residential, commercial, industrial, agricultural and the like).
8. The names of all municipalities through which the watershed or segment flows, including an official contact name and address.
9. Locational information relevant to items 4-8 (except for contact names and addresses) displayed on a map or maps, if possible.

**All petitions should be submitted to the
Secretary of the Department of Environmental Protection
P.O. Box 2063
Harrisburg, PA 17105-2063**

BEFORE THE PENNSYLVANIA ENVIRONMENTAL HEARING BOARD

PETITION PURSUANT TO 25 PA. CODE §§23.1-23.5, ARTICLE I, §27 OF THE PENNSYLVANIA CONSTITUTION, AND THE PENNSYLVANIA AIR POLLUTION CONTROL ACT TO ADOPT THE ATTACHED REGULATION ESTABLISHING A COMPREHENSIVE PROGRAM TO LIMIT GREENHOUSE GAS EMISSIONS TO CONSERVE AND MAINTAIN A STABLE CLIMATE AND OTHER PUBLIC RESOURCES FOR WHICH THE COMMONWEALTH IS A TRUSTEE

Submitted on Behalf of the Clean Air Council, Widener University Commonwealth Law School Environmental Law and Sustainability Center, and the Other Petitioners Identified on Exhibit A

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Dated: November 27, 2018

PETITION PURSUANT TO 25 PA. CODE §§ 23.1-23.5, ARTICLE I, §27 OF THE PENNSYLVANIA CONSTITUTION, AND THE PENNSYLVANIA AIR POLLUTION CONTROL ACT TO ADOPT THE ATTACHED REGULATION ESTABLISHING A COMPREHENSIVE PROGRAM TO LIMIT GREENHOUSE GAS EMISSIONS THROUGH AN AUCTION-CAP-AND-TRADE PROGRAM TO CONSERVE AND MAINTAIN A STABLE CLIMATE AND OTHER PUBLIC RESOURCES FOR WHICH THE COMMONWEALTH IS A TRUSTEE

Pursuant to the Pennsylvania State Constitution Article I, § 20 “[t]he citizens have a right in a peaceable manner to assemble together for their common good, and to apply to those invested with the powers of government for redress of grievances or other proper purposes by petition...” The Environmental Quality Board (“Board” or “EQB”) has promulgated regulations governing the manner and means that the citizens may exercise that right to request the promulgation of a regulation within the Board’s authority at 25 Pa. Code Chapter 23. The Petitioners identified on Exhibit A¹ hereby submit this petition for rulemaking on behalf of themselves, the citizens of the Commonwealth of Pennsylvania, and present and future generations to adopt the attached proposed regulation, which has been designed to limit Pennsylvania’s contribution to greenhouse gas pollution and to achieve climate neutrality by the second half of the 21st Century. The Petition seeks the adoption of the proposed regulation attached as Exhibit B.

This Petition conforms to the rules for petitioning the Board under Pennsylvania Code § 23.1 and is attached to the form for petitioning supplied by the Pennsylvania Department of Environmental Protection (“Department” or “DEP”). 25 Pa. Code § 23.1(a). Exhibit A to this Petition sets forth petitioners’ names, addresses, and telephone numbers. Pa. Code § 23.1(a)(1). Section I of this Petition set forth a clear description of the action requested and suggested regulatory language is set forth in a draft regulation attached hereto as Exhibit B. 25 Pa. Code § 23.1(a)(2)(i). Section II this Petition sets forth the facts that mandate the Board’s action adopting the proposed regulations. 25 Pa. Code §23.1(a)(3). Section III of this Petition and the article incorporated by reference in Section III set forth both the legal authorization to adopt it and the Constitutional mandate requiring its adoption. 25 Pa. Code § 23.1(a)(3). Finally, Section IV describes the impacts of the proposed regulation, including the types of persons, businesses and organizations that will be affected. 25 Pa. Code 23.1(a)(4).

¹ A large number of additional parties have expressed an interest in becoming petitioners, so that Exhibit A will be supplemented in the future.

I. Overview of the Proposed Rule

The Petitioners identified on Exhibit A respectfully request that the Pennsylvania Environmental Quality Board (“EQB” or “Board”) propose and promulgate a regulation limiting emissions of greenhouse gases (“GHGs” expressed as CO₂e) to prevent climate disruption substantially in the form of the proposed 25 Pa. Code Chapter 147 attached hereto as Exhibit B. The proposed Chapter 147 would establish a program in which GHG emissions would be capped, with the cap declining each year. The budget is based on an initial budget for calendar year 2018 set at 97% of the 2016 GHG emissions. The cap then declines annually by an amount equal to three percent of the 2016 base emissions. Thus, if the regulation becomes effective for 2020, the cap would be equal to 91% of 2016 emissions. This will put Pennsylvania on a track to achieve the reductions that the latest report of the Intergovernmental Panel on Climate Change (“IPCC”) concludes will be necessary to avoid the worst impacts of climate disruption,² thereby achieving the goal of the United Nations Framework Convention on Climate Change (“UNFCCC”), as defined in the Paris Agreement. The budget for 2030 will be 45% below 2010 emissions and will achieve emissions neutrality by 2052.³ The emissions reductions contemplated by the proposed Chapter 147 are also consistent with the scientific consensus of the reductions from developed nations that will be necessary to prevent disruption of the climate system and to conserve and maintain Pennsylvania’s climate and other public natural resources within the meaning of Article I, §27 of the Pennsylvania Constitution. The proposed Chapter 147 is both authorized and required by the Pennsylvania Air Pollution Control Act, 35 P.S. §§4001-4106, as described further in Section III and the article attached Exhibit C to this Petition and incorporated herein.

Under the proposed regulation, the Pennsylvania Department of Environmental Protection (“DEP” or the “Department”) would annually auction or distribute a number of allowances equal to the cap, with each allowance equal to one metric ton of CO₂e, as defined and determined under the Environmental Protection Agency’s Mandatory Greenhouse Gas Reporting Rule (“MRR”), 40 C.F.R. pt. 98 (2017), as it is incorporated in and modified by the proposed regulation. Three categories of potential emissions sources will be required to surrender allowances. First, sources that are required to report their direct emissions under the MRR will be required annually to surrender a number of allowances equal to their total annual GHG emissions (in CO₂e) attributable to Pennsylvania sources. Second, distributors of fossil fuels (petroleum fuel and petroleum fuel products, natural gas, propane and natural gas liquids used for fuel, and coal) in Pennsylvania will be required annually to surrender a number of allowances equal to the total annual GHG emissions (in CO₂e) that will be released into the ambient atmosphere from combustion of the fuels they distribute in Pennsylvania. Third, importers of electricity generated with fossil fuels that are not subject to an equivalent program will be required to surrender allowances equal to the emissions resulting from the generation of that

² IPCC, Myles Allen et al, Global Warming of 1.5 °C (Oct. 6, 2018) (“*IPCC 2018 Report*”), www.IPCC%20-%20SR15.htm at SPM-19.

³ According to the 2018 EPA Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016, <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2016>, 2016 U.S. GHG emissions were 5.9% lower than 2010 emissions. Under the proposed rule, the emissions cap for 2030 will be 61% of 2016 emissions, represented approximately a 45% reduction from 2010, consistent with what the IPCC report indicates will be necessary.

electricity; this requirement can be satisfied by a carbon adder program administered by PJM, if PJM should adopt such a program. As discussed below, the PaAPCA authorizes regulations limiting both direct emissions from facilities and fuels and the proposed regulation is consistent with that authorization.

Sales of fossil fuels to entities required to surrender allowances based on their direct GHG emissions will be exempt from the requirement for the surrender of allowances. Likewise, sales of coal, petroleum and natural gas products for the purpose of the manufacturing products that will not release GHGs, such as plastics, will be exempt from the requirement for the surrender of allowances. Imported electricity from states with requirements similar to those imposed by Pennsylvania or subject to a carbon adder program that imposes an equivalent cost on the imported sources' GHG emissions will also be exempt from the program. No allowances need to be surrendered for biogenic CO_{2e} and geologically sequestered CO_{2e}.

Compliance periods will coincide with the compliance periods for the California-Quebec-Ontario program. The proposed regulation would, therefore in most cases, establish a three-year compliance period, with one-year interim compliance periods. Covered sources would be required to surrender allowances equal to at least 30% of their GHG emissions every year with a true-up at the end of three years, when the covered entity must assure that it has surrendered allowances equal to all (100%) GHG emissions during the three-year period. To coordinate compliance periods with the California-Quebec-Ontario program (and to allow maximum trading opportunities), the first compliance period will begin on the effective date of the regulation and end on December 31 of the year that is consistent with the end of the next compliance period that is at least two years and no more than four years after the effective date of the proposed regulation.

Most allowances will be distributed by auction in which any person may bid and purchase allowances. The proposed regulation is generally consistent with the California economy-wide GHG auction-cap-and-trade regulation, which governs the regulatory program currently in force in California, Quebec, and Ontario. Thus, the mechanisms proposed, including the technical provisions for the auction, registration and trading are already functioning, will already be familiar to many of the affected industries so that it can be readily implemented, and will provide for a broad market and high liquidity for allowances. The auction will be subject to a reserve price that is designed to provide consistency with other GHG cap-and-trade programs. It is initially set at \$10.00 per ton in 2020, increasing by 10% plus the rate of inflation thereafter. This will keep initial allowance prices below the RGGI cost for triggering the release of allowances from its cost containment reserve until 2024. If the Pennsylvania program becomes linked to any other program with a higher reserve price (i.e. the California program), the reserve price will increase to that program's reserve price. If any allowances are unsold in advance auctions for future years, the remaining allowances will be auctioned in future years. If allowances are unsold in an auction for the current vintage year, up to 25% will be offered at sale in the next auction (subject to the applicable reserve price) and any allowances that are unsold for more than two years will be retired or placed in an allowance price containment reserve. Allowances in the containment reserve will be released for auction only when the price exceeds the containment trigger, which was \$40 in 2013, increased by 5% annually plus the rate of

inflation. The number of allowances in the price containment reserve will be limited to $\frac{1}{4}$ of the then applicable cap and unsold allowances exceeding that maximum will be permanently retired.

For industries producing products subject to international and interstate competition (excluding fossil fuel distribution and electricity generation), some allowances will initially be distributed free of charge to prevent “leakage” that might result if production were moved to other states or nations that do not put a price on GHG emissions. The proposed regulation includes a mechanism for companies to apply to DEP for direct allocation of allowances, which may be distributed without charge or at a lower charge to the extent necessary to prevent leakage. This provision also includes a mechanism to protect companies that have already reduced emissions, by awarding them an equal number of allowances per unit of production as their competitors who have not taken early action (if the competitor receives a direct allocation). The number of free allowances directly awarded would initially be based on a company’s GHG emissions reported in 2018 and its level of production in that year and would be reduced by 5% of that initial baseline amount annually. Thus, all free allowances will be eliminated after 20 years. If a company closes its operations in Pennsylvania, it will lose the right to receive direct allowances. Likewise, if it moves any portion of its production out of the Commonwealth or otherwise reduces production, the number of direct allowances it receives will be reduced proportionately. DEP will be entitled to distribute free allowances to new businesses subject to international or interstate competition from any unsold allowances or the price containment reserve to assure that this cap-and-trade program does not discourage new business formation.

Allowances may be freely traded. Allowances may also be banked for future use. The regulatory program is being designed to allow interstate and international trading with any program that DEP determines is equivalent to the Pennsylvania program and which allows use of Pennsylvania allowances. The program is currently designed to be equivalent to the California-Quebec-Ontario program. Although the Regional Greenhouse Gas Initiative (“RGGI”) Program and the proposed Virginia cap-and-trade program are limited to larger electricity generation units, it will be important to allow trading with those programs to prevent leakage. The proposed regulation therefore provides that, with the exception noted below, if any of those programs agrees to accept Pennsylvania allowances, allowances may be freely traded with those programs. To assure that the program does not unduly disrupt electricity markets, the regulation provides that allowances from programs applying to electricity generating units in the PJM market, *i.e.* RGGI and Virginia, may be accepted for compliance with the Pennsylvania program and retired through the first full compliance period (3 to 5 years). This will cause allowance prices in those programs to rise and protect the export of low-emissions Pennsylvania electricity to those programs without the need for the states to negotiate, in advance, the terms under which RGGI and Virginia would accept Pennsylvania allowances. We anticipate that eventually the Pennsylvania program will be linked to all other cap-and-trade programs. Active markets and futures markets have already developed for allowances in the other existing programs, increasing liquidity and price discovery, and thus improving predictability for industry and industrial development.

The provision for trading with RGGI states, Virginia and the California-Ontario-Quebec program should limit leakage to those states. However, additional measures will need to be employed to limit leakage in the electric generation sector to states in PJM that do not put a price

on GHG emissions. The regulation includes provisions requiring imported electricity to obtain and surrender allowances equal to the emissions generated during the electricity generation. PJM has mechanisms (i.e. the GATS system) to measure environmental attributes that can be employed to implement that requirement. It has also developed, but has not implemented, a potential two-stage mechanism for establishing a carbon adder that would prevent such leakage between regulated and unregulated zones. The proposed regulation's requirement for the surrender of allowances for imported electricity would be satisfied if a carbon adder were imposed on electricity by PJM, to be implemented upon FERC's approval of a modification to PJM's tariff. We anticipate that New Jersey, Delaware, Maryland, Virginia and the District of Columbia would join with Pennsylvania to request that PJM implement its carbon adder to prevent leakage and that if they do so, PJM will be willing to implement the program, subject to FERC approval.

The proposed regulation will also allow the creation of offset credits for projects involving the sequestration of GHGs or reduction of GHGs from activities that are not required to surrender allowances. An offset must represent a GHG emission reduction or GHG removal enhancement that is real, additional, quantifiable, permanent, verifiable, and enforceable and be consistent with a compliance offset protocol. The proposed regulation incorporates offset protocols approved by California for ozone depleting substances projects, livestock projects, sustainable forestry projects and mine methane capture projects, as well as applicable RGGI offset protocols. The proposed regulation requires that DEP develop a protocol and provide credit for emissions reduction resulting from abandoned minelands reclamation, including control of mine fires and fires in culm and gob piles. It further requires DEP to develop a protocol for offsets for carbon capture and sequestration of emissions from combustion of biomass. DEP may develop and approve additional protocols in the future.

The proposed regulation includes provisions for administering auctions and for creating allowance accounts. It also includes provisions governing reporting and procedures for the surrender of allowances. If a party fails to submit an adequate number of allowances by the deadline, that party will be required to surrender four times the number of allowances that it did not timely submit. Failure timely to surrender an adequate number of allowances or non-compliance with any of the provisions of the regulation will also be subject to enforcement action under the APCA.

The proposed regulation includes provisions authorizing municipalities that administer their own air quality programs, currently Philadelphia and Allegheny Counties, to apply to administer this greenhouse gas auction-cap-and-trade program. If these jurisdictions undertake this program and wish to do so, they would be entitled to auction allowances for sources within their jurisdiction or participate in the larger Pennsylvania auction and receive their share of auction revenues. These jurisdictions may adopt their own allowance allocation rules and apply revenues as their governing bodies direct. The regulation, would, however, prohibit or limit the award of free allowances to electricity generators. This restriction is necessary to prevent perverse results.

II. Statement of Facts Constituting the Reasons the Board is Constitutionally Required to Adopt the Proposed Regulation Under Article I, § 27 of the Pennsylvania Constitution.

The following facts constitute the reasons that reduction of greenhouse gases emissions in Pennsylvania consistent with the recommendations of the Intergovernmental Panel on Climate Change the *IPCC 2018 Report* is necessary to conserve Pennsylvania's public natural resources within the meaning of Article I, § 27 of the Pennsylvania Constitution. The proposed regulation attached as Exhibit B would do so. As described in Section III, the facts set forth in this section create a constitutional mandate for this Board, as a trustee, to take action to conserve Pennsylvania's natural resources from the damages caused by greenhouse gas pollution consistent with its authorization and existing law provides the Board with the authority to do so by adopting the regulation attached to this Petition as Exhibit B.

1. According to the United States Global Change Research Program⁴, disruption of the global climate due to global warming is occurring and adversely impacting the Earth's climate.⁵ The present rate of global heating is occurring as a result of human activities that release heat-trapping greenhouse gases ("GHGs") and intensify the Earth's natural greenhouse effect, at an accelerated rate, thereby disrupting Earth's climate.⁶ This abnormal climate change is unequivocally human-induced⁷, is occurring now, and will continue to occur unless drastic measures are taken to curtail it⁸. Climate change is damaging both natural and human systems, and if unrestrained, will alter the planet's

⁴ "The U.S. Global Change Research Program (USGCRP) coordinates and integrates federal research on changes in the environment and their implications for society." The organization's vision is to produce "[a] nation, globally engaged and guided by science, meeting the challenges of climate and global change." The organization is comprised of "[t]hirteen departments and agencies [that] participate in the USGCRP...steered by the Subcommittee on Global Change Research under the Committee on Environment and Natural Resources, overseen by the Executive Office of the President, and facilitated by an Integration and Coordination Office." <http://www.globalchange.gov/about>.

⁵ UNITED STATES GLOBAL CHANGE RESEARCH PROGRAM (USGCRP), GLOBAL CLIMATE CHANGE IMPACTS IN THE UNITED STATES 13 (2009) available at <http://downloads.globalchange.gov/usimpacts/pdfs/climate-impacts-report.pdf> [hereinafter *Global Climate Change Impacts*] ("Human activities have led to large increases in heat-trapping gases over the past century. Global average temperature and sea level have increased, and precipitation patterns have changed.").

⁶ *Id.* ("The global warming of the past 50 years is due primarily to human-induced increases in heat-trapping gases."); DEUTSCHE BANK GROUP CLIMATE CHANGE ADVISORS, CLIMATE CHANGE: ADDRESSING THE MAJOR SKEPTIC ARGUMENTS 9 (September 2010) available at <http://www.dbcca.com/dbcca/EN/media/DBCCAColumbiaSkepticPaper090710.pdf>; Intergovernmental Panel on Climate Change (IPCC), *IPCC Fourth Assessment Report: Climate Change 2007 (AR4)*, 1.1 (2007) available at http://www.ipcc.ch/publications_and_data/ar4/syr/en/mains1.html#1-1.

⁷ USGCRP, *Global Climate Change Impacts* at 12 (2009).

⁸ *Id.* ("Future climate change and its impacts depend on choices made today."); IPCC, *AR4 1.1* (2007) ("Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level.").

habitability.⁹

2. In December 2009, the United States Environmental Protection Agency (“EPA”) made an Endangerment Finding under the federal Clean Air Act.¹⁰ The Administrator concluded that “the body of scientific evidence compellingly supports” the finding “that greenhouse gases in the atmosphere may reasonably be anticipated both to endanger public health and to endanger public welfare.” The primary scientific bases for the finding were the “major assessments by the U.S. Global Climate Research Program (USGCRP), the Intergovernmental Panel on Climate Change (IPCC), and the National Research Council (NRC).” “The Administrator reached her determination by considering both observed and projected effects of greenhouse gases in the atmosphere, their effect on climate, and the public health and welfare risks and impacts associated with such climate change.” The finding was affirmed on judicial review.¹¹ As a result of the finding, EPA established emissions standards for mobile sources and GHGs became “regulated pollutants” under the Clean Air Act that must be regulated for new and modified major sources of air pollution.¹² EPA has also established GHG standards for new and existing electric generating units under section 111 of the Clean Air Act, although the standards have been stayed and EPA has proposed to withdraw the standards for existing electric generating units, known as the Clean Power Plan and to replace those standards with weaker standards.¹³
3. Multiple reports of the U.S. Global Change Research Program, including its 2017 report,¹⁴ multiple reports of the National Research Council (“NRC”) of Academy of Natural

⁹ USGCRP, *Global Climate Change Impacts* at 12 (2009) (“Thresholds will be crossed, leading to large changes in climate and ecosystems.”).

¹⁰ “Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act; Final Rule,” 74 Fed. Reg. 66,496, 66,514 (Dec. 15, 2009) (“Endangerment Finding”), *aff’d* *Coal. for Responsible Regulation, Inc. v. U.S. Env’tl. Prot. Agency*, 684 F.3d 102 (D.C. Cir. 2012) (“*CRRP*”), *aff’d in part and rev’d in part on other grounds sub nom. Utility Air Regulatory Group v. EPA*, 134 S. Ct. 2427 (2014) (“*UARG*”).

¹¹ *CRRI*, *supra*.

¹² *UARG*, *supra*.

¹³ Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units; Final Rule, 80 Fed. Reg. 64,661 (Oct. 23, 2015) (codified at 40 C.F.R. Part 60). *See also*, *Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units; Proposed Rule*, 82 Fed. Reg. 48,035 (Oct. 16, 2017).

¹⁴ U.S. GLOBAL CHANGE RESEARCH PROGRAM, CLIMATE SCIENCE SPECIAL REPORT: FOURTH NATIONAL CLIMATE ASSESSMENT, VOLUME I (2017), https://science2017.globalchange.gov/downloads/CSSR2017_FullReport.pdf. *See also* John C. Dernbach & Robert Altenburg, *Evolution of U.S. Climate Policy*, in GLOBAL CLIMATE CHANGE AND U.S. LAW 84-87 (Michael B. Gerrard & Jody Freeman eds. 2014) (explaining authorizing legislation for U.S. Global Change Research Program and describing some earlier reports).

Sciences,¹⁵ the reports of the Intergovernmental Panel on Climate Change,¹⁶ numerous reports of other national academies of natural science,¹⁷ and even judicial decisions¹⁸ have all concluded that emissions of GHGs from human activities are disrupting the climate, that adverse effects already occurring and these effects will get significantly worse without achieving net carbon neutrality. They further conclude that catastrophic impacts are possible.

4. We human beings have benefited from living on a planet that has been remarkably hospitable to our existence and provided conditions that are just right for human life to expand and flourish.¹⁹ The Earth is a “Goldilocks” planet with an atmosphere that has fewer GHGs than that of Venus (which is too hot), and more than that of Mars (which is too cold), which is just perfect for the life that has developed on planet Earth.²⁰
5. GHGs in the atmosphere trap a portion of the heat that the earth receives from the sun by reflecting infrared radiation back rather than allowing it to escape the atmosphere.²¹ More GHGs in the atmosphere means that more heat is being retained on Earth, with less heat radiating back out into space.²² Without this greenhouse effect, the average surface temperature of our planet would be 0°F (-18°C) instead of 59°F (15°C).²³ Scientists have understood this basic mechanism of global warming since the late-nineteenth century.²⁴
6. Human beings have significantly altered the chemical composition of the Earth’s atmosphere and its climate system.²⁵ We have changed the atmosphere and Earth’s

¹⁵ NRC, *America’s climate choices: Advancing the Science of Climate Change* (2010), available at <http://www.ipcc.ch/report/ar5/wg1/>; NRC, *Climate stabilization targets: Emissions, Concentrations, and Impacts over Decades to Millennia* (2011), available at <https://www.nap.edu/catalog/12877/climate-stabilization-targets-emissions-concentrations-and-impacts-over-decades-to>; NRC, *Abrupt impacts of climate change: Anticipating Surprises* (2013), available at <https://www.nap.edu/catalog/18373/abrupt-impacts-of-climate-change-anticipating-surprises>.

¹⁶ IPCC, *Fifth Assessment Report (AR5)* (2014), available at <http://www.ipcc.ch/report/ar5/index.shtml>.

¹⁷ See, e.g. Royal Society, *Climate Change: A Summary of the Science* (2010), available at <https://royalsociety.org/topics-policy/publications/2010/climate-change-summary-science/>.

¹⁸ See, *CRRI, supra*, n. 33 *Green Mt. Chrysler Plymouth Dodge Jeep v. Crombie*, 508 F. Supp. 295 (D. Vt. 2007).

¹⁹ John Abatzoglou et al., *A Primer on Global Climate Change and Its Likely Impacts*, in *CLIMATE CHANGE: WHAT IT MEANS FOR US, OUR CHILDREN, AND OUR GRANDCHILDREN* 11, 15-22 (Joseph F. C. DiMento & Pamela Doughman eds., MIT Press 2007) (“The earth’s climate system can be thought of as an elaborate balancing act of energy, water, and chemistry involving the atmosphere, oceans, ice masses, biosphere, and land surface.”).

²⁰ JAMES HANSEN, *STORMS OF MY GRANDCHILDREN* 224-225 (2009); See John Abatzoglou et al., *A Primer on Global Climate Change and Its Likely Impacts*, in *CLIMATE CHANGE: WHAT IT MEANS FOR US, OUR CHILDREN, AND OUR GRANDCHILDREN* at 23.

²¹ John Abatzoglou et al., *A Primer on Global Climate Change and Its Likely Impacts*, in *CLIMATE CHANGE: WHAT IT MEANS FOR US, OUR CHILDREN, AND OUR GRANDCHILDREN* at 22.

²² *Id.* at 16-17.

²³ *Id.* at 17.

²⁴ See *id.* at 35 (describing the efforts of Swedish chemist Svante Arrhenius).

²⁵ Naomi Oreskes, *The Scientific Consensus on Climate Change*, in *CLIMATE CHANGE: WHAT IT MEANS FOR US, OUR CHILDREN, AND OUR GRANDCHILDREN* 65, 93 (Joseph F. C. DiMento & Pamela Doughman

climate system by engaging in activities that produce, or release GHGs into the atmosphere.²⁶ Carbon dioxide (CO₂) is the key GHG, and there is evidence that its emissions are largely responsible for the current warming trend.²⁷ Although much of the excess carbon dioxide is absorbed by the oceans, plants and forests, the increase of GHG concentrations resulting from historic and present human activities has altered the Earth's ability to maintain the delicate balance of energy between that which it receives from the sun and that which it radiates back out into space.²⁸

7. Pollution by GHGs is similar to air and water pollution by other naturally occurring substances, such as NO_x, ammonia, phosphates and many metals, that are necessary to sustain life but can disrupt natural systems and damage health and welfare if concentrations rise too high.
8. The average CO₂ concentration in our atmosphere in 2016 was 402.9 ppm.²⁹ The pre-industrial concentration was 280 ppm; the last time the atmospheric concentration was as high as in 2016 “was more than 3 million years ago, when temperature was 2-3°C (3.6 - 5.4° F) higher than during the pre-industrial era, and sea level was 15-25 meters (50-80 feet) higher than today.”³⁰ On March 4, 2018, the level of carbon dioxide in the atmosphere had reached 409.97 ppm.³¹
9. Concentrations of other GHGs in the atmosphere have also increased due to human

eds., MIT Press 2007) (“We have changed the chemistry of our atmosphere, causing sea level to rise, ice to melt, and climate to change. There is no reason to think otherwise.”).

²⁶ *Id.*

²⁷ See James E. Hansen et al., *Target Atmospheric CO₂: Where Should Humanity Aim?* 2 OPEN ATMOS. SCI. 217, 217-231 (2008).

²⁸ John Abatzoglou et al., *A Primer on Global Climate Change and Its Likely Impacts*, in CLIMATE CHANGE: WHAT IT MEANS FOR US, OUR CHILDREN, AND OUR GRANDCHILDREN 11, 15-22 (Joseph F. C. DiMento & Pamela Doughman eds., MIT Press 2007).

²⁹ Rebecca Lindsey, *Climate Change: Atmospheric Carbon Dioxide* (Oct. 17, 2017), NOAA, Climate.gov, available at <https://www.climate.gov/news-features/understanding-climate/climate-change-atmospheric-carbon-dioxide>.

³⁰ *Id.*; see also, IPCC, *AR4* at 37 (“The global atmospheric concentration of CO₂ increased from a pre-industrial value of about 280ppm to 379ppm in 2005.”); National Science and Technology Council, *Scientific Assessment of the Effects of Global Change on the United States 2* (May 2008) [hereinafter *Scientific Assessment*], available at <http://www.climate-science.gov/Library/scientific-assessment/Scientific-AssessmentFINAL.pdf> (“The globally averaged concentration of carbon dioxide in the atmosphere has increased from about 280 parts per million (ppm) in the 18th century to 383 ppm in 2007.”); Environmental Protection Agency (EPA), *Technical Support Document for Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act 17* (December 9 2009) [hereinafter *TS Endangerment Findings*]; Dieter Lüthi et al., *High-resolution carbon dioxide concentration record 650,000-800,000 years before present* 453 *Nature* 379, 379-382 (May 2008) available at <http://www.nature.com/nature/journal/v453/n7193/full/nature06949.html> (prior to this publication it was accepted atmospheric CO₂ record extended back 650,000 years, but now research indicates that the record can be extended 800,000 years, or two complete glacial cycles)..

³¹ NOAA, Climate.gov, available at <http://co2now.org/Current-CO2/CO2-Now/Current-Data-for-Atmospheric-CO2.html> (visited March 7, 2018).

activities. As of 2007, when EPA made its Endangerment Finding, atmospheric concentrations of methane had increased nearly 150% since the pre-industrial period and concentrations of nitrous oxide had increased by almost a quarter.³² Although methane is relatively short-lived in the atmosphere, methane concentrations in the atmosphere have continued to rise and recently spiked. At the time of the Endangerment finding, methane concentrations were rising at a rate of about 0.5 parts per billion annually, but in 2014, methane concentrations rose 12.5 parts per billion, and in 2015, they rose 9.9 parts per billion.³³

10. Humans continue to add GHGs into the atmosphere at a rate that outpaces their removal through natural processes.³⁴ The current and projected CO₂ increase, for example, is about one hundred times faster than has occurred over the past 800,000 years.³⁵ This increase has to be considered in light of the lifetime of greenhouse gases in the atmosphere. A substantial portion of every ton of CO₂ emitted by humans persists in the atmosphere for as long as a millennium or more.³⁶ The current concentrations of GHGs in the atmosphere therefore, are the result of both historic and current anthropogenic emissions.
11. According to the latest Pennsylvania GHG Inventory, in 2013, Pennsylvania was responsible for emitting 305.75 million metric tons of CO₂e.³⁷ Only approximately eleven percent of those GHGs, or 34.36 million metric tons, is sequestered by the

³² *Endangerment Finding*, 74 Fed. Reg. at 6651718 (“The global atmospheric concentration of methane has increased by 149 percent since pre-industrial levels (through 2007); and the nitrous oxide concentration has increased 23 percent (through 2007).” available at <https://insideclimatenews.org/news/19032018/global-warming-arctic-air-pollution-short-lived-climate-pollutants-methane-black-carbon-hfcs-slep> (visited March 19, 2018)).

³³ Sabrina Shankman, *These Climate Pollutants Are Short-Lived, But They’re Wreaking Havoc on the Arctic: If we can cut back on methane, black carbon and other short-lived climate pollutants, it could buy time to solve the trickier problem of CO₂*, INSIDE CLIMATE NEWS (March 19, 2018).

³⁴ *TS Endangerment Findings* at ES-2 (“Atmospheric GHG concentrations have been increasing because anthropogenic emissions have been outpacing the rate at which GHGs are removed from the atmosphere by natural processes over timescales of decades to centuries.”).

³⁵ Dieter Lüthi et al., *High-resolution carbon dioxide concentration record 650,000-800,000 years before present* 453 *Nature* 379, 379-382 (May 2008) available at <http://www.nature.com/nature/journal/v453/n7193/full/nature06949.html>.

³⁶ James E. Hansen et al., *Target Atmospheric CO₂: Where Should Humanity Aim?* 2 *OPEN ATMOS. SCI.* 217, 220 (2008); See also EPA, *TS Endangerment Findings* at 16 (“Carbon cycle models indicate that for a pulse of CO₂ emissions, given an equilibrium background, 50% of the atmospheric increase will disappear within 30 years, 30% within a few centuries, and the last 20% may remain in the atmosphere for thousands of years.”); John Abatzoglou et al., *A Primer on Global Climate Change and Its Likely Impacts*, in *CLIMATE CHANGE: WHAT IT MEANS FOR US, OUR CHILDREN, AND OUR GRANDCHILDREN* 11, 29 (Joseph F. C. DiMento & Pamela Doughman eds., MIT Press 2007) (“Since CO₂ has a lifetime of over one hundred years, these emissions have been collecting for many years in the atmosphere.”).

³⁷ *Pennsylvania Greenhouse Gas Inventory 2016* (2018), at p. 5, Table 1, (*Pa Inventory*) available at [http://files.dep.state.pa.us/Air/AirQuality/AQPortalFiles/Advisory%20Committees/CCAC/Docs/Inventory-2016_1-18-17_\(final\).pdf](http://files.dep.state.pa.us/Air/AirQuality/AQPortalFiles/Advisory%20Committees/CCAC/Docs/Inventory-2016_1-18-17_(final).pdf); see also *CO₂ Emissions from Fossil Fuel Combustion – Million /metric Tons CO₂ (MMTCO₂)* http://www.epa.gov/statelocalclimate/documents/pdf/CO2FFC_2009.pdf See also *Greenhouse Gas Emissions in the Mid-Atlantic Region*, (Jan. 21, 2012) http://www.epa.gov/reg3artd/globclimate/ccghg.html#Total_Emissions

Commonwealth's private and public forests annually.³⁸ According to the draft 2017 inventory, in 2014 the emissions decreased by approximately 3.6 million metric tons of CO₂e, with the largest decrease in the electricity generation sector, largely due to the switch from coal to natural gas, and the decreases in that sector, transportation and agricultural sectors being partially offset by increases in residential commercial, industrial and waste categories.³⁹

12. Pennsylvania's GHG emissions are globally significant. Pennsylvania is the third largest CO₂ emitter after Texas and California, emitting 4.3% of total US GHG emissions in 2014⁴⁰ and 0.86 percent of total global emissions (which totaled 35.7 billion metric tons in 2014).⁴¹ At 19.4 metric tons per year, Pennsylvania's per capita energy-related GHG emissions were greater than the US national average of 16.9 metric tons per year in 2015.⁴² Pennsylvania's total GHG emissions in 2014 exceeded all but 21 nations of the world, with 16 nations exceeding Pennsylvania and Pennsylvania's emissions being approximately the same as 5 nations.⁴³ Pennsylvania's per capita emissions exceeded those of all of the nations in the world in 2014, and were more than double the per capita emissions of Germany (9.3) and China (7.6) and three times the per capita emissions of the UK (6.5), France (5.0) and Italy (5.5).⁴⁴
13. One key observable change from the rising levels of GHG pollution in the atmosphere is the rapid increase in recorded global surface temperatures.⁴⁵ As a result of increased atmospheric GHGs from human activities, based on fundamental scientific principles, the Earth has been warming as scientists have predicted.⁴⁶ The increased concentrations of

³⁸ Pa Inventory, at 5, Table 1; *see also*, *Carbon Sequestration*, Pennsylvania Department of Conservation and Natural Resources, <http://www.dcnr.state.pa.us/info/carbon/index.aspx>

³⁹ *Presentation of Draft Pennsylvania Greenhouse Gas Inventory 2017 to Climate Change Advisory Committee*, available at http://files.dep.state.pa.us/Air/AirQuality/AQPortalFiles/Advisory%20Committees/CCAC/2017/8-7-17/Emission_Inventory_for_8-7_CCAC_meeting_r1.pdf.

⁴⁰ Johannes Friedrich Johannes Friedrich, Mengpin Ge & Alexander Tankou, *6 Charts to Understand U.S. State Greenhouse Gas Emissions*, World Resources Institute (Aug. 10, 2017), available at <http://www.wri.org/blog/2017/08/6-charts-understand-us-state-greenhouse-gas-emissions> (visited March 19, 2018).

⁴¹ *Trends in Global CO₂ Emissions 2015 Report*, PBL Netherlands Environmental Assessment Agency (2015) at 10, available at http://edgar.jrc.ec.europa.eu/news_docs/jrc-2015-trends-in-global-co2-emissions-2015-report-98184.pdf (visited March 18, 2018) ("*Global Trends*").

⁴² EIA, *Energy-Related Carbon Dioxide Emissions by State, 2000–2015* (January 2018) at 15, Table 5, available at

<https://www.eia.gov/environment/emissions/state/analysis/pdf/stateanalysis.pdf> (visited March 19, 2018).

⁴³ *Global Trends*, *supra* at 28-29, table 2.3.

⁴⁴ *Global Trends* at 3, Table 2.4.

⁴⁵ National Science and Technology Council, *Scientific Assessment* at 51; IPCC, *AR4* at 30; USGCRP, *Global Climate Change Impacts* at 19; EPA, *TS Endangerment Findings* 26-30; National Aeronautics and Space Administration (NASA) & Goddard Institute for Space Studies (GISS), *Global Surface Temperature*, <http://climate.nasa.gov/keyIndicators/#globalTemp> (illustrating the change in global surface temperatures) (last visited April 7, 2011).

⁴⁶ IPCC, *AR4* at 39; USGCRP, *Global Climate Change Impacts* at 13; EPA, *TS Endangerment Findings* at 48.

greenhouse gases in our atmosphere, primarily CO₂,⁴⁷ have raised global surface temperature by 1.4°F (0.8°C) in the last one hundred to one hundred fifty years.⁴⁸ In the last thirty years, the acceleration of change has intensified as the Earth has been warming at a rate three times faster than that over the previous one hundred years.⁴⁹

14. Because of year-to-year variations in these thermometer readings, as with daily readings, scientists compare temperature differences over a decade to determine patterns.⁵⁰ Employing this decadal scale, the surface of the planet has warmed at a rate of roughly 0.3 to 0.4°F (0.15 to 0.2°C) per decade since the late 1970s.⁵¹ Global mean surface temperature has been decidedly higher during the last few decades of the twentieth century than at any time during the preceding four centuries.⁵² Global surface temperatures have been rising dramatically since 1951. “Seventeen of the 18 warmest years in the 136-year record all have occurred since 2001 with the exception of 1998. The year 2016 ranks as the warmest on record.”⁵³
15. The dramatic increase of the average global surface temperature is alarming. By comparison, the global surface temperature during the last Ice Age was about 9°F (5°C) cooler than today.⁵⁴ It has become quite clear that the past several decades present an

⁴⁷ EPA, *Climate Change – Science*, available at <http://epa.gov/climatechange/science/index.html> (August 19, 2010) (last visited April 7, 2011); EPA, *TS Endangerment Findings* at ES-1-2.

⁴⁸ EPA, *TS Endangerment Findings* at ES-2 (“Global mean surface temperatures have risen by 1.3 ± 0.32°F (0.74°C ± 0.18°C) over the last 100 years.”); See J. Hansen et al., NASA & GISS, *Global Surface Temperature Change* (August 3, 2010); NASA, *Climate Change: Key Indicators*, <http://climate.nasa.gov/keyIndicators> (last visited April 7, 2011); John Abatzoglou et al., *A Primer on Global Climate Change and Its Likely Impacts*, in *CLIMATE CHANGE: WHAT IT MEANS FOR US, OUR CHILDREN, AND OUR GRANDCHILDREN* 11, 15-22 (Joseph F. C. DiMento & Pamela Doughman eds., MIT Press 2007).

⁴⁹ EPA, *TS Endangerment Findings* at 32 (“U.S. average annual temperatures (for the contiguous United States or lower 48 states) are now approximately 1.25°F (0.69°C) warmer than at the start of the 20th century, with an increased rate of warming over the past 30 years. The rate of warming for the entire period of record (1901–2008) is 0.13°F (0.072°C) per decade while the rate of warming increased to 0.58°F (0.32°C) per decade for the period 1979–2008.”); USGCRP, *Global Climate Change Impacts* at 9.

⁵⁰ IPCC, *AR4* at 40.

⁵¹ See NASA, *Climate Change: Key Indicators, Global Land-Ocean Temperature Index*, <http://climate.nasa.gov/keyIndicators/#globalTemp> (last visited April 7, 2011).

⁵² The National Academies Press (Board on Atmospheric Sciences and Climate), *Surface Temperature Reconstructions for the Last 2,000 Years* 3 (2006), available at http://www.nap.edu/catalog.php?record_id=11676.

⁵³ NASA, *Global Climate Change – Global Surface Temperature*, <http://climate.nasa.gov/keyIndicators/index.cfm#globalTemp> (last visited March 7, 2018); NASA, *Global Climate Change*, <https://climate.nasa.gov/evidence/> (last visited March 7, 2018) (“Most of the warming occurred in the past 35 years, with 16 of the 17 warmest years on record occurring since 2001. Not only was 2016 the warmest year on record, but eight of the 12 months that make up the year — from January through September, with the exception of June — were the warmest on record for those respective months.”).

⁵⁴ James E. Hansen & Makiko Sato, *Paleoclimate Implications for Human-Made Climate Change* 5 (January 18, 2011), available at

anomaly, as global surface temperatures are registering higher than at any point in the past 400 years (and for the Northern Hemisphere the past 1,000 years).⁵⁵

16. The IPCC has observed that “[w]arming of the climate system is unequivocal”.⁵⁶ The United States EPA has recognized the scientific consensus that has developed on the fact of global warming and its cause; that the Earth is heating up and the climate is being disrupted due to human activities.⁵⁷
17. Reports by the United States Academy of Sciences have consistently concluded that anthropogenic emissions of GHGs are disrupting the climate. that this disruption will increase without significant emissions reductions, and that there is a potential for abrupt and disastrous impacts.⁵⁸
18. Changes in many different aspects of Earth’s climate system over the past century are consistent with this warming trend: based on straightforward scientific principles, human-induced GHG increases lead not only to warming of land surfaces⁵⁹, but also to the warming of oceans⁶⁰, increased atmospheric moisture levels⁶¹, rises in the global sea level⁶², and changes in rainfall⁶³ and atmospheric air circulation patterns that affect water and heat distribution.⁶⁴
19. Although there is some uncertainty, most of the possible variation falls on the side of greater disruption. For example, reports developed since the last IPCC report was

http://www.columbia.edu/~jeh1/mailings/2011/20110118_MilankovicPaper.pdf (last visited April 10, 2011).

⁵⁵ USGCRP, *Global Climate Change Impacts* at 19.

⁵⁶ IPCC, *Summary for Policymakers*, in CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS, CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, at 1, 3, 22, 31 (S. Solomon et al. eds. 2007).

⁵⁷ EPA, *TS Endangerment Findings* at ES-2 (“Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level. ... Most of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in *anthropogenic* GHG concentrations.”) (emphasis added).

⁵⁸ See, e.g., National Research Council, *Climate Change 2013: The Physical Science Basis* (2013), <http://www.ipcc.ch/report/ar5/wg1/>; National Research Council, *Climate Stabilization Targets: Emissions, Concentrations, and Impacts over Decades to Millennia* (2011), <https://www.nap.edu/catalog/12877/climate-stabilization-targets-emissions-concentrations-and-impacts-over-decades-to>; National Research Council, *Abrupt Impacts of Climate Change: Anticipating Surprises* (2013), <https://www.nap.edu/catalog/18373/abrupt-impacts-of-climate-change-anticipating-surprises>.

⁵⁹ IPCC, *AR4* at 30.

⁶⁰ *Id.* at 72.

⁶¹ USGCRP, *Global Climate Change Impacts* at 18; B.D Santer et al., *Identification of human-induced changes in atmospheric moisture content*, 104 PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES, 15248, 15248-15253 (September 25, 2007).

⁶² IPCC, *AR4* at 30.

⁶³ USGCRP, *Global Climate Change Impacts* at 18, 44.

⁶⁴ *Id.* at 42.

produced in 2013 have determined that sea level rise due to melting glaciers will be more rapid than estimated. That last IPCC assessment estimated that sea levels could rise from between 44 cm and 74 cm by 2100.⁶⁵ A study published in 2018 based on 25 years of satellite data showed accelerated rates of sea level rise driven by the melting of the Greenland and Antarctic ice sheets and predicted that if these rates continue, sea levels would rise by 65 centimeters or 26 inches by 2100 compared to past estimate, or about double the rate originally estimated.⁶⁶

20. As expected (and consistent with the temperature increases in land surfaces), ocean temperatures have also increased.⁶⁷ This has led to changes in the ocean's ability to circulate heat around the globe; which can have catastrophic implications for the global climate system.⁶⁸ Two studies published in *Nature* in 2018 determined that freshwater from melting glaciers had slowed the Atlantic meridional overturning circulation to an extent not evident over the last 1,600 years.⁶⁹ The average temperature of the global ocean has increased significantly despite its ability to absorb enormous amounts of heat before exhibiting any signs.⁷⁰ In addition, the most significant indicator of the planet's energy imbalance due to human-induced GHG increases, is the long-term increase in global average ocean heat content over the last 50 years, extending down to several thousand meters below the ocean surface.⁷¹
21. As predicted, precipitation patterns have changed due to increases in atmospheric moisture levels and changes in atmospheric air circulation patterns; just another indicator that the Earth is warming.⁷² As the Earth warms, moisture levels are expected to increase when temperature increases because warmer air generally holds more moisture.⁷³ In more arid regions, however, higher temperatures lead to greater evaporation.⁷⁴
22. These changes in the Earth's water cycle increase the potential for, and severity of, severe storms, flooding and droughts.⁷⁵ Storm-prone areas are already experiencing a greater chance of severe storms, and this will continue.⁷⁶ Precipitation intensity is likely to

⁶⁵ John A. Church, Peter U. Clark et al. *Sea Level Change*, IPCC, Climate Change 2013: The Physical Science Basis, Chapter 13, at 1182, Table 13.5 (2013), available at <http://www.ipcc.ch/report/ar5/wg1/>.

⁶⁶ R. S. Nerem, B. D. Beckley, J. T. Fasullo, B. D. Hamlington, D. Masters and G. T. Mitchum, *Climate-change-driven accelerated sea-level rise detected in the altimeter era*, 115 *Proceedings Nat'l Academy Sciences* 2022-2025 (Feb. 2018), available at <https://doi.org/10.1073/pnas.1717312115>.

⁶⁷ IPCC, *AR4* at 30; EPA, *TS Endangerment Findings* at ES-2.

⁶⁸ USGCRP, *Global Climate Change Impacts* at 26.

⁶⁹ Summer K. Praetorius, North Atlantic circulation slows down, 556 *Nature* 180 (2018), available at <https://www.nature.com/magazine-assets/d41586-018-04086-4/d41586-018-04086-4.pdf>.

⁷⁰ UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP), *CLIMATE CHANGE SCIENCE COMPENDIUM 2009* at 26 (UNEP/Earthprint, 2009).

⁷¹ S. Levitus et al., *Global ocean heat content 1955-2008 in light of recently revealed instrumentation problems* 36 *J. GEOPHYSICAL RES. LETTERS* L07608 (April 2009).

⁷² USGCRP, *Global Climate Change Impacts* at 13, 17, 21, 36, 42, 74.

⁷³ EPA, *TS Endangerment Findings* at 111.

⁷⁴ *Id.*

⁷⁵ *Id.*

⁷⁶ *Id.* at 120-121; USGCRP, *Global Climate Change Impacts* at 27.

increase across the United States, with increase prevalence of flash flooding, coupled with increased droughts between these intense precipitation events.⁷⁷

23. These changes are already occurring: Droughts in parts of the midwestern, southeastern, and southwestern United States have increased in frequency and severity within the last fifty years, coincident with rising temperatures.⁷⁸ In 2009, more than half of the United States received above normal precipitation; yet the southwestern United States (Arizona in particular) had one of its driest periods.⁷⁹
24. Based on the laws of physics and the past climate record, scientists have concluded that precipitation events will increase globally, particularly in tropical and high latitude regions, while decreasing in subtropical and mid-latitude regions,⁸⁰ with longer periods between normal heavy rainfalls.⁸¹
25. Other changes consistent with climate modeling resulting from global warming have been observed not just in the amount, intensity, and frequency of precipitation but also in the type of precipitation.⁸² In higher altitude and latitude regions, including in mountainous areas, more precipitation is falling as rain rather than snow.⁸³ With early snow melt occurring because of climate change, the reduction in snowpack can aggravate water supply problems.⁸⁴ In Northern Europe and the northeastern United States, a change in air currents -- caused by the warming Arctic -- brought severe snowstorms during the winters of 2009-2010.⁸⁵
26. As expected global sea levels have also risen.⁸⁶ Sea levels have been rising at an average rate of 3.1 millimeters per year based on measurements from 1993 to 2003.⁸⁷ Though sea levels rose about 8 inches over the last century, with the rate nearly doubling in the last two decades.⁸⁸ Rising seas, brought about by melting of polar icecaps and glaciers, as

⁷⁷ EPA, *TS Endangerment Findings* at 115.

⁷⁸ *Id.* at 145, 143, 148.

⁷⁹ *State of the Climate, 2009* at S138.

⁸⁰ EPA, *TS Endangerment Findings* at ES-4, 74.

⁸¹ EPA, *TS Endangerment Findings* at 74.

⁸² *Id.* at ES-2.

⁸³ USGCRP, *Global Climate Change Impacts* at 18, 45.

⁸⁴ *Id.* at 33

⁸⁵ NOAA, *Arctic Report Card: Update for 2010*, (December 10, 2010) (last visited November 16, 2018) available at ftp://ftp.oar.noaa.gov/arctic/documents/ArcticReportCard_full_report2010.pdf) at 13, 15; See also Climate Science Watch, *Climatologist Ben Santer on the attribution of extreme weather events to climate change*, (December 29, 2010) (last visited April 9, 2011) <http://climateprogress.org/2010/12/29/ben-santer-attribution-extreme-weather-events-to-climate-change/#more>.

⁸⁶ USGCRP, *Global Climate Change Impacts*, at 10; EPA, *TS Endangerment Findings* at ES-3; IPCC, *AR5* at 42.

⁸⁷ IPCC, *AR5* at 124.

⁸⁸ NASA, *Climate Change: How Do We Know?, Sea Level Rise* (last visited November 16, 2018) <http://climate.nasa.gov/evidence/#no4> (citing J.A. Church & N.J. White, *A 20th Century Acceleration in Global Sea Level Rise* (2006) 33 *Geophysical Research Letters*, L01602, doi: 10.1029/2005GL024826).

well as by thermal expansion of the warming oceans, will cause flooding in coastal and low-lying areas.⁸⁹ The combination of rising sea levels and more severe storms creates conditions conducive to severe storm surges during high tides.⁹⁰ In coastal communities this can overwhelm coastal defenses (such as levees and sea walls), as witnessed during Hurricane Katrina.⁹¹

27. Sea level is not uniform across the globe, because it depends on variables such as ocean temperature and currents.⁹² Unsurprisingly, the most vulnerable lands are low-lying islands, river deltas, and areas that already lie below sea level because of land subsidence.⁹³ Based on these factors, scientists have concluded that the threats to the United States from rising seas are the most severe on the Gulf and Atlantic Coasts.⁹⁴ Worldwide, hundreds of millions of people live in river deltas and vulnerable coastlines along the southern and eastern coasts of Asia where rivers draining the Himalayas flow into the Indian and Pacific Oceans.⁹⁵
28. In a comprehensive review of studies on sea level rise in the 21st century published by the British Royal Society, researchers estimated the probable sea level rise for this century between .5 and 2 meters (1 ½ to 6 ½ feet), continuing to rise for several centuries after that, depending on future CO₂ levels and the behavior of polar ice sheets.⁹⁶
29. The IPCC and other scientists estimate a 1 to 2 meter rise in sea level by 2100 that does not include flows of major ice sheets.⁹⁷ “Today, rising sea levels are submerging low-lying lands, eroding beaches, converting wetlands to open water, exacerbating coastal flooding, and increasing the salinity of estuaries and freshwater aquifers.”⁹⁸ The impacts of rising sea levels can be seen in many coastal locations across the nation; along the Florida coast for instance, sea level is rising about 1 inch every 11-14 years.⁹⁹ This

⁸⁹ EPA, *TS Endangerment Findings* at ES-7; USGCRP, *Global Climate Change Impacts* at 25, 62-63.

⁹⁰ USGCRP, *Global Climate Change Impacts* at 109; EPA, *TS Endangerment Findings* at 75.

⁹¹ EPA, *TS Endangerment Findings* at 86, 118.

⁹² USGCRP, *Global Climate Change Impacts* at 25-26, 37.

⁹³ EPA, *TS Endangerment Findings* at 121.

⁹⁴ *Id.* at 128; USGCRP, *Global Climate Change Impacts* at 57.

⁹⁵ EPA, *TS Endangerment Findings* at 159; IPCC, *AR4* at 52.

⁹⁶ R.J. Nicholls et al., *Sea-level rise and its possible impacts given a ‘beyond 4°C world’ in the twenty-first century*, PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY 161-181, 168 (2011).

⁹⁷ IPCC, *AR5* at 47; M. Vermeer & S. Rahmstorf, *Global Sea Level Linked to Global Temperature*, 106 PROC. NATL. ACAD. SCI. 21527, 21531 (2009).

⁹⁸ U.S. Climate Change Science Program, USCCSP, *Coastal Sensitivity to Sea-Level Rise: A Focus on the Mid-Atlantic Region* [hereinafter *Coastal Sensitivity to Sea-Level Rise*] 2 (Jan. 2009), available at <https://www.globalchange.gov/sites/globalchange/files/sap4-1-final-report-all.pdf>.

⁹⁹ EPA, *Saving Florida’s Vanishing Shores* (March 2002) available at <https://nepis.epa.gov/Exe/ZyNET.exe/0000014E.TXT?ZyActionD=ZyDocument&Client=EPA&Index=2000+Thru+2005&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C00thru05%5CTxt%5C00000004%5C0000014E.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=h>

seemingly small rise in ocean levels is contributing to massive erosion, causing many homeowners to remove beachfront property, and has led to a decline in the recreational value of beaches.¹⁰⁰ Other coastal states (such as Maryland and Louisiana) are also experiencing wetland loss due to rising sea levels.¹⁰¹ Scientists have predicted that wetlands in the Mid-Atlantic region of the United States cannot withstand a 7-millimeter per year rise in sea levels.¹⁰²

30. As expected, mountain glaciers, which are the source of freshwater for hundreds of millions of people, are receding worldwide because of warming temperatures.¹⁰³ In 2010, Glacier National Park in Montana had twenty-five glaciers larger than twenty-five acres, down from one hundred and fifty in 1850.¹⁰⁴ The year 2017 marked the 38th consecutive year in which glaciers lost mass.¹⁰⁵ Mountain glaciers are in retreat all over the world, including Mt. Kilimanjaro in Africa, the Himalayas, the Alps (99% in retreat), the glaciers of Peru and Chile (92% in retreat), and in the United States.¹⁰⁶ In the Brooks Range of northern Alaska, all of the glaciers are in retreat and in southeastern Alaska 98% are in retreat.¹⁰⁷
31. Although a minor contribution to sea level rise, the melting of mountain glaciers is particularly serious in areas that rely on snow melt for irrigation and drinking water supply.¹⁰⁸ In effect, a large snow pack or glacier acts as a supplemental reservoir or water tower, holding a great deal of water in the form of ice and snow through the winter and spring and releasing it in the summer when rainfall is lower or absent.¹⁰⁹ The water systems of the western United States (particularly in California) and the Andean nations of Peru and Chile, among other places, all heavily rely on these natural forms of water storage.¹¹⁰ In addition to providing a more reliable water supply, the storing of

[pfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL.](#)

¹⁰⁰ *Id.*

¹⁰¹ USCCSP, *Coastal Sensitivity to Sea-Level Rise*, at 3-4.

¹⁰² *Id.* at 4.

¹⁰³ See *TS Endangerment Findings* at 111 (“Glaciers throughout North America are melting, and the particularly rapid retreat of Alaskan glaciers represents about half of the estimated loss of glacial mass worldwide.”).

¹⁰⁴ United States Geological Survey (Northern Rocky Mountain Science Center), *Retreat of Glaciers in Glacier National Park* (June 2010), https://www.usgs.gov/centers/norock/science/retreat-glaciers-glacier-national-park?qt-science_center_objects=0#qt-science_center_objects

¹⁰⁵ National Oceanic and Atmospheric (NOAA), *State of the Climate in 2017*, 99 BULL. AMER. METEOR. SOC. at Sxvi (2017).

¹⁰⁶ L. Thompson, *Climate Change: The Evidence and Our Options*, 33 THE BEHAVIOR ANALYST No. 2 (Fall) 153, 155-160 (2010); USGRCP, *Global Climate Change Impacts* at 18.

¹⁰⁷ L. Thompson, *Climate Change: The Evidence and Our Options*, 33 THE BEHAVIOR ANALYST No. 2 (Fall) 153, 158 (2010).

¹⁰⁸ IPCC, *AR4* at 49.

¹⁰⁹ See L. Thompson, *Climate Change: The Evidence and Our Options*, 33 THE BEHAVIOR ANALYST No. 2 (Fall) 153, 164 (2010).

¹¹⁰ See *Id.* at 155 – 160, 164.

precipitation as ice and snow helps moderate potential flooding.¹¹¹

32. Yet as temperatures warm, not only will these areas lose this supplemental form of water storage, but also severe flooding is likely to increase (because when rain falls on snow, it accelerates the melting of glaciers and snow packs).¹¹² Ice is melting most dramatically at the poles.¹¹³ Sea ice in the Arctic oceans is expected to decrease and may even disappear entirely in coming decades.¹¹⁴
33. Beginning in late 2000, the Jakobshavn Isbrae Glacier (which has a major influence over the mass of the Greenland ice sheet), lost significant amounts of ice.¹¹⁵ In August of 2010, an enormous iceberg (roughly ninety-seven square miles in size) broke off from Greenland.¹¹⁶ Nine Antarctic ice shelves have also collapsed into icebergs between 1959 and 2009, (six of them after 1996).¹¹⁷ An ice shelf roughly the size of Rhode Island collapsed in 2002, an ice bridge collapsed in 2009, leaving an ice shelf the size of Jamaica on the verge of shearing off, and in 2018 an ice sheet twice the size of Luxembourg calved.¹¹⁸ The 2002 collapse of the Larsen Ice Shelf, which had existed for at least 11,000 years, was “unprecedented in respect to both area and time.”¹¹⁹ The “sudden and complete disintegration” of the Larsen Ice Shelf took a *mere 35 days*.¹²⁰
34. During the 2007-melt season, the extent of Arctic sea ice (frozen ocean water) declined precipitously to its lowest level since satellite measurements began in 1979.¹²¹ By the end

¹¹¹ EPA, *TS Endangerment Findings* at 111; USGCRP, *Global Climate Change Impacts* at 64.

¹¹² EPA, *TS Endangerment Findings* at 111.

¹¹³ L. Thompson, *Climate Change: The Evidence and Our Options*, 33 THE BEHAVIOR ANALYST No. 2 (Fall) 153, 160 (2010) (“[P]olar ice sheets are slower to respond to temperature rise than the smaller mountain glaciers, but they too, are melting. . . . The loss of ice in the Arctic and Antarctic regions is especially troubling because these are the locations of the largest ice sheets in the world.”).

¹¹⁴ EPA, *TS Endangerment Findings* at 120; USGCRP, *Global Climate Change Impacts* at 20-21 (“Studies published after the appearance of the IPCC Fourth Assessment Report in 2007 have also found human fingerprints in the increased levels of atmospheric moisture (both close to the surface and over the full extent of the atmosphere), in the decline of Arctic sea ice extent, and in the patterns of change in Arctic and Antarctic surface temperatures.”).

¹¹⁵ GARY BRAASCH & BILL MCKIBBEN, *EARTH UNDER FIRE* 18-20 (2009); *See also* J.E. Box et. al., (NOAA) *Greenland*, ARCTIC REPORT CARD at 55 (Oct. 2010) (“A clear pattern of exceptional and record-setting warm air temperatures is evident at long-term meteorological stations around Greenland.”).

¹¹⁶ NASA Earth Observatory, *Ice Island Calves Off Petermann Glacier* (Aug. 2010), <http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=45112&src=eorss-nh>.

¹¹⁷ Alister Doyle, *Antarctic Ice Shelf Set to Collapse Due to Warming*, Reuters (Jan. 19, 2009) <http://www.reuters.com/article/idUSTRE50I4G520090119>.

¹¹⁸ NASA Earth Observatory, *Wilkins Ice Bridge Collapse* (April 2009), <http://earthobservatory.nasa.gov/IOTD/view.php?id=37806>; *see also* *Expected Sea-Level Rise Following Antarctic Ice Shelves’ Collapse*, SCIENCE DAILY (July, 2018), <https://www.sciencedaily.com/releases/2018/07/180719085424.htm>.

¹¹⁹ U.S. Geological Survey, *Coastal-Change and Glaciological Map of the Larsen Ice Shelf Area, Antarctica: 1940-2005* at 10 (2008) <http://pubs.usgs.gov/imap/2600/B/Larsenpamphlet12600B.pdf>

¹²⁰ *Id.* at 10.

¹²¹ National Snow and Ice Data Center (NSDIC), Press Release, *Arctic Sea Ice Shatters All Previous Record Lows* (October 1, 2007),

of 2010 Arctic sea ice was at the lowest level in the satellite record for the month of December.¹²² Continuing the trends of the last several years, ice formation in the autumn of 2018 lagged significantly behind averages from the 30 years prior to 2010.¹²³

35. Arctic sea ice plays an important role in stabilizing the global climate, because it reflects back in to space much of the solar radiation that the region receives.¹²⁴ In contrast, open ocean water absorbs much more heat from the sun, thus, amplifying human-induced warming and creating an increased global warming effect.¹²⁵ As arctic sea ice decreases the region is less capable of stabilizing the global climate and may act as a feedback loop (thereby aggravating global warming).¹²⁶

36. Scientists have also documented an overall trend of sea-ice thinning.¹²⁷ The year 2017 marked the 11th time in the past 12 years, and 12th consecutive June, with lower spring Canadian and American Arctic snow cover than averages from the 1981-2010 period.¹²⁸

37. There has been a general increase in permafrost temperatures and permafrost melting in Alaska and other parts of the Arctic (particularly since 2000). Permafrost temperatures in 2016 were among the highest on record (since 1978) with the greatest increases in cold permafrost¹²⁹ Because much of the Arctic permafrost overlays old peat bogs, scientists believe (and are concerned) that the melting of the permafrost¹³⁰ may release methane that will further increase global warming to even more dangerous levels.¹³¹

38. Changes in these different aspects of Earth's climate system over the last century tell a coherent story: the impacts we see today are consistent with the scientific understanding of

http://nsidc.org/news/press/2007_seaiceminimum/20071001_pressrelease.html (last visited April 9, 2011); EPA, *TS Endangerment Findings* at 27 (“Average arctic temperatures increased at almost twice the global average rate in the past 100 years.”).

¹²² NSIDC, *Repeat of a negative Arctic Oscillation leads to warm Arctic, low sea ice extent*, ARCTIC SEA ICE NEWS & ANALYSIS, (January 5, 2011), <http://nsidc.org/arcticseaicenews/2011/010511.html> (last visited November 16, 2018).

¹²³ NSIDC, *Unusual Warmth Continues*, ARCTIC SEA ICE NEWS & ANALYSIS (November 5, 2018) <http://nsidc.org/arcticseaicenews/2018/11/unusual-warmth-continues/> (last visited November 16, 2018).

¹²⁴ EPA, *Climate Change Indicators in the United States*, 39 (2016), available at https://www.epa.gov/sites/production/files/2016-08/documents/climate_indicators_2016.pdf [hereinafter *Climate Change Indicators*]; See also EPA, *TS Endangerment Findings* at 40.

¹²⁵ EPA, *Climate Change Indicators* 52 (2010); USGCRP, *Global Climate Change Impacts* at 39.

¹²⁶ EPA, *Climate Change Indicators*, *supra* note 121.

¹²⁷ NOAA, *State of the Climate in 2017*, *supra* note 102, at sxvi.

¹²⁸ Derksen, C., R. Brown, L. Mudryk, K. Luoju, & S. Helfrich, *Terrestrial Snow Cover*, ARCTIC REPORT CARD (2017), available at ftp://ftp.oar.noaa.gov/arctic/documents/ArcticReportCard_full_report2017.pdf.

¹²⁹ J. Richter-Menge, J.E. Overland, J.T. Mathis, & E. Osborne, *Executive Summary*, ARCTIC REPORT CARD, *supra*.

¹³⁰ *Id.*, see also, USGCRP, *Global Climate Change Impacts* at 139, 142 (“The higher temperatures are already contributing to . . . permafrost warming.”).

¹³¹ See IPCC, *4.4.6 Tundra and Arctic/Antarctic Ecosystems*, CLIMATE CHANGE 2007: FOURTH ASSESSMENT REPORT, WORKING GROUP II, IMPACTS, ADAPTATION, AND VULNERABILITY 231 (2007).

how the climate system should respond to GHG increases from human activities and how the Earth has responded in the past (reflected in such evidence as: ice cores that have trapped air from thousands and even a few million years ago, tree rings and seabed sediments that show where sea level was thousands and even millions of years ago).¹³² Collectively, these changes cannot be explained as the product of natural climate variability or a tilt in the Earth's axis alone.¹³³ A large human contribution provides the best explanation of observed climate changes.¹³⁴

39. These well-documented and observable impacts from the changes in Earth's climate system highlight that the current level of atmospheric CO₂ concentration has already taken the planet into a danger zone.¹³⁵ The Earth will continue to warm in reaction to concentrations of CO₂ from past emissions as well as future emissions.¹³⁶ Warming already in the pipeline is mostly attributable to climate mechanisms that slowly heat the Earth's climate system in response to atmospheric CO₂.¹³⁷
40. The Earth's oceans play a significant role in keeping our atmospheric climate in the safe-zone.¹³⁸ The oceans constantly absorb CO₂ and release it back into the atmosphere at rates that maintain a balance.¹³⁹ Because we now release so much CO₂, the oceans have absorbed about one-third of the CO₂ emitted from human activity over the past two centuries.¹⁴⁰ This capacity has slowed global warming, but at a cost: the added CO₂ has changed the chemistry of the oceans, causing the oceans' average surface pH (a measurement of hydrogen ions) to drop by an average of .1 units.¹⁴¹ Although this may seem relatively small, the pH scale is logarithmic, so that a reduction of only one unit means that the solution has in fact become ten times more acidic.¹⁴² A drop of .1 pH units means that the concentration of hydrogen ions in seawater has gone up by 30% in the past

¹³² USGCRP, *Global Climate Change Impacts* at 26.

¹³³ *Id.* at 14-16.

¹³⁴ Susan Solomon et al., *Irreversible climate change due to carbon dioxide emissions*, 106 PNAS 1704, 1704 – 1709 (Feb. 10, 2009), available at www.pnas.org/cgi/doi/10.1073/pnas.0812721106 (last visited November 16, 2018).

¹³⁵ USGCRP, *Global Climate Change Impacts* at 23.

¹³⁶ USGCRP, *Global Climate Change Impacts* at 14-16, 84-; see also, EPA, *TS Endangerment Findings* at 26.

¹³⁷ Fred Pearce, *WITH SPEED AND VIOLENCE: WHY SCIENTISTS FEAR TIPPING POINTS IN CLIMATE CHANGE* 101-104 (Beacon Press 2007); IPCC, *AR4* at 72.

¹³⁸ See EPA, *TS Endangerment Findings* at 16, 38.

¹³⁹ IPCC, *AR5* at 4.

¹⁴⁰ Inter-Agency Working Group on Ocean Acidification, *Strategic Plan for Federal Research and Monitoring of Ocean Acidification* (March 2014) (“Inter-Agency Report, *Impacts of Ocean Acidification*”) at 10, available at

<ftp://ftp.oar.noaa.gov/OA/IWGOA%20documents/IWGOA%20Strategic%20Plan.pdf>; see also *TS Endangerment Findings* at 38 (“[T]he total inorganic carbon content of the oceans increased by 118 ± 19 gigatonnes of carbon (GtC) between 1750 and 1994 and continues to increase.”).

¹⁴¹ Inter-Agency Report, *Ocean Acidification* at 10; USGCRP, *Global Climate Change Impacts* at 17, EPA, *TS Endangerment Findings* at 38.

¹⁴² HARVEY BLATT, *AMERICA'S ENVIRONMENTAL REPORT CARD 158* (MIT Press 2005).

two centuries.¹⁴³ If CO₂ levels continue to rise to 500 ppm, we could see a further drop of .3 pH units by 2100.¹⁴⁴

41. Ocean acidification harms animals that use calcium to build their shells, as well as single-celled organisms that are an essential part of the marine food chain.¹⁴⁵ This is because the acidified waters affect the structural integrity and survival of shell-building marine organisms such as corals and shellfish by effectively robbing them of the key chemical (carbonate ion) they need to build their skeletons.¹⁴⁶ It also adversely impacts some kinds of algae and single-celled organisms that use calcification processes for survival.¹⁴⁷ Some of these organisms comprise magnificent natural features, such as the White Cliffs of Dover.¹⁴⁸ Coral reefs are major habitats for ocean fauna; and calcifying algae and plankton are key components of the marine food chain.¹⁴⁹
42. About 55 million years ago, the ocean absorbed a large amount of CO₂, likely due to a release of methane from the ocean floor that caused the Earth's temperatures to rise several degrees and led to the extinction of many species worldwide.¹⁵⁰ The absorption of so much CO₂ also led to the death of calcifying organisms on the seafloor.¹⁵¹ It took over 100,000 years for the ocean to regain its normal alkalinity.¹⁵² The current level of CO₂ being taken in by the ocean decreases the ability of coral and other calcium-based marine life to produce their skeletons, which affects the growing of coral and thus coral reefs.¹⁵³
43. The warming of oceans contributes to the bleaching of corals.¹⁵⁴ Corals contain a tiny alga that provides them with food and that accounts for their color.¹⁵⁵ When the oceans warm, the algae give off toxins, and the corals, in order to survive the toxin, expel the

¹⁴³ A. Ridgwell & D. Schmidt, *Past constraints on the vulnerability of marine calcifiers to massive carbon dioxide release*, 3 NATURE GEOSCIENCE 196, 196-200 (2010).

¹⁴⁴ IPCC, AR5 at 12.

¹⁴⁵ EPA, *TS Endangerment Findings* at 38.

¹⁴⁶ USGCRP, *Global Climate Change Impacts* at 85.

¹⁴⁷ *Id.*

¹⁴⁸ Carl Zimmer, *An Ominous Warning on the Effects of Ocean Acidification*, Yale Environment360, (February 15, 2010), available at http://e360.yale.edu/feature/an_ominous_warning_on_the_effects_of_ocean_acidification/2241/ (last visited November 17, 2018).

¹⁴⁹ EPA, *Coral Reef Biological Criteria: Using the Clean Water Act to Protect a National Treasure 3-1* (July 2010), available at https://cfpub.epa.gov/si/si_public_record_report.cfm?Lab=NHEERL&dirEntryID=223392 (last visited November 17, 2018).

¹⁵⁰ James C. Zachos et al., *Rapid Acidification of the Ocean During the Paleocene-Eocene Thermal Maximum*, 308 SCIENCE 1611, 1611-1615 (June 10, 2005).

¹⁵¹ *Id.*

¹⁵² *Id.*

¹⁵³ Inter-Agency Report, *Ocean Acidification* at 10.

¹⁵⁴ EPA, *TS Endangerment Findings* at 103; USGCRP, *Global Climate Change Impacts* at 148.

¹⁵⁵ USGCRP, *Global Climate Change Impacts* at 84, 151-52; See EPA, *TS Endangerment Findings* at 138.

algae, thereby bleaching the coral.¹⁵⁶ If the water temperature does not fall enough to permit algae to survive within the coral without releasing the toxin, the corals will eventually die.¹⁵⁷ There have been several severe episodes of coral bleaching in recent years.¹⁵⁸ With continued warming, the coral may not be able to survive.¹⁵⁹

44. Changes in water supply and water quality will also impact agriculture in the US.¹⁶⁰ Additionally, increased heat and associated issues such as pests, crop diseases, and weather extremes, will all impact crop and livestock production and quality.¹⁶¹ For example, climate change in the United States has produced warmer summers, enabling the mountain pine beetle to produce two generations of beetles in a single summer season, where it had previously only been able to produce one; in Alaska, the spruce beetle is maturing in one year when it had previously taken two years.¹⁶² The expansion of the forest beetle population has killed millions of hectares of trees across the United States and Canada and resulted in millions of dollars lost from decreased timber and tourism revenues.¹⁶³
45. Agriculture is extremely susceptible to climate changes and higher temperatures generally reduce yields of desirable crops while promoting pest and weed¹⁶⁴ proliferation.¹⁶⁵ Global climate change is predicted to decrease crop yields, increase crop prices, decrease worldwide calorie availability, and by 2050 increase child malnutrition by 20%.¹⁶⁶ Climate change threatens global food security and so any effort to mitigate global

¹⁵⁶ USGCRP, *Global Climate Change Impacts* at 84, 151-52.

¹⁵⁷ *See id.*

¹⁵⁸ *Id.* at 84.

¹⁵⁹ *Id.* at 84-85.

¹⁶⁰ USGCRP, *Global Climate Change Impacts* at 126; *See* United States Department of State (USDS), *U.S. Climate Action Report 2010, Fifth National Communication of the United States of America Under the United Nations Framework Convention on Climate Change* [hereinafter *U.S. Climate Action Report*] 87 (June 2010) available at <http://www.state.gov/documents/organization/140636.pdf>.

¹⁶¹ *Id.*

¹⁶² Subcomm. on Glob. Change Res., U.S. Climate Change Sci. Program, *Weather and Climate Extreme in a Changing Climate, Regions of Focus: North America, Hawaii, Caribbean, and U.S. Pacific Islands* [hereinafter *Weather and Climate Extremes*], IN SYNTHESIS AND ASSESSMENT PRODUCT 3.3 15 (T. R. Karl et al. eds., 2008), <https://www.climatecommunication.org/wp-content/uploads/2012/01/climateextremes.pdf>.

¹⁶³ *Id.*

¹⁶⁴ P. Blacklund et al., Subcomm. on Glob. Change Res., U.S. Climate Change Sci. Program, USCCSP & USDA, *The Effects of Climate Change on Agriculture, Land Resources, Water Resources, and Biodiversity in the United States*, in *Synthesis and Assessment Product 4.3* (2008) at 59, https://www.cio.noaa.gov/services_programs/prplans/pdfs/ID194_Final_Peer_Review_Report.pdf (“Many weeds respond more positively to increasing CO₂ than most cash crops, . . . Recent research also suggests that glyphosate, the most widely used herbicide in the United States, loses its efficacy on weeds grown at CO₂ levels that likely will occur in the coming decades.”) available at https://www.usda.gov/oce/climate_change/SAP4_3/CCSPFinalReport.pdf

¹⁶⁵ G. C. Nelson et al., Int’l Food Pol’y Res. Inst., *Food Policy Report: Climate Change- Impacts on Agriculture and Costs of Adaptation* (2009) at vii.

¹⁶⁶ *Id.*

warming is effectively promoting a secure food supply.¹⁶⁷

46. Glacial and ice cap melting is one of the major causes of global sea level change.¹⁶⁸ When glaciers and ice caps melt, this adds water to the ocean.¹⁶⁹ Another cause is that as ocean water warms, it expands and takes up more space; therefore, ocean warming “has been observed in each of the world’s major ocean basins, and has been directly linked to human influences.”¹⁷⁰
47. Human-caused fossil fuel burning and the resulting climate change are already contributing to an increase in asthma, cancer, cardiovascular disease, stroke, heat-related morbidity and mortality, food-borne diseases, and neurological diseases and disorders.¹⁷¹ The World Health Organization has concluded, “the health effects of a rapidly changing climate are likely to be overwhelmingly negative”.¹⁷² Climate change is not only expected to affect the basic requirements for maintaining health (clean air and water, sufficient food, and adequate shelter) but is likely to present new challenges for controlling infectious disease and even “halt or reverse the progress that the global public health community is now making against many of these diseases.”¹⁷³
48. As the 2010 Russian summer heat wave graphically demonstrated, heat can destroy crops, trigger wildfires, exacerbate air pollution, and cause increased illness and deaths.¹⁷⁴ Similar impacts are occurring across the United States: the “number and frequency of forest fires and insect outbreaks are increasing in the interior West, the Southwest, and Alaska. Precipitation, streamflow, and stream temperatures are increasing in most of the continental United States. The western United States is experiencing reduced snowpack and earlier peaks in spring runoff. The growth of many crops and weeds is being stimulated. Migration of plant and animal species is changing the composition and structure of arid, polar, aquatic, coastal, and other ecosystems.”¹⁷⁵ Up to 30% of the millions of species on our planet could go extinct following just a few tenths of a degree

¹⁶⁷ *Id.* at ix (“Climate change will pose huge challenges to food-security efforts. Hence, any activity that supports agricultural adaptation also enhances food security.”).

¹⁶⁸ M. Sharp et al., *Mountain Glaciers and Ice Caps (Outside Greenland)*, in ARCTIC REPORT CARD 2010 at 107 (2010) available at

https://www.cio.noaa.gov/services_programs/prplans/pdfs/ID194_Final_Peer_Review_Report.pdf.

¹⁶⁹ USGCRP, *Global Climate Change Impacts supra* note 2 at 18.

¹⁷⁰ *Id.*

¹⁷¹ See Ctr. for Health and the Glob. Env’t, Harv. Med. Sch., *Climate Change Futures: Health, Ecological, and Economic Dimensions* (November 2005) available at eetd.lbl.gov/emills/pubs/pdf/climate-change-futures.pdf; see also USGCRP, *Global Climate Change Impacts supra* note 2 at 96-8.

¹⁷² WHO, *Climate Change and Health* (2018), available at <http://www.who.int/news-room/fact-sheets/detail/climate-change-and-health>.

¹⁷³ WHO, *Protecting Health from Climate Change: Connecting Science, Policy, and People* (2009) at 2, available at <http://www.who.int/globalchange/publications/reports/9789241598880/en/index.html>.

¹⁷⁴ R.M. Dole et al, *Was There a Basis for Anticipating the 2010 Russian Heat Wave?* GEOPHYS. RES. LETT., VOL.38(6) (Am. Geophys. Assoc. eds. 2011).

¹⁷⁵ EPA, *Terminology Services Document* at 41.

warming above present.¹⁷⁶ Large wildfires in the Western US have quadrupled in recent years, a result of hotter temperatures and earlier snowmelt that contributes to dryer soils and vegetation.¹⁷⁷

49. Similarly, climate change is already causing, and will continue to result in, more frequent, extreme, and costly weather events (such as hurricanes).¹⁷⁸ The annual number of major tropical storms and hurricanes has increased over the past 100 years in North America, coinciding with increasing temperatures in the Atlantic sea surface.¹⁷⁹
50. The changing climate also raises national security concerns, as “climate change will add to tensions even in stable regions of the world.”¹⁸⁰ The United States may experience an additional need to accept immigrant and refugee populations as droughts increase and food production declines in other countries.¹⁸¹ Increased extreme weather events (such as hurricanes) will also present an increased strain on foreign aid and call for military forces.¹⁸² For instance, by 2025, 40% of the world’s population will be living in countries experiencing significant water shortages, while sea-level rise could cause displacement of tens, or even hundreds, of millions of people.¹⁸³
51. Paleoclimate data provides sobering evidence that major climate change can occur in decades, and that the consequences would be much more severe, and even disastrous, if a 2°C (3.6°F) change occurs over decades rather than hundreds of years.¹⁸⁴
52. There are at least three reasons that the present, human-induced global warming is particularly significant. First, past global warming and cooling of a similar magnitude occurred before human civilization existed.¹⁸⁵ Second, global warming is happening far more rapidly than in past occurrences¹⁸⁶, giving both humans and other forms of life only a short time to adapt to the changes. Human civilization and the crops and foods on which

¹⁷⁶ IPCC, *AR4, Working Group II: Impacts, Adaptation and Vulnerability- Magnitudes of Impact*, available (2007) at http://www.ipcc.ch/publications_and_data/ar4/wg2/en/spmssp-c-15-magnitudes-of.html.

¹⁷⁷ *Global Climate Change Impacts supra* note 2 at 95.

¹⁷⁸ *Id.* at 27 (“Many types of extreme weather events, such as heat waves and regional droughts, have become more frequent and intense during the past 40 to 50 years.”).

¹⁷⁹ *Scientific Assessment supra* note 27 at 7.

¹⁸⁰ The CNA Corporation, Mil. Advisory Bd., *National Security and the Threat of Climate Change* (2007) at 7, available at http://securityandclimate.cna.org/report/SecurityandClimate_Final.pdf.

¹⁸¹ *Id.*

¹⁸² *Id.*

¹⁸³ *Id.* at 16.

¹⁸⁴ See J.E. Hansen & M. Sato, *Paleoclimate Implications for Human-Made Climate Change in Climate Change: Inferences from Paleoclimate and Regional Aspects*, (Springer eds., 2012) at 21-48, available at http://www.columbia.edu/~jeh1/mailings/2011/20110118_MilankovicPaper.pdf.

¹⁸⁵ See J.E. Hansen et al., *Target Atmospheric CO₂: Where Should Humanity Aim?*, OPEN ATMOS. SCI. 217, 217-231 (2008).

¹⁸⁶ *Id.*

it depends have developed within a very narrow set of climatic conditions.¹⁸⁷ With the human population so large, with civilization so complex, centered around coastal cities, and dependent on water supplies fed by distant ice and snow melt, and with the great disparities in wealth between and within countries and regions, it will be nearly impossible to adapt to all of the climate change impacts in the quick time-frame in which they will occur.¹⁸⁸ The deadliest fire in California history, the Camp Fire, was exacerbated by drought and wind conditions associated with climate change.¹⁸⁹

53. Third, and perhaps most importantly, the climate change we are now experiencing is caused largely by human activity.¹⁹⁰ This means that unlike with respect to past climate change events, by changing our activities humans can mitigate or even halt this warming before it causes catastrophic and irreversible effects.¹⁹¹ Stopping, or at least greatly curtailing, the activities that discharge greenhouse gases into the air, such as the burning of fossil fuels and deforestation, and encouraging activities that remove CO₂ from the atmosphere, can greatly reduce and even end global warming and its accompanying consequences within the lifetimes of today's children.¹⁹²
54. To protect Earth's climate for present and future generations, we must restore Earth's energy balance. The best available science shows that if the planet once again sends as much energy into space as it absorbs from the sun, this will restore the planet's climate equilibrium.¹⁹³ Scientists have accurately calculated how Earth's energy balance will change if we reduce long-lived greenhouse gases such as carbon dioxide.¹⁹⁴ Humans have

¹⁸⁷ J. Abatzoglou et al., *A Primer on Global Climate Change and Its Likely Impacts* 15, in CLIMATE CHANGE: WHAT IT MEANS FOR US, OUR CHILDREN, AND OUR GRANDCHILDREN (Joseph F. DiMento & Pamela Doughman eds., MIT Press 2007).

¹⁸⁸ See generally U.S. Agency Int'l Dev. (USAID), *Adapting to Climate Variability and Change: A Guidance Manual for Development Planning* (2007) (discussing difficulty of adapting to climate change), available at http://pdf.usaid.gov/pdf_docs/PNADJ990.pdf; see also *Global Climate Change Impacts*, *supra* note 2 at 12 ("Climate change will combine with pollution, population growth, overuse of resources, urbanization, and other social, economic, and environmental stresses to create larger impacts than from any of these factors alone.").

¹⁸⁹ Matt Simon, *The Terrifying Science Behind California's Massive Camp Fire*, *Wired* (Nov. 9, 2018), available at <https://www.wired.com/story/the-terrifying-science-behind-californias-massive-camp-fire/>.

¹⁹⁰ See *Global Climate Change Impacts*, *supra* note 2 at 20; see also EPA, *TS Endangerment Findings* 47-51; IPCC, *AR4* at 39.

¹⁹¹ *Global Climate Change Impacts*, *supra* note 2 at 107 ("By mid-century and beyond, however, today's emissions choices would generate starkly different climate futures: the lower the emissions, the smaller the climatic changes and resulting impacts.").

¹⁹² *Id.* at 12 ("Future climate change and its impacts depend on choices made today.").

¹⁹³ J. Abatzoglou et al., *supra* note 190, at 15-22.

¹⁹⁴ J. Hansen, *STORMS OF MY GRANDCHILDREN: THE TRUTH ABOUT THE COMING CLIMATE CATASTROPHE AND OUR LAST CHANCE TO SAVE HUMANITY* 166 (Bloomsbury USA eds. 2009) ("Also our best current estimate for the planet's mean energy imbalance over the past decade, thus averaged over the solar cycle, is about +0.5 watt per square meter. Reducing carbon dioxide to 350 ppm would increase emission to space 0.5 watt per square meter, restoring the planet's energy balance, to first approximation.").

altered Earth's energy balance¹⁹⁵ and are currently causing a planetary energy imbalance of approximately one-half watt¹⁹⁶. We would need to reduce atmospheric carbon dioxide concentrations by about 40 ppm, in order to increase Earth's heat radiation into space by one-half watt, if other long-lived gases stay the same as today.¹⁹⁷ We must reduce atmospheric carbon dioxide concentration to 350 ppm to avoid the threats contained herein.¹⁹⁸

55. In a statement by the 21 Academies of Sciences of British Commonwealth, those Academies stated:

“The world's climate is changing, and the impacts are already being observed. Changing agricultural conditions, ocean warming and acidification, rising sea levels, and increased frequency and intensity of many extreme weather events are impacting infrastructure, environmental assets and human health.

Impacts such as higher rainfall and increased plant growth will be beneficial in some cases.

However, others will be detrimental and felt more widely, changing ecosystems and weather patterns, and disrupting industries, economies, food supplies and livelihoods.

The consensus view of the global climate science community based on current evidence is that avoiding the worst impacts of climate change will require concerted global action to reduce atmospheric carbon.

A target to limit warming to below 2°C above pre-industrial levels was recognized by 160 nations that ratified the 2015 Paris Agreement on Climate Change; a bold and vital step towards addressing climate change.

Meeting this target will require achieving net-zero global greenhouse gas emissions in the second half of the Century followed by active decarbonisation of the atmosphere.

Our work towards this objective has only just begun.

Even if all countries meet their current commitments to greenhouse gas emission reductions, a global temperature rise of more than 3°C above pre-industrial levels is projected by 2100 according to current data.

¹⁹⁵ IPCC, *AR4* at 37 (“[T]he global average net effect of human activities since 1750 has been one of warming, with a radiative forcing of +1.6 [+0.6 to +2.4] W/m².”).

¹⁹⁶ D.M. Murphy et al., *An observationally based energy balance for the Earth since 1950* 114 J. Geophysical Res. Letters D17107 (2009).

¹⁹⁷ J. Hansen *supra* note 196 at 166; *see also* J. Hansen et al., *Target Atmospheric CO₂: Where Should Humanity Aim?*, 2 OPEN ATMOS. SCI. 217, 217-231 (2008).

¹⁹⁸ *Id.* at 217 (“If humanity wishes to preserve a planet similar to that on which civilization developed and to which life on Earth is adapted, Paleoclimate evidence and ongoing climate change suggest that CO₂ will need to be reduced from its current 385 ppm to at most 350 ppm.”).

This would lead to profound impacts affecting billions of people throughout the world.

This challenge needs to be addressed now, and the efforts required will bring enduring social, environmental and economic benefits and opportunities.”¹⁹⁹

56. The best available science also shows that to protect Earth’s natural systems, average global surface heating must not exceed 1° C this century.²⁰⁰ To prevent global heating greater than 1° C, concentrations of atmospheric CO₂ must decline to less than 350 ppm this century.²⁰¹ However, today’s atmospheric CO₂ levels are about 408 ppm²⁰² and are rising.
57. Atmospheric CO₂ levels are currently on a path to reach a climatic tipping point.²⁰³ Absent immediate action to reduce CO₂ emissions, atmospheric CO₂ may reach levels as high as about 1000 ppm²⁰⁴ and a temperature increase of up to 5° C by 2100.²⁰⁵ Life on Earth as we know it, is unsustainable at these levels.
58. The Board has the present ability to curtail the environmental harms detailed above. Atmospheric CO₂ concentrations will decrease if people stop (or greatly reduce) their burning of fossil fuels.²⁰⁶ The environmental harms and threat to human health and safety as described above can only be avoided if atmospheric CO₂ concentrations are immediately reduced. Any more delay risks irreversible and unacceptable consequences for youth and future generations.
59. Fossil fuel emissions must decrease rapidly if atmospheric CO₂ is to be returned to a safe level in this century.²⁰⁷ Improved forestry and agricultural practices can provide a net drawdown of atmospheric CO₂, primarily via reforestation of degraded lands that are of little or no value for agricultural purposes, returning us to 350 ppm somewhat sooner.²⁰⁸

¹⁹⁹ Commonwealth Acads. Of Sci. Consensus Statement on Climate Change (2018), *available at* <https://royalsociety.org/~media/news/2018/commonwealth-academies-consensus-statement-on-climate-change-12-march-2018.pdf>.

²⁰⁰ See J.E. Hansen & M. Sato, *supra* note 187; See also IPCC, *AR4* at 48 (“For increases in global average temperature exceeding 1.5 to 2.5°C and in concomitant atmospheric CO₂ concentrations, there are projected to be major changes in ecosystem structure and function, species’ ecological interactions and shifts in species’ geographical ranges, with predominantly negative consequences for biodiversity and ecosystem goods and services, e.g. water and food supply.”).

²⁰¹ See J. Hansen et al., *supra* note 196 at 217.

²⁰² *Atmospheric CO₂ for March 2011*, CO₂NOW, <http://co2now.org/> (last visited November 17, 2018).

²⁰³ J. Hansen, *supra* note 196 at 260.

²⁰⁴ IPCC, *AR4* at 66-7.

²⁰⁵ IPCC, *AR4* at 46.

²⁰⁶ HARVEY BLATT, *AMERICA’S ENVIRONMENTAL REPORT CARD – ARE WE MAKING THE GRADE?* xiii (MIT Press 2d ed. 2011) (“How can we stop this change in our climate? The answer is clear. Stop burning coal and oil, the sources of nearly all the carbon dioxide increase.”).

²⁰⁷ See J. Hansen et al., *supra* note 197 at 217 (discussing the need to reduce atmospheric carbon dioxide concentration to 350 ppm).

²⁰⁸ *Id.* at 227.

However, the potential of these measures is limited. Immediate and substantial reductions in carbon dioxide emissions are required in order to conserve Pennsylvania's public natural resources and to ensure that the youth and future generations of children inherit a planet that is habitable.²⁰⁹

60. Because most fossil fuel CO₂ emissions will remain in the surface carbon reservoirs for millennia, it is imperative that fossil fuel CO₂ emissions be rapidly terminated. Global CO₂ emissions must be reduced by 45% from 2010 levels by 2030 and must reach net neutrality by "around 2050."²¹⁰ The failure to act promptly will not only increase the costs of future reductions, it will have irreversible adverse effects on the youth and all future generations, as detailed above.
61. There are more than 1,000 legal and policy tools that can be used to achieve the deep decarbonization necessary to conserve Pennsylvania's public natural resources. An economy-wide GHG auction-cap-and-trade program with a cap declining to zero is a fundamental aspect of many of those. Without a uniform cap, intersectoral leakage that will undermine the effectiveness of other programs will be inevitable.²¹¹

B. Climate change is already occurring in the State of Pennsylvania and is projected to significantly impact the State in the future.

62. Since 1970, annual average temperatures in the Northeast region of the United States have increased by 2 degrees (Fahrenheit) in the summer, and by twice as much in the winter. Temperatures are expected to continue warming, with projected additional increases of approximately 3 degrees in the spring and 4 degrees in the summer, fall and winter months by the middle of the current century.²¹²
63. By the end of the current century, without significant world-wide decreases in carbon dioxide emissions, it is projected that summer temperatures in the northeastern U.S. could rise by as much as 6-14 degrees above historic averages, and as much as 8-12 degrees in the winter.²¹³
64. Temperatures in Harrisburg, Pennsylvania have increased 1.2 degrees in the last century,

²⁰⁹ *IPCC 2018 Report*

²¹⁰ *Id.* at 14, ;Hansen et al., at 211.

²¹¹ Michael B. Gerrard & John C. Dernbach eds., *Legal Pathways to Deep Decarbonization in the United States* (ELI 2018).

²¹² See U.S. Glob. Change Res. Program, *Global Climate Change Impacts on the United States: Regional Climate Impacts on the Northeast* (Washington, D.C., 2000); Northeast Climate Impacts Synthesis Team, Union of Concerned Scientists, *Confronting Climate Change in the United States: Northeast Science, Impacts and Solutions* (2007), available at https://www.ucsusa.org/sites/default/files/legacy/assets/documents/global_warming/pdf/confronting-climate-change-in-the-u-s-northeast.pdf.

²¹³ See Northeast Climate Impacts Synthesis Team, *supra* note 215; Union of Concerned Scientists, *Climate Change in Pennsylvania: Impacts and Solutions in the Keystone State* (2008), available at https://www.ucsusa.org/sites/default/files/legacy/assets/documents/global_warming/Climate-Change-in-Pennsylvania_Impacts-and-Solutions.pdf.

and precipitation has increased as much as 20% in many parts of the Commonwealth. In the next century, it is predicted that temperature at this location will increase a further 4 degrees, with seasonal increases in precipitation between 10-50%.²¹⁴

65. An increase in frequency of summer temperatures exceeding “extreme heat” (conditions of over 90 degrees) is expected as a result of continued climate change. By the year 2050, it is estimated that southern and eastern Pennsylvania will receive as many as 50 days per year exceeding 90 degrees, and as many as 70 days per year by the end of the century.²¹⁵
66. The number of days below 32 degrees (freezing) is expected to decrease by half in the next several decades, and disappear in all but the highest altitudes of Pennsylvania by the end of the current century.²¹⁶
67. It is predicted that warming will lead to an increased growing season in the northeast United States. This resulting lengthening will cause spring to begin three weeks earlier and winter to arrive three weeks later by the end of the current century.²¹⁷
68. Precipitation has increased by 10% in the last century, and further increases in precipitation by an additional 10-30% are expected within the next century.²¹⁸
69. As average winter temperatures increase, more precipitation will fall in the form of rain instead of snow, which will reduce snowpack and increase the likelihood of flooding during the winter and spring months.²¹⁹
70. In general, the amount of rainfall received during extremely wet days of the summer and fall months is expected to increase. It is also expected that an increase in the frequency and intensity of summer thunderstorms may occur.²²⁰
71. Increases in winter and spring precipitation (combined with the early melting of snowpack) are expected to shift the timing of peak surface water flows earlier in the spring and cause low-flows in the late summer and early fall. This is of special concern for the

²¹⁴ See EPA, Office of Pol’y, Plan., and Evaluation, *Climate Change and Pennsylvania*, Pub. No. 230-F-97-00811 (1997); Ctr. for Integrative Env’tl. Res., U. Md., *Economic Impacts of Climate Change on Pennsylvania* (2008) available at <http://40w95614sn5m1jd0sb353zli.wpengine.netdna-cdn.com/pittsburgh/files/2016/12/Pennsylvania-Economic-Impacts-of-Climate-Change-Full-Report.pdf>; Ctr. for Health and the Global Env’t., Harv. Med. Sch., *Climate Change and Health in Pennsylvania* (2011).

²¹⁵ See U.S. Glob. Change Res. Program, *supra* note 215; Northeast Climate Impacts Synthesis Team, *supra* note 215; EPA, *supra* note 217; Union of Concerned Scientists, *supra* note 215.

²¹⁶ Union of Concerned Scientists, *supra* note 215; Ctr. for Health and the Global Env’t., *supra* note 217.

²¹⁷ See U.S. Glob. Change Res. Program, *supra* note 215; Northeast Climate Impacts Synthesis Team, *supra* note 215.

²¹⁸ See U.S. Glob. Change Res. Program, *supra* note 215; Union of Concerned Scientists, *supra* note 215; Ctr. for Integrative Env’tl. Res., *supra* note 217.

²¹⁹ See U.S. Glob. Change Res. Program, *supra* note 215; Northeast Climate Impacts Synthesis Team, *supra* note 215; Ctr. for Integrative Env’tl. Res., *supra* note 217.

²²⁰ See EPA, *supra* note 217; Ctr. for Integrative Env’tl. Res., *supra* note 217.

tributaries to the Ohio River, where peak flows in the spring are expected to arrive several weeks earlier with a 4-degree increase in average annual temperature.²²¹

72. Climate change and winter warming are correlated with the earlier break-up of ice on lakes and rivers, which increases the influx of early spring waters into surface flows.²²²
73. Groundwater recharge could be adversely affected by declines in groundwater supply during the late summer and early fall. Precipitation events during these months are expected to be intense, but with greater length of time between events.²²³
74. Some of the most extreme flood events on record in the United States occurred in Pennsylvania. Increases in winter and spring runoff are expected to increase the incidence of flooding. Flood events may also increase the amount of pollution, erosion, and nutrient inputs moving from urban, agricultural, and industrial lands, into wetland ecosystems.²²⁴
75. Warmer ambient temperatures will warm surface and groundwater supplies, potentially compromising the quality of these resources.²²⁵
76. The increased frequency and intensity of flooding, drought, wildfires and invasion of non-native plant species are all anticipated to cause, and accelerate, a rapid transformation of Pennsylvania's current landscape and its ecosystems.²²⁶
77. A significant increase in summer drying is expected to change tree species composition in forested regions of the State and lead to an overall decrease in forested land. With warmer conditions, it is also expected that forested lands will shift northward, and grasslands and pasture will replace many forested areas. A 15-20% overall loss of forestlands is projected.²²⁷ This will have particularly adverse impacts on the Allegheny plateau, which currently produces 80% of the world's cherry supply, and which will be converted from
78. A change in climate has the ability to increase the occurrence of wildfires by increasing drought conditions, increasing insect pest and disease pressure with a longer growing season, and also cause tree-community shifts to accommodate more fire-prone species.

²²¹ See U.S. Glob. Change Res. Program, *supra* note 215; Northeast Climate Impacts Synthesis Team, *supra* note 215; Pa. Dep't. of Env'tl. Protection, *Pennsylvania Climate Adaptation Planning Report: Risks and Practical Recommendations* (2014) available at <http://www.depgreenport.state.pa.us/elibrary/GetDocument?docId=6636&DocName=2700-RE-DEP4303%20Combined.pdf>; EPA, *supra* note 217.

²²² See Northeast Climate Impacts Synthesis Team, *supra* note 215.

²²³ See Pa. Dep't. of Env'tl. Protection, *supra* note 224; EPA, *supra* note 217; Union of Concerned Scientists, *supra* note 215.

²²⁴ See U.S. Glob. Change Res. Program, *supra* note 215; Pa. Dep't. of Env'tl Protection, *supra* note 224; EPA, *supra* note 217; Union of Concerned Scientists, *supra* note 215; Ctr. for Integrative Env'tl. Res., *supra* note 217.

²²⁵ See Pa. Dep't. of Env'tl Protection, *supra* note 224.

²²⁶ See Pa. Dep't. of Env'tl Protection, *supra* note 224; EPA, *supra* note 217.

²²⁷ See Northeast Climate Impacts Synthesis Team, *supra* note 215; Pa. Dep't. of Env'tl Protection, *supra* note 224; EPA, *supra* note 217.

Increased wildfire events will increase the rate at which invasive plant species will be able to encroach on forested lands.²²⁸

79. Initial increases in forest growth may be observed in response to elevated levels of atmospheric CO₂, but within a short amount of time forests will begin to be adversely affected by high amounts of ground-level ozone. Ground-level ozone is damaging to trees and plants.²²⁹
80. With forest habitat losses, it is expected that the area's Bald Eagles will also face decline, as they migrate north with shifting climate patterns and resources. This event is predicted to coincide with a 25% overall decline in the biodiversity of bird species.²³⁰
81. The Pocono Mountains and the Two Mile Run wetlands in Pennsylvania are home to many rare and valuable species of trees and wildlife, as well as several acres of public wilderness. The flora and fauna could have difficulty adapting to climate change, and with only a few corridors allowing for migration, it is possible that there could be a significant reduction in biodiversity, causing local extinctions.²³¹
82. With lengthened growing seasons and warmer temperatures, the growth, reproductive capability, and geographical range of forest insect pests, such as the Hemlock Woolly Adelgid, will all be increased.²³²
83. The Erie National Wildlife Refuge provides aquatic resources vital to the preservation of approximately 70 species of fish and 25 species of freshwater mussels, many of which are already endangered. Further pressure to this ecosystem from climate change puts the aquatic wildlife at increased risk for extirpation.²³³
84. Brook trout and other coldwater fish are expected to decline in population due to warmer water temperatures in the rivers and lakes of Pennsylvania.²³⁴
85. Invasive plant and wildlife species better adapted to hotter and drier conditions (like those predicted by climate change models) have a higher chance of successfully overtaking native species (which are expected to experience decreases in geographic range due to stress from climate change). These stresses include seasonal drying of wetland habitat, increase in the frequency and severity of extreme weather events, and changes in atmospheric chemical composition.²³⁵

²²⁸ See *id.*

²²⁹ See EPA, *supra* note 217; Ctr. For Integrative Env'tl. Res., *supra* note 217; Ctr. For Health and the Global Env't., *supra* note 217.

²³⁰ See EPA, *supra* note 217.

²³¹ See Pa. Dep't. of Env'tl. Protection, *supra* note 224; EPA, *supra* note 217.

²³² See Northeast Climate Impacts Synthesis Team, *supra* note 215; Pa. Dep't. of Env'tl. Protection, *supra* note 224; Union of Concerned Scientists, *supra* note 215.

²³³ See EPA, *supra* note 217.

²³⁴ See Union of Concerned Scientists, *supra* note 215.

²³⁵ See Pa. Dep't. of Env'tl. Protection, *supra* note 224.

86. Heat waves are predicted to become much more common, which will pose increased risks to human health. An increase in average temperatures is expected to increase the number of heat-related illnesses and deaths, especially in cities. One study has predicted that the number of heat related deaths could increase by as much as 90% by the year 2050, increasing from 130 per year to over 240.²³⁶
87. Increase in flooding is of high concern, as the increase in the frequency and magnitude of flooding events will increase the incidence of related morbidity and mortality.²³⁷
88. Increased emissions combined with higher temperatures will cause an increase in levels of ground-level ozone. Ozone is a toxic component of smog with the potential to cause serious long-term and permanent damage to lung tissues with repeat exposure. A 4-degree increase in average temperature near Pittsburgh could increase concentration of ground-level ozone by 8%.²³⁸
89. Increases in temperature and humidity levels (thought to increase mold) can aggravate symptoms of respiratory allergies and asthma by stimulating plant pollen production. This problem will be further exacerbated by high availability of atmospheric CO₂, which is also predicted to stimulate plant growth early in the season.²³⁹
90. Due to “Island Heat” effects in urban areas, the effects of climate change will be much more extreme in cities, which may be as much as 7-10 degrees warmer than surrounding suburban areas.²⁴⁰
91. With milder, shorter winters and longer growing seasons, insects and other disease vectors are expected to increase. Risk of increase in West Nile Virus, malaria, and dengue transmission are all of special concern.²⁴¹
92. Many waterborne diseases (such as cholera) thrive in warm water conditions, and will present an increased risk to public health as temperatures and flood frequency both increase. There is also increased risk of sewage and septic system overflows during times of flooding.²⁴²

²³⁶ See U.S. Glob. Change Res. Program, *supra* note 215; Pa. Dep’t. of Env’tl. Protection, *supra* note 224; EPA, *supra* note 217; Union of Concerned Scientists, *supra* note 215; Ctr. For Health and the Global Env’t., *supra* note 217.

²³⁷ See Pa. Dep’t. of Env’tl. Protection, *supra* note 224; Ctr. For Integrative Env’tl. Res., *supra* note 217.

²³⁸ See U.S. Glob. Change Res. Program, *supra* note 215; EPA, *supra* note 217; Union of Concerned Scientists, *supra* note 215; Ctr. For Health and the Global Env’t., *supra* note 217.

²³⁹ See Pa. Dep’t. of Env’tl. Protection, *supra* note 224; EPA, *supra* note 217; Union of Concerned Scientists, *supra* note 215; Ctr. For Integrative Env’tl. Res., *supra* note 217; Ctr. For Health and the Global Env’t., *supra* note 217.

²⁴⁰ See U.S. Glob. Change Res. Program, *supra* note 215; Ctr. For Health and the Global Env’t., *supra* note 217.

²⁴¹ See Northeast Climate Impacts Synthesis Team, *supra* note 215; Pa. Dep’t. of Env’tl. Protection, *supra* note 224; EPA, *supra* note 217; Union of Concerned Scientists, *supra* note 215; Ctr. For Health and the Global Env’t., *supra* note 217.

²⁴² See U.S. Glob. Change Res. Program, *supra* note 215; Pa. Dep’t. of Env’tl. Protection, *supra* note 224; Union of Concerned Scientists, *supra* note 215; Ctr. For Integrative Env’tl. Res., *supra* note 217.

93. Warmer temperatures and increased seasonal precipitation could increase low-lying vegetation. This may lead to an increase in the population of ticks (and their rodent hosts) possibly carrying Lyme's and other tick-borne diseases.²⁴³
94. Changes to forest tree species include shifts from the current maple-dominated community composition to a community dominated by species better adapted to warmer climates, such as pines and oak. The additional risk from more frequent and severe forest fires will increase as the region experiences a hotter and drier climate. An overall loss of forested lands between 15-25% is projected by the end of the current century.²⁴⁴
95. Climate changes and a shift in plant and animal communities will lead to a loss of wildlife and habitat. This reality threatens the \$181 million annual industry that is received by the state in the form of hunting, fishing, and wildlife-viewing tourism.²⁴⁵
96. Agricultural crop yields are heavily reliant on temperature, moisture and day-to-day weather. They are also especially vulnerable to climate change. Major, regional shifts are expected to occur and it will be difficult to maintain current production rates, and quality, of food commodities. It is predicted that crop production will shift northward, which will make adaptation for farmers difficult.²⁴⁶
97. Initial increases in forest and crop growth may be observed in response to elevated levels of atmospheric CO₂, but within a short amount of time plants will begin to be adversely affected by high amounts of ground-level ozone. Ground-level ozone is damaging to trees and plants.²⁴⁷
98. Milder winters increase the likelihood that weeds (such as kudzu), pests, and pathogens, previously unable to survive New England's lower temperatures will be able to successfully invade. This will lead to increased costs for pest control and is likely to result in other costly damages.²⁴⁸
99. Overall crop yield for hay and corn is expected to decrease by as much as 39% by the year 2100, leading to large changes in the number of acres farmed and the subsequent production rates.²⁴⁹
100. As winters become milder, the number of freezing days available for certain crops (such as Concord grapes) will be more infrequent, with an estimated projection of harvests only every other year by 2050, and only 3 out of every 5 years by the end of the century. Apple

²⁴³ See Pa. Dep't of Env'tl. Protection, *supra* note 224; EPA, *supra* note 217; Ctr. For Health and the Global Env't, *supra* note 215.

²⁴⁴ See U.S. Glob. Change Res. Program, *supra* note 215; Northeast Climate Impacts Synthesis Team, *supra* note 215; EPA, *supra* note 217; Union of Concerned Scientists, *supra* note 215.

²⁴⁵ See Ctr. For Integrative Env'tl. Res., *supra* note 217.

²⁴⁶ See U.S. Glob. Change Res. Program, *supra* note 215.

²⁴⁷ See *id.*

²⁴⁸ See Northeast Climate Impacts Synthesis Team, *supra* note 215.

²⁴⁹ See EPA, *supra* note 217; Ctr. For Integrative Env'tl. Res., *supra* note 217.

orchards will also decline in yield with decreased winter freezing.²⁵⁰

101. Livestock production is expected to decline as the cost of feed and ventilation for indoor animals increases, and as decreased crop production is expected to limit forage resources. Increased temperatures may also cause direct stress to animals, causing decreases in growth and a projected 20% or more decrease in milk production.²⁵¹
102. Increasing precipitation received during downpours is expected to increase flooding, increase damages to infrastructure, and cause human health problems. This is especially so in cities, where heavy rains can overwhelm drainage systems and water treatment facilities, increasing the likelihood of waterborne diseases and therefore increasing associated health care costs.²⁵²
103. Increased flooding poses a serious risk to transportation agencies. More frequent and severe storm events coupled with flooding and structural failures resulting from high-heat conditions are expected to cause damage to roadways, bridges, railways, and other utility systems.²⁵³
104. Decreased water levels could cause several economic issues for all of the states bordering the Great Lakes. Low water levels lead to a decrease in depth of navigation channels and will cause damage to vessels and increase repair expenses, as well as require the rebuilding of docks and harbors. These transformations are expected to require between \$85 and \$142 million dollars annually.²⁵⁴
105. If the Commonwealth of Pennsylvania had begun reducing carbon emissions in 2005, it would have done its part by protecting a stable livable atmosphere by 2100 with only a 3% annual reduction in emissions. Because we have waited, reaching a safe atmosphere by the end of the century will require a 6% annual reduction in emissions beginning in 2013. If we delay until 2020 to reduce our greenhouse gas emissions we would have to reduce emissions by 15% every year until the end of this century to ensure a livable atmosphere for our generation and the next.²⁵⁵

²⁵⁰ See Union of Concerned Scientists, *supra* note 215.

²⁵¹ See U.S. Glob. Change Res. Program, *supra* note 215; Northeast Climate Impacts Synthesis Team, *supra* note 215; Union of Concerned Scientists, *supra* note 215; Ctr. For Health and the Global Env't., *supra* note 217.

²⁵² See U.S. Glob. Change Res. Program, *supra* note 215; Northeast Climate Impacts Synthesis Team, *supra* note 215; Pa. Dep't. of Env'tl. Protection, *supra* note 224; EPA, *supra* note 217; Ctr. for Integrative Env'tl. Res., *supra* note 217.

²⁵³ See U.S. Glob. Change Res. Program, *supra* note 215; Pa. Dep't. of Env'tl. Protection, *supra* note 224; Ctr. for Integrative Env'tl. Res., *supra* note 217.

²⁵⁴ See Ctr. for Integrative Env'tl. Res., *supra* note 217.

²⁵⁵ J. Hansen et al., *Assessing "Dangerous Climate Change": Required Reduction of Carbon Emissions to Protect Young People, Future Generations and Nature*, PLOS ONE, 8(12), (2013) <http://pubs.giss.nasa.gov/abs/ha08510t.html>. ("these scenarios assume a massive 100 GtC reforestation program").

III. Legal Basis for the Proposed Regulation.

The legal mandate imposed upon the Commonwealth by Article I, § 27 of the Pennsylvania Constitution to take meaningful action to limit GHG emissions and the legal authorization to adopt the proposed regulation under the Pennsylvania Air Pollution Control Act, 35 P.S. § 4001 *et seq.* is described in Robert B. McKinstry, Jr. & John C. Dernbach, *Applying the Pennsylvania Environmental Rights Amendment Meaningfully to Climate Disruption*, 10 Mich. J. Env't'l & Admin. L 102 (201_), attached hereto and incorporated herein as Exhibit C. Without limiting the foregoing, Petitioners allege:

1. Article I, § 27 of the Pennsylvania Constitution provides:

The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.

Its first clause creates individual rights to environmental attributes; the second creates additional rights by making Pennsylvania's public natural resources the property of all the people, including future generations; and the third makes the Commonwealth, and its constituent units, trustees for the environment.

2. The rights provided by the first and second clauses of the ERA represent fundamental, individual rights akin to free speech, freedom of religion and other rights enumerated in Article I of the Pennsylvania Constitution, and they should be interpreted as such. *Robinson Twp. v. Commonwealth*, 83 A.3d 901, 953-54, 976 (Pa. 2013) (plurality) ("*Robinson Township*"); *Pa. Env'tl. Def. Found. v. Commonwealth*, 161 A.3d 911, 930-31 (Pa. 2017) ("*PEDF*").
3. The first clause "affirms a limitation on the state's power to act contrary" to the people's right to "clean air, pure water, and the preservation of the natural, scenic, historic, and esthetic values of the environment." As a result, "laws of the Commonwealth that unreasonably impair the right are unconstitutional." *Robinson Township, supra*, 83 A.3d at 951; *PEDF*, 161 A.3d at 930-36.
4. "The drafters seemingly signaled an intent that the concept of public natural resources would be flexible to capture the full array of resources implicating the public interest, as these may be defined by statute or at common law." *Robinson Township, supra*, 83 A.3d at 955; *PEDF*, 161 A.3d at 931.
5. The public natural resources that are made the property of all the people by the second clause and the subject of the Commonwealth's duty as a trustee include "not only state-owned lands, waterways, and mineral reserves, but also resources that implicate the public interest, such as ambient air, surface and ground water, wild flora, and fauna (including fish) that are outside the scope of purely private property." *Robinson Township, supra*, 83 A.3d at 955; *PEDF*, 161 A.3d at 931. The constitutional rights

created by the second clause of the ERA include the right to enforce the duty of a trustee created by the third clause. *Robinson Township, supra*, 83 A.3d at 955-956; *PEDF*, 161 A.3d at 930-36.

6. The public trust provisions of the ERA are self-executing, as they create constitutional duties that bind all three branches of state government, and they can be applied and enforced by the judicial branch without further legislative action. *Robinson Township, supra*, 83 A.3d at 966-67; *PEDF*, 161 A.3d at 936-37.
7. The Commonwealth's duties as a trustee should be governed by the established law applicable to trusts and trustees, including the legal principles articulated in the Restatement of Trusts. *Robinson Township, supra*, 83 A.3d at 955-57; *PEDF*, 161 A.3d at 916-21, 28. These trustee duties include prudence ("exercise[ing] ordinary skill, prudence and caution in managing corpus of trust"), loyalty (administering the trust "solely in beneficiary's" interest), and impartiality ("treat[ing] all [beneficiaries] equitably in light of the purposes of the trust"). *Robinson Township, supra*, 83 A.3d at 957, 959; *PEDF*, 161 A.3d at 930-37.
8. Although the climate is not expressly protected under the ERA, the ERA's language and legislative history, as well as the reasoning of both *Robinson Township* and *PEDF*, compel the conclusion that a climate free of human disruption is protected by Article I, § 27.
9. The right to a natural climate unaffected by climate disruption is included within the ERA's first clause, which protects the people of Pennsylvania's right to "clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment" because greenhouse gas pollution and the climate disruption that it will cause will both adversely affect air and water quality.
10. Levels of carbon dioxide in the atmosphere causing climate disruption also violates the people's right to clean air, because pollution is a relative concept. Levels of naturally occurring substances that disrupt the natural functioning of natural ecosystems constitutes pollution. The ERA's right to "clean air," as applied to carbon dioxide, means levels necessary to support plant life and ecosystems, among other things, but not so high as to disrupt ecosystems, as will occur in climate disruption. Similarly, "pure water" means water with levels of carbon dioxide that support the normal functioning of aquatic ecosystems, and that conserves and maintains public natural resources, but not so high as to acidify the water and disrupt those natural systems
11. A stable climate not disrupted by excessive concentrations of GHGs also provides critical natural and historic values of the environment.
12. The right to a natural climate unaffected by human-caused climate disruption is included within the ERA second clause's protection of the public's right to the conservation and maintenance of public natural resources. The *Robinson Township* plurality emphasized

that the concept of public natural resources encompassed a wide range of values of the natural environment:

At present, the concept of public natural resources includes not only state-owned lands, waterways, and mineral reserves, but also resources that implicate the public interest, such as ambient air, surface and ground water, wild flora, and fauna (including fish) that are outside the scope of purely private property.

Robinson Twp. v. Commonwealth, 83 A.3d 901, 955 (Pa. 2013) (plurality); *accord Pa. Emtl. Def. Found. v. Commonwealth*, 161 A.3d 911, 931 (Pa. 2017).

13. Catastrophic climate disruption would radically impair and possibly eliminate the “wild flora, and fauna (including fish),” public forests and their ecosystems, and game and wildlife that the plurality in *Robinson Township* expressly recognized as falling within the public trust obligations of the second and third clauses of Article I, § 27. *Robinson Twp.*, 83 A.3d at 955.
14. A stable climate, not disrupted by the types of changes caused by human emissions of GHGs in the atmosphere, should be understood as a public natural resource to which the people have a right and which the Commonwealth has a trustee’s duty to conserve and maintain. The climate is not a private resource. Rather, the climate represents the seasonal average ranges of temperature, precipitation and other atmospheric conditions in a particular area over a long period of time. Climate determines the nature of wild and other naturally occurring vegetation, fish and other wildlife; the amount and quality of ground and surface water; the characteristics of soils; the flow and extent of streams, rivers and wetlands; air quality; and most other characteristics of naturally occurring ecosystems and natural communities.
15. The public trust rights under Article I, § 27 inhere in “all the people including generations yet to come.” Thus, the virtual certainty that effects of climate disruption will be inequitably distributed and will have greater impacts on generations yet to come implicates Article I, § 27 even if only some people are adversely affected.
16. The Commonwealth has the following overall duties under Article I, § 27 concerning climate disruption. (1) Under the first clause, the Commonwealth may not act contrary to the people’s right to a natural climate unaffected by climate disruption; “laws of the Commonwealth that unreasonably impair the right are unconstitutional.” Under the second and third clauses of the public trust provisions of Article I, § 27, the Commonwealth has two duties. One is “to prohibit the degradation, diminution, and depletion” of a natural climate unaffected by human-caused climate disruption, whether harm to the climate results “from direct state action or from the actions of private parties.” The other is “to act affirmatively via legislative action” to conserve the natural climate and prevent undue disruption. A third duty, which stems from the duty of private trust law duty of prudence, is that the Commonwealth must analyze the effect of its decisions on the public’s right to be protected against climate change prior to making them.

17. A judicially ascertainable standard for determining the emissions reductions required to conserve and maintain the climate is provided by an international treaty ratified by the United States, the United Nations Framework Convention on Climate Change (UNFCCC), 1771 U.N.T.S. 107, http://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf, the Paris Agreement, Dec. 12, 2015, http://unfccc.int/paris_agreement/items/9485.php, adopted pursuant to that Convention, and the body of internationally-accepted scientific evidence endorsed by the nations of the world pursuant to the UNFCCC and the Paris Agreement. Pennsylvania's share of the reductions is governed by the federal Clean Air Act.
18. The objective of the UNFCCC is the "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system." UNFCCC, art. 2. Reflecting the evolving scientific consensus on the temperature rise at which serious climate disruption will occur, the Paris Agreement interprets the objective to the UNFCCC to hold "the increase in the global average temperature to well below 2°C above pre-industrial levels" and to "to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change." *Paris Agreement*, art. 2, § 1.
19. Also reflecting the scientific consensus of the nations of the world, the Paris Agreement further defines the emissions reductions required to keep temperatures below those thresholds by requiring that the Parties "achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century." *Paris Agreement*, art. 4 § 1.
20. If the entire world needs to reach a point where emissions of GHGs are no greater than their removal by GHG sinks by the second half of this century, Pennsylvania will also need to achieve that balance by that time. Therefore, at a minimum, Pennsylvania must develop an emissions reduction trajectory that reduces net emissions to zero, meaning the elimination of all GHG emissions other than those geologically or biologically returned to sinks (*i.e.* sequestered) by the second half of the 21st century.
21. This is consistent with the UNFCCC requirement that the developed nations take the lead in reducing emissions, enacting policies to limit emissions, and enhance carbon sinks. UNFCCC, art. 3, § 1; art. 3 § 3; art. 4, § 2(a); *Paris Agreement*, art. 4, § 4. These policies are to be precautionary, comprehensive and "cost-effective so as to ensure global benefits at the lowest possible cost . . . and comprise all economic sectors." UNFCCC, art. 3 §§ 2, 3; art. 4, § 2.
22. The proposed regulation will implement the goals of the UNFCCC and the Paris Agreement consistent with the above referenced principles.
23. The provisions of the federal Clean Air Act governing the obligations of states support the proposition that Pennsylvania should consider these treaty obligations in construing its obligations as a trustee under Article I, § 27. Section 115 of the Clean Air Act is triggered

whenever the EPA finds air pollution originating within a state “cause[s] or contribute[s] to air pollution which may reasonably be anticipated to endanger public health or welfare in a foreign country.” 42 U.S.C. § 7415 (a). When that happens, the EPA must require the state to submit an amendment to the “good neighbor” provision of its state implementation plan, *id.*, § 7410(a)(2)(H)(ii), that will “prevent or eliminate the endangerment.” *Id.* §7415(b). These requirements exist because EPA has found that emissions of GHGs within the United States endanger health and the environment in other nations and virtually all other nations of the world are parties to the UNFCCC and the Paris Agreement, which provides the United States reciprocal rights with respect to the prevention and control of greenhouse gases.²⁵⁶

24. A regulatory program that is designed to take all measures reasonably necessary to conserve the corpus of the environmental trust resource for the benefit of the trust’s beneficiaries will most closely hew to the intent and text of the ERA as interpreted in *PEDF* and the *Robinson Township* plurality. That program should therefore employ all measures reasonably necessary to conserve a stable climate and the public environmental resources it supports. This can be best accomplished by putting a price on emissions of GHGs and by recovering the value of that emissions price as income for the beneficiaries of the trust. The proposed regulation will satisfy these Constitutional requirements.
25. The Board is required to adopt the proposed regulation in substantially the form that has been proposed pursuant to its duty as a trustee under Article I, §27 of the Pennsylvania Constitution under the Supreme Court’s reasoning in *PEDF* and the *Robinson Township* plurality. First, allowing emissions to continue unabated will increase the damage to the corpus of the trust. If a price is put on the emissions consistent with the social cost of carbon, or emitters are otherwise required to implement all emissions reductions up to that cost, the damage to the corpus of the trust will be avoided consistent with the duty to “conserve and maintain” the trust corpus. Second, the social cost of carbon provides a way of measuring the cost of damage from climate change, including damage to public natural resources, through state actions allowing unregulated emissions of GHGs. Third, the Commonwealth’s duty to “act affirmatively via legislative action to protect the environment,” suggests that the state could use a mechanism like that employed in the

256. *Her Majesty the Queen in Right of Ontario v. Env’tl. Prot. Agency*, 912 F.2d 1525, 1528 (D.C. Cir. 1990); “Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act; Final Rule,” 74 Fed. Reg. 66,496, 66,514 (Dec. 15, 2009); *Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, 74 Fed. Reg. 18886, 18903 (April 24, 2009); see *Status of Ratification of the Convention*, UNITED NATIONS, <https://unfccc.int/process/the-convention/what-is-the-convention/status-of-ratification-of-the-convention> (196 nations and 1 regional economic integration organization are Parties) (last visited April 17, 2018); *UNFCCC Status as of 17-04-2018*, UNITED NATIONS TREATY COLLECTION, https://treaties.un.org/Pages/ViewDetailsIII.aspx?src=IND&mtdsg_no=XXVII-7&chapter=27&Temp=mtdsg3&clang=en (last visited July 9, 2018); *Paris Agreement – Status of Ratification*, UNITED NATIONS, <https://unfccc.int/process/the-paris-agreement/status-of-ratification> (175 Parties have ratified of 197 Parties to the Convention) (last visited Apr. 17, 2018); *Paris Agreement Status as at 17-04-2018*, UNITED NATIONS TREATY COLLECTION, https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7-d&chapter=27&clang=en (last visited July 4, 2018). See *The Paris Agreement* art. 2 §1 (a), art. 3, art. 4 §1; see generally Michael Burger et. al., *Legal Pathways to Reducing Greenhouse Gas Emissions Under Section 115 of the Clean Air Act*, UCLA School of Law, Public Law Research Paper No. 16-11 (Jan. 2016), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2742366.

proposed regulation to constrain the emissions of GHGs that harm public natural resources. This result seems compelled by the text of the ERA and the trustee's duty of prudence as found by the Court in *PEDF*. See *PEDF*, 161 A.3d at 932; see also *id.* at 938 (invalidating transfer of funds because it violated the duty of prudence and the duty to use trust assets in accordance with the trust purposes).

26. The proposed regulations will satisfy the requirements Article I, § 27 and satisfy the following prerequisites:
- The proposed regulation will result in the reduction of emissions sufficient to achieve net carbon neutrality by the second half of the century, if not earlier.
 - The proposed regulation will either impose a cost on emissions consistent with the social cost of carbon or require all emissions reduction measures less than that cost. In so doing, the proposed regulation starts with a lower cost that grows steadily over time, creating consistency with other programs, generating a predictable framework for investment decisions and facilitating a transition from free emissions to emissions that incur a cost.
 - The proposed regulation structure will generate income for the beneficiaries of the trust without impairing the trust's principal.
 - The proposed regulation will cause actual emissions reductions and not result in the transfer of emissions to other unregulated economic sectors, states or nations through the process of leakage.
 - The proposed regulation is authorized by existing law and can be implemented administratively without further legislation.
27. The APCA provides DEP with the authority to regulate air pollution in accordance with the federal Clean Air Act. The APCA states that DEP "shall have the power and its duty shall be to [i]mplement the provisions of the Clean Air Act in the Commonwealth." 35 Pa. Cons. Stat. § 4004(1). The Act further provides that the EQB "[s]hall have the power and its duty shall be to [a]dopt rules and regulations to implement the provisions of the Clean Air Act," which "shall be consistent with the requirements of the Clean Air Act and the regulations adopted thereunder." 35 Pa. Cons. Stat. § 4005(a)(8).
28. GHGs are now clearly pollutants regulated under the Clean Air Act. *Coal. for Responsible Regulation, Inc. v. U.S. E envtl. Prot. Agency*, 684 F.3d 102 (D.C. Cir. 2012) *aff'd in part and rev'd in part on other grounds sub nom*; *Util. Air Regulatory Grp. v. E envtl. Prot. Agency*, 134 S. Ct. 2427 (2014); see also *Funk v. Wolf*, 144 A.3d 228, 250, n.17 (Pa. Commw. Ct. 2016), *aff'd without opinion*, 158 A.3d 642 (Pa. 2017). DEP must regulate those gases, at least to the extent required under the federal Clean Air Act. This includes the requirements under the Clean Air Act's good neighbor provision.
29. The EQB's duty to adopt regulations limiting GHG emissions goes beyond the minimum that may be required under the Clean Air Act, even without considering the

Commonwealth's duty as a trustee under the ERA. The APCA provides the EQB with the authority and the mandatory duty to:

Adopt rules and regulations, for the prevention, control, reduction and abatement of air pollution, applicable throughout the Commonwealth or to such parts or regions or subregions thereof specifically designated in such regulation which shall be applicable to all air contamination sources regardless of whether such source is required to be under permit by this act.

35 Pa. Cons. Stat. § 4005(a)(1).

30. The APCA defines "air contaminant" to include a "gas," which therefore includes greenhouse gases. *Id.* at § 4003 (definition of "air contaminant"). The statute defines "air contamination" as the "presence in the outdoor atmosphere of an air contaminant which contributes to any condition of air pollution". *Id.* The EPA endangerment finding under the Clean Air Act, the 2015 DEP report under the Climate Change Act, and a wide variety of other scientific studies support the conclusion that GHGs constitute air pollution as defined in the Pennsylvania Air Pollution Control Act. *See Massachusetts v. Env'tl. Prot. Agency*, 549 U.S. 497, 528-530 (2007) (analysis of why greenhouse gases are air pollutants under the Clean Air Act).
31. DEP has authority under existing law to regulate GHGs through adoption of regulations by EQB, even in the absence of regulations under the federal Clean Air Act. The Pennsylvania Climate Change Act requires not only a report on greenhouse gas impacts every three years but also requires DEP to develop a climate change action plan for submission to the Governor identifying "cost-effective strategies for reducing and offsetting GHG emissions." 71 Pa. Cons. Stat. §§ 1361.3, 1361.7 (2018). This provision would not make sense unless the APCA allowed regulation of GHGs. The fact that the plan is submitted to the administrative branch rather than the legislative branch suggests that the General Assembly contemplated that the administrative branch could implement those strategies through rule-making and other actions already authorized by the General Assembly. Both the APCA and Article I, § 27 authorize the Department to adopt regulations more stringent than federal regulations and require more stringent regulations where necessary to protect health and conserve the Commonwealth's public natural resources. *Commonwealth, Dep't of Env'tl Res. v. Pa. Power Co.*, 384 A.2d 273, 284-85 (Pa. Commw. Ct. 1978); *Eagle Env'tl. II, L.P. v. Commonwealth, Dep't of Env'tl. Prot.*, 144 A.3d 228 (2005).
32. The APCA also provides sufficient authority to support the proposed regulation in that it authorizes the regulation of emissions directly and going "upstream" and regulating fossil fuels where it is impractical to regulate the emissions source. The APCA authorizes and gives the EQB the power and the duty to adopt regulations applicable to "all air contamination sources regardless of whether such source is required to be under permit by this act" and states that these regulations may "prohibit or regulate the combustion of certain fuels." 35 Pa. Cons. Stat. § 4005(a)(1) (1992).
33. The Pennsylvania Uniform Interstate Air Pollution Agreements Act authorizes participation in interstate trading programs, encouraging DEP to coordinate and

cooperate with “State and local authorities of other states affected by air sheds or regional air masses lying partly within another state or states, or moving between or among this State and another state or states. 35 Pa. Cons. Stat. §§ 4101-4106. This authorizes the provision for interstate trading in the proposed regulation, as necessary to prevent leakage.

34. Under the *PEDF* decision, an auction with a reserve price, as provided in the proposed regulation, is constitutionally required to allow the beneficiaries of the trust to benefit from the program. Allowances may be considered to represent ecosystem services in that they represent the limited remaining ability of the atmosphere to absorb additional GHG pollution without disruption. Because the revenues would derive from efforts to preserve the environmental trust, these revenues could be considered the result of the sale of renewable ecosystem services, similar to revenue from timber sales from sustainable management of state forest land.

III. The Impacts and Parties Affected by the Proposed Regulation.

The proposed regulation will have an impact on all sectors of Pennsylvania's economy, although the impact will vary among businesses and individuals, with some benefitting and some suffering adverse impacts. The proposed regulation is likely to have a significant positive impact on the environment as well as the overall economic and fiscal well-being of the Commonwealth. By reducing GHG emissions from a jurisdiction producing almost one percent of global emissions on the schedule necessary to limit increases in temperature to between 1.5 and 2 degrees C, there is no doubt that the proposed regulation will have a significant positive effect on the natural environment and other trust resources under Article I, § 27 of the Pennsylvania Constitution. It is also likely to have a net positive effect on the Commonwealth's economy and its fiscal health.

Experience with other auction-cap-and-trade programs has confirmed predictions in the economic literature that imposing charges on pollution emissions and returning them to the economy will have an economic stimulatory effect, producing a "double dividend" of environmental improvement and economic growth.²⁵⁷ Thus, both modeling and analysis of the impact of the auction-cap-and-trade program implemented by the states in the Regional Greenhouse Gas Initiative ("RGGI") have shown that that program has increased the gross state product ("GSP") and created net job growth.²⁵⁸ A 2017 study concluded that the benefits arising from air quality improvements associated with emissions reductions caused by the RGGI

²⁵⁷ Lawrence H. Goulder, *Environmental Taxation and the "Double Dividend:" A Reader's Guide* (Nat'l Bureau of Econ. Research, Working Paper No. 4896, 1994); Francesco Bosello et al., *The Double Dividend Issue: Modeling Strategies and Empirical Findings*, 6 *Env't & Dev. Econ.* 9 (2001); Lars G. Hansen, *Is There a Weak Double Dividend? Some Implications of Regulatory Capture and Revenue Rules for Environmental Taxes*, AKF Forlaget (Aug. 1999); Ian W.H. Parry et. al., *When Can Carbon Abate Policies Increase Welfare? The Fundamental Role of Distorted Factor Markets* (Res; for the Future 1998); see, Robert B. McKinstry, Jr., Adam Rose & Coreen Ripp, *Incentive-Based Approaches to Greenhouse Gas Mitigation in Pennsylvania: Protecting the Environment and Promoting Fiscal Reform*, 14 *Widener L. J.* 205, 220 (2003).

²⁵⁸ Paul J. Hibbard, Susan F. Tierney, Pavel G. Darling & Sarah Cullinan, *The Economic Impacts of the Regional Greenhouse Gas Initiative on Nine Northeast and Mid-Atlantic States: Review of RGGI's Third Three-Year Compliance Period (2015-2017)* (April 17, 2018) ("RGGI 2018 Report"), http://www.analysisgroup.com/uploadedfiles/content/insights/publishing/analysis_group_rggi_report_april_2018.pdf; ICF, *RGGI Program Review: REM Modeling Results* (Dec. 2017), https://www.rggi.org/sites/default/files/Uploads/Program-Review/12-19-2017/REMI_2017_12_19.pdf; Paul J. Hibbard, Susan F. Tierney, Andrea M. Okie, and Pavel G. Darling, *The Economic Impacts of the Regional Greenhouse Gas Initiative on Ten Northeast and Mid-Atlantic States* (November 2011), http://www.analysisgroup.com/uploadedfiles/content/insights/publishing/economic_impact_rggi_report.pdf; Paul J. Hibbard, Andrea M. Okie, Susan F. Tierney, & Pavel G. Darling, *The Economic Impacts of the Regional Greenhouse Gas Initiative on Nine Northeast and Mid-Atlantic States* (July 2015) http://www.analysisgroup.com/uploadedfiles/content/insights/publishing/analysis_group_rggi_report_july_2015.pdf. At least one study suggests that the direct investment of revenues in energy efficiency produces the highest economic growth. Environment Northeast, *Economy-Wide Benefits of RGGI: Economic Growth through Energy Efficiency*, (March 2011). However, any use of revenues that will reduce taxes on productive activity or increase investment will generate economic and job growth.

program during its first six years of operations equaled \$5.7 billion.²⁵⁹ The Analysis Group has conducted studies and prepared reports on the economic impacts of the RGGI Program after each three year compliance period. The most recent report reached conclusions similar to those in the earlier report, concluding:

Over the last three years (2015-2017), the RGGI program led to \$1.4 billion (net present value (“NPV”)) of net positive economic activity in the nine-state region. Each RGGI state’s electricity consumers and local economy also experienced net benefits from the RGGI program. When spread across the region’s population, these economic impacts amount to nearly \$34 in net positive value added per capita.²⁶⁰

Although a similar level of analysis has not been applied to the California economy-wide auction-cap-and-trade program,²⁶¹ the initial results suggest that

the state’s climate policy is succeeding — the most recent data show California is just 3 percent above its 2020 goal of reducing emissions to 1990 levels as required by AB 32. Meeting California’s 2020 greenhouse gas emissions goal is turning out to be easier and cheaper than expected.

As California has driven emissions down, its economy has taken off: State job growth has outpaced the rest of the nation by 50 percent (PDF), showing what decoupled carbon emissions and economic growth look like.²⁶²

The proposed regulation will generate revenue from the sale of natural resource attributes that will solve Pennsylvania’s chronic budget deficits for decades to come and eliminate the continuing practices that the Pennsylvania Supreme Court found unconstitutional in *PEDF v. Commonwealth*, 161 A.3d 911 (Pa. 2017). The most recent report of the Pennsylvania Independent Fiscal Office has concluded that there is a “structural imbalance” in the

²⁵⁹ Abt Associates, *Analysis of the Public Health Impacts of the Regional Greenhouse Gas Initiative, 2009-2014*, (January 2017), <http://abtassociates.com/AbtAssociates/files/7e/7e38e795-aba2-4756-ab72-ba7ae7f53f16.pdf>; cited in, Jonathan L. Ramseur, *The Regional Greenhouse Gas Initiative: Lessons Learned and Issues for Congress* (Congressional Research Service May 16,2017) <https://fas.org/sgp/crs/misc/R41836.pdf>

²⁶⁰ Hibbard et al., *RGGI 1018 Report* at 4. The authors, again, attribute this to reinvestment.

²⁶¹ The California Air Resources Board did conduct economic modeling and determined that the current auction cap-and-trade with supplemental mechanisms was the most cost-effective means to achieve the additional reductions necessary to achieve the 2030 goal of reducing 1990 emissions by 40%, with modeling indicating that these additional measures would reduce projected growth in state GDP by a modest 0.4 to 0.6 percent. This did not model the impacts of the overall program, which has already achieved the 2020 goal of reducing 1990 emissions by 20%. The analysis also did not include a cost benefit analysis calculating the very significant health improvements arising from the air quality improvements. Because most health costs are imposed on businesses, reduced health costs should improve economic health as well as the health of the Commonwealth’s residents.

²⁶² Chris Busch, *California cap-and-trade: A success in disguise* (Aug. 10, 2016), <https://www.greenbiz.com/article/california-cap-and-trade-success-disguise>; See also Ashley Lawson, Addressing California cap and trade concerns (April 12, 2017), <https://www.c2es.org/2017/04/addressing-california-cap-and-trade-concerns/>

Pennsylvania budget.²⁶³ That report predicts a budget deficit of \$1.709 billion for fiscal year 2018-2019, with the deficit ranging from a low of 1.446 billion to 1.750 billion over the next four fiscal years.²⁶⁴ The revenue that this program will generate will alleviate and likely eliminate that structural deficit, removing the need to increase taxes on productive activities. Application of the 2020 reserve price (\$ 147.211)²⁶⁵ and budget (91% of 2016 emissions) using the 2016 carbon dioxide emissions from the U.S. Energy Information System²⁶⁶ would produce a maximum and inflated revenue figure of \$1.978 billion. This figure is inflated because it includes emissions from industrial sources likely to qualify for direct allocations, which emitted 45.6 million metric tons in 2016, according to EIA. If these are excluded, revenues would equal \$1.563 billion, assuming all allowances are sold and sold at the reserve price. A portion of those revenues would likely go to Philadelphia and Allegheny Counties, who are likely to expand their current air programs to include GHGs, thereby capturing auction revenues attributable to sources in those counties. Nevertheless, the revenues will likely greatly alleviate the budget deficit and, given the fact that the reserve price will increase by 10% plus inflation annually, it has the potential to eliminate the deficit in future fiscal years.

The precise macroeconomic impacts and the impacts by sector will depend upon how the General Assembly, Philadelphia and Allegheny County allocate revenues and direct allocations. Any action that eliminates the need to raise additional taxes on productive activity to balance the budget will have a stimulatory effect on the Commonwealth's economy. Measures taken by the RGGI states and California such as use of revenues to offset low income consumer effects and investment in energy efficiency and alternative energy have the potential to magnify the positive economic effects. Impacts will also differ among and within economic sectors.

In the electricity generation sector, where there will be no direct allocations, companies with low emission fleets will benefit and those with higher emission fleets will face increased costs or decreased profits. The imposition of a cost on carbon will particularly benefit renewable and nuclear generation facilities. It is likely to prevent the premature closure of all well-run existing nuclear facilities other than the most financially stressed and prevent job losses at those facilities. It will likely generate new investment in renewable generation and energy efficiency, and possibly generate new investment in increased nuclear generation capacity through uprates of existing units. A recent report by the Department set forth the Commonwealth's Solar Future Plan and established a goal of increasing in-state solar generation so to provide 10 percent of in-

²⁶³ Independent Fiscal Office, Economic & Budget Outlook: Fiscal Years 2018 -19 to 2023 -24 (November 2018) at 1, available at [file:///C:/Users/rober/Downloads/Five_Year_Outlook_2018%20\(1\).pdf](file:///C:/Users/rober/Downloads/Five_Year_Outlook_2018%20(1).pdf).

²⁶⁴ *Id.*

²⁶⁵ The Pennsylvania reserve price is based on the higher of a \$10 (in 2020 and increased by the rate of inflation plus 10%) and the highest reserve price in any program to which the Pennsylvania program is linked, which is currently likely to be California.

²⁶⁶ EIA reported carbon dioxide emissions for 2016 217.4 million metric tons, <https://www.eia.gov/environment/emissions/state/excel/pennsylvania.xlsx>, so that the budget for 2020 (0.91) would be 197.8 million metric tons. EIA reported Pennsylvania's 2015 carbon dioxide emissions to be 233 million metric tons, making it the third largest emitter after Texas (626) and California (364). <https://www.eia.gov/state/rankings/?sid=PA#series/226> . This would include all sources but would exclude other GHGs.

state electricity consumption by 2030.²⁶⁷ That *Solar Future Plan* report concluded that a suite of strategies would be necessary to accomplish this goal, one of which is to adopt “a carbon pricing program and invest the proceeds in renewable energy and energy efficiency measures.”²⁶⁸ The proposed regulation would establish carbon pricing and some mechanisms, such as the Philadelphia Energy Authority,²⁶⁹ are already in place to reinvest proceeds. The *Solar Future Plan* report further found that this investment in solar generation would produce benefits in public health, economic growth, job opportunities and cleaner air.²⁷⁰ These conclusions apply equally to other types of renewable generation, improvement in nuclear facilities and energy efficiency, where the proposed regulation will equally encourage investment and the same benefits.

The program that will be established by the proposed regulation will also benefit efficient combined cycle natural gas plants, while, in general, having an adverse impact on coal-fired facilities and older, inefficient combustion turbines and reciprocating internal combustion engine generation units. Even the impacts on coal-fired facilities may depend upon implementation. For example, the feasibility of add-on carbon capture and sequestration at a 90% capture rate has been proven at two coal-fired facilities – the Boundary Dam facility in Saskatchewan²⁷¹ and the NRG Petra Nova facility in Texas;²⁷² and the owners expect a lower capital cost expenditure for future facilities. With a sufficient price on emissions,²⁷³ the use of such technology, particularly if combined with partial use of biomass-based fuels, could sustain the life of existing coal-fired facilities. In addition, the proposed regulation will provide offset credits for remediation of coal waste piles, which will assist existing waste coal-fired generation units and assist the Commonwealth’s continuing efforts to address abandoned minelands.

The availability of direct allocations for industrial facilities subject to interstate or foreign competition that might result in leakage will minimize or eliminate the potential for adverse impacts on most industrial facilities. With direct allocations, companies that reduce GHG emissions through efficiency, electrification or product or fuel substitution may generate additional revenue through sales of excess allowances. Direct allocations are limited to the

²⁶⁷ David Althoff Jr., Robert Altenburg et al., *Pennsylvania’s Solar Future Plan: Strategies to increase electricity generation from in-state solar energy* (November 2018) (“*Solar Future Plan*”) at x, available at <http://www.depgreenport.state.pa.us/elibrary/GetDocument?docId=59861&DocName=PENNSYLVANIA%26%2339%3bS%20SOLAR%20FUTURE%20PLAN.PDF%20%20%3Cspan%20style%3D%22color%3b%22%3E%28NEW%29%3C/span%3E>.

²⁶⁸ *Id.* at 76-78.

²⁶⁹ <http://www.philaenergy.org/>.

²⁷⁰ *Id.* at x.

²⁷¹ *Brief of Amicus Curiae Saskatchewan Power Corporation, Operator of Boundary Dam Carbon Capture and Storage (CCS) Facility, In Support of Respondents* (Dec. 21, 2016), http://blogs.edf.org/climate411/files/2016/12/2016.12.21-SaskPower-Amicus-Brief-for-EPA.pdf?_ga=2.99642398.1483276282.1538095651-822301884.1538095651.

²⁷² EIA, Petra Nova is one of two carbon capture and sequestration power plants in the world (Oct. 31, 2017), http://blogs.edf.org/climate411/files/2016/12/2016.12.21-SaskPower-Amicus-Brief-for-EPA.pdf?_ga=2.99642398.1483276282.1538095651-822301884.1538095651

²⁷³ The cost per ton of removal is not public knowledge and the present Administration has failed to gather that information, despite an obligation to do so under section 111 of the Clean Air Act.

allocation rate that would be awarded to the best performing facility in an industrial category or subcategory, so that those that have acted early to reduce emissions will not be adversely affected by awarding excess allowances to more tardy competitors. If a higher emitting tardy competitor requires additional allowances per unit of production to prevent leakage, those who have acted early to reduce emissions are permitted a direct allocation based on the same emission rate as the tardy company, creating a value proposition for the early reducer. Although direct allocations must be reduced at a rate of five percent of the original allocation per year, this will provide a sufficient and sufficiently early market signal to prevent most adverse results.

The requirement for the surrender of allowances for fossil fuel distributors and electricity generation will increase prices for consumers. However, the increases will likely be far lower than normal price fluctuations. Although some of any potential price increase will be borne by fuel suppliers, in 2020, the maximum likely impact would be 8 cents per gallon of gasoline and 5.3 cents per mcf of natural gas or 0.0053 cents per cubic foot.²⁷⁴ The spot price of one mcf of natural gas has fallen by more than two orders of magnitude times the maximum potential increase in natural gas prices over the last decade.²⁷⁵ The maximum impact on the price of gasoline is about 5% of the variation of average *annual* gasoline prices over the last decade. And a far smaller percentage of the day to day variations.²⁷⁶ The RGGI states and California have reduced these impacts by investing proceeds in consumer relief and funding for consumer energy efficiency investments through programs administered by Efficiency Vermont and the Delaware Sustainable Energy Utility (“SEU”). The Pennsylvania General Assembly could act to provide similar consumer relief and savings. We expect that Philadelphia and Allegheny Counties, which have approved air pollution control programs, will take advantage of the opportunity to operate their own GHG auction-cap-and-trade programs and receive income from allowance sales. These jurisdictions include the largest number of low-income residents in the Commonwealth and we expect that they will provide for consumer relief through energy efficiency and renewable energy investments similar to the RGGI jurisdictions and California. Philadelphia has already established an Energy Authority modeled on the existing SEUs. The alleviation of chronic budget shortages in the Pennsylvania General Fund should also free up funds for investment in education and public infrastructure that should benefit all consumers in the Commonwealth. Finally, as discussed in Exhibit C, environmental justice will be served by the proposed regulation because the adverse impacts of climate change will disproportionately affect low income populations.

Based on the extensive cost benefit analyses underlying the development of the federal social cost of carbon and more recent analyses, the benefits of the proposed regulation will clearly outweigh its costs. The federal interagency task force charged with developing a social cost of carbon for use by federal agencies in cost-benefit analysis calculated a variety of values representing the average and high cost of the damages caused by GHG emissions for different

²⁷⁴ This assumes a \$10 per metric ton carbon charge, that a gallon of E10 produces 17.6 pounds of fossil CO₂, that burning one thousand cubic feet (mcf) of natural gas produces 117.10 pounds of CO₂, and there are 2204.62 pounds per metric ton. A portion of any increase will be borne by suppliers in competitive markets.

²⁷⁵ EIA, <https://www.eia.gov/dnav/ng/hist/rngwhhdD.htm>.

²⁷⁶ Average annual prices varied by \$1.48 between a low of \$2.24 in 2016 and a high of \$3.62 in 2012. <https://www.statista.com/statistics/204740/retail-price-of-gasoline-in-the-united-states-since-1990/>

time periods and discount rates.²⁷⁷ The agencies' 2016 report calculated that the average social cost of carbon in 2020 (using a discount rate of 3%) is \$42/ton, but that the 95th percentile (high) cost would be \$123/ton. In 2050, these figures increase to \$69/ton and \$212/ton.²⁷⁸ As action is delayed, the social cost of carbon increases because the damage is greater.²⁷⁹ A more recent peer-reviewed study determined that the social cost of carbon was \$48, considering damages in the United States alone.²⁸⁰ These costs represent the marginal cost of avoiding future damage from the emission of a ton of carbon in any given year and they, therefore, do not include the damage that will already occur as a result of past emissions.²⁸¹ Because the cost of allowances under the proposed regulation will fall between a reserve price below the social cost of carbon and a cost containment price that approximates the social cost of carbon, the marginal value of the damages avoided by putting a price on greenhouse gas emissions under this proposed regulation will always exceed the marginal cost. Moreover, the value of most allowances will be recovered for other productive use. This will increase the proposed regulation's benefits beyond a more typical command-and-control regulation that would impose costs without recovering benefits. It is for this reason that most analysts have referred to this type of regulation as providing a "double dividend."²⁸² Thus, based on this work, the Board and the Department can readily conclude that the benefits of the proposed regulation will far outweigh its costs.

²⁷⁷. *Interagency Working Group on Social Cost of Greenhouse Gases, Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866* (2016), https://19january2017snapshot.epa.gov/sites/production/files/2016-12/documents/sc_co2_tsd_august_2016.pdf [hereinafter 2016 SCC] at 4; *Interagency Working Group on Social Cost of Greenhouse Gases, Addendum to Technical Support Document on Social Cost of Carbon for Regulatory Impact Analysis under Executive Order 12866: Application of the Methodology to Estimate the Social Cost of Methane and the Social Cost of Nitrous Oxide* (2016), https://19january2017snapshot.epa.gov/sites/production/files/2016-12/documents/addendum_to_sc-ghg_tsd_august_2016.pdf.

²⁷⁸. 2016 SCC, *supra* note 215 at 4, Table ES-1. Bob Litterman, one of the world's leading economists on pricing risk suggests that the failure of the calculations of the social cost of carbon to incorporate high damage-low probability events results in a lower cost estimates and emphasizes that delay in mitigation by fifteen years will triple the social cost of carbon. Bob Litterman, Kent Daniel & Gernot Wagner, *Applying Asset Pricing Theory to Calibrate the Price of Climate Risk* 43 (March 15, 2017), https://globalriskinstitute.org/wp-content/uploads/2017/05/GRI_Asset-Pricing-Climate-Risk_Mar-15-2017-Litterman.pdf.

²⁷⁹. See *Env'tl. Prot. Agency, Fact Sheet, Social Cost of Carbon 2* (2016), https://19january2017snapshot.epa.gov/sites/production/files/2016-12/documents/social_cost_of_carbon_fact_sheet.pdf [hereinafter EPA SCC FACT SHEET].

²⁸⁰ Katharine Ricke, Larent Drouet, Ken Caldeira & Massimo Tavoni, *Country-level social cost of carbon*, 8 *Nature Climate Change* 895 (2018). As discussed in Exhibit C, the UNFCCC requires that cost-benefit analysis address global damages and that treaty provision is binding on Pennsylvania under the Supremacy Clause of the United States Constitution.

²⁸¹. See *Env'tl. Prot. Agency, Fact Sheet, Social Cost of Carbon 2* (2016), https://19january2017snapshot.epa.gov/sites/production/files/2016-12/documents/social_cost_of_carbon_fact_sheet.pdf, at 1 ("The SC-CO₂ is a measure, in dollars, of the long-term damage done by a ton of carbon dioxide (CO₂) emissions in a given year. This dollar figure also represents the value of damages avoided for a small emission reduction (*i.e.*, the benefit of a CO₂ reduction).")

²⁸². See, Lawrence H. Goulder, *Environmental Taxation and the "Double Dividend:" A Reader's Guide* 26 (Nat'l Bureau of Econ. Research, Working Paper No. 4896, 1994); Robert B. McKinstry, Jr.,

Adam Rose, & Coreen Ripp, *Incentive-Based Approaches to Greenhouse Gas Mitigation in Pennsylvania: Protecting the Environment and Promoting Fiscal Reform*, 14 *Widener L.J.* 205, 220-21 (2004) See, also, Marc Gunther, *Climate Converts: The Conservatives Who Are Switching Sides on Warming*, *YALEENVIRONMENT360* (Mar. 30, 2017), <http://e360.yale.edu/features/climate-converts-the-conservatives-who-are-switching-sides-on-climate-change>; Jerry Taylor, *The Conservative Case for a Carbon Tax*, *NISKANEN CTR.* (Mar. 23, 2015), <https://niskanencenter.org/wp-content/uploads/2015/03/The-Conservative-Case-for-a-Carbon-Tax1.pdf>; Bob Litterman, *What is the Right Price for Carbon Emissions*, 36 *REGULATION* 38 (2013), <https://object.cato.org/sites/cato.org/files/serials/files/regulation/2013/6/regulation-v36n2-1-1.pdf>.

Exhibit A
Petitioners

Exhibit B
Proposed Regulation

Exhibit C

Robert B. McKinstry, Jr. & John C. Dernbach, *Applying the Pennsylvania Environmental Rights Amendment Meaningfully to Climate Disruption*, 10 Mich. J. Env't'l & Admin. L 102 (201_)

APPLYING THE PENNSYLVANIA ENVIRONMENTAL RIGHTS AMENDMENT MEANINGFULLY TO CLIMATE DISRUPTION

Robert B. McKinstry, Jr. * and John C. Dernbach**

ABSTRACT

*The Pennsylvania Constitution contains a unique Environmental Rights Amendment (ERA), which recognizes an individual right to “clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment.” The ERA also includes a public trust element that makes “Pennsylvania’s public natural resources . . . the common property of all the people, including generations yet to come.” It makes the Commonwealth the “trustee of these resources,” requiring it to “conserve and maintain them for the benefit of all the people.” Recent decisions by the Pennsylvania Supreme Court (the Court) in *Robinson Township v. Commonwealth* and *Pennsylvania Environmental Defense Foundation v. Commonwealth* provide significant support for Pennsylvania regulations to address the threat of climate disruption posed by greenhouse gas (GHG) emissions to achieve net zero carbon emissions by the middle of this century.*

In light of the threats that climate disruption poses to Pennsylvania’s public natural resources, the text of the ERA, and the principles articulated in those recent cases, we argue that a stable climate (a climate that has not been disrupted by anthropogenic emissions of GHGs) should be considered protected by the rights recognized by the ERA, and the public trust duties it creates. We argue that these rights and duties require Pennsylvania to employ regulatory measures to reduce GHG emissions to the level warranted by the social cost of carbon and to achieve carbon neutrality (net zero emissions) by mid-century. Further, we argue that there are judicially recognizable standards to compel the Commonwealth to exercise its existing authority to limit GHG emissions. In light of existing legislative authority, the obligations imposed by the United Nations Framework Convention on Climate Change, the Paris Agreement, and the federal Clean Air Act, we make the case that this regulatory program should take the form of an economy-wide cap-and-trade program providing for the auction of allowances with a reserve price based on the social cost of carbon and additional measures to prevent leakage and a cap reaching carbon neutrality by mid-century.

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INTRODUCTION

In 1971, Pennsylvania voters overwhelmingly approved a nationally unique Environmental Rights Amendment (ERA) to the Pennsylvania Constitution, creating an individual right for all Pennsylvanians to “clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment.”²⁸³ The ERA further made “Pennsylvania’s public natural resources . . . the common property of all the people, including generations yet to come,”²⁸⁴ and made the Commonwealth the “trustee of these resources,”²⁸⁵ requiring it to “conserve and maintain them for the benefit of all the people.”²⁸⁶ Despite the ERA’s strong and clear language, for nearly half a century Pennsylvania courts left the provision toothless, substituting a three-part balancing test for the text of the ERA—a test completely divorced from the text that required little more than compliance with existing laws, and under which environmental advocates almost never won.²⁸⁷ In *Robinson Township v. Commonwealth (Robinson Township)* and

283. PA. CONST. art. I, § 27.

284. *Id.*

285. *Id.*

286. *Id.*

287. See *infra* note 24 and accompanying text; *Payne v. Kassab*, 312 A.2d 86, 94 (Pa. Commw. Ct. 1973), *aff’d* 361 A.2d 263 (Pa. 1976).

Pennsylvania Environmental Defense Foundation v. Commonwealth (PEDF), the Court dramatically reversed this approach, for the first time striking down acts of the General Assembly that it found to violate the ERA.²⁸⁸ In the *PEDF* case, the Court expressly rejected the three-part balancing test, and held that the text of the ERA itself should be the primary basis for interpreting and applying it.²⁸⁹ These decisions also confirmed that the ERA created enforceable individual rights to environmental protection and that the Commonwealth had a judicially enforceable duty as a trustee to protect those rights and to conserve the corpus of the environmental trust.²⁹⁰

The *PEDF* decision, in particular, provides significant support for meaningfully pricing GHG emissions based on the social costs of GHG-caused climate disruption. In *PEDF*, the Court held that the Commonwealth's duty as a trustee under Article I, § 27 of the Pennsylvania Constitution governs the disposition of natural gas lease revenues from state forest and park lands. It therefore struck down acts of the General Assembly that it found inconsistent with that duty. That legislation transferred monies received from gas leasing of state lands—which the Court held to represent “capital” or the corpus of the constitutional trust—into the General Fund, where it could be spent for purposes other than the conservation and maintenance of public natural resources.

Because climate disruption poses an existential threat to all of Pennsylvania's environmental trust resources, the logic of the *PEDF* decision leads to the conclusion that the ERA creates a duty for the Commonwealth to address climate disruption caused by GHG emissions. That conclusion, coupled with existing legislative authority, supports arguments for putting a meaningful price on those emissions, commensurate with the social cost of carbon. The *PEDF* decision also calls into question the General Assembly's ability to block regulations implementing programs for the protection of trust resources, including regulations addressing climate disruption.²⁹¹ The decision's implications regarding use of revenues from allowances or fees on GHG emissions are less clear. The better arguments would allow all or substantial portions of the revenues to be used for the General Fund, as long as the revenues derive from actions that preserve, rather than deplete, the corpus of the trust.

Furthermore, the *PEDF* decision and its application to climate disruption will likely have consequences beyond Pennsylvania's borders because it provides a judicially manageable approach to implementing an environmental constitutional amendment. Although more than a third of all state constitutions include provisions regarding resource conservation and pollution, the provisions have tended to be more symbolic than legally meaningful, in no small part because courts have been unwilling or unable to find a way to enforce them.²⁹² Moreover, many states apply a public trust doctrine similar to the standard incorporated into the Pennsylvania ERA,²⁹³ and a great many countries have environmental rights provisions in their constitutions.²⁹⁴ Because *PEDF* enforces an environmental rights provision and provides a judicially manageable standard for doing so, the decision will likely be influential in the many other states and countries with comparable provisions.²⁹⁵

PEDF also can impact efforts elsewhere to use the public trust doctrine and environmental constitutional provisions to compel governments to reduce GHG pollution and prevent climate disruption. Some countries expressly

The test bore no significant relationship to the text of Section 27. John C. Dernbach, Taking the Pennsylvania Constitution Seriously When It Protects the Environment: Part II: Environmental Rights and Public Trust, 104 DICK. L. REV. 97, 136-42 (1999). See John C. Dernbach & Marc Prokopchak, Recognition of Environmental Rights for Pennsylvania Citizens: A Tribute to Chief Justice Castille, 53 DUQ. L. REV. 335, 338-51 (2015); see *infra* discussion note 25.

288. See *Robinson Twp. v. Commonwealth*, 83 A.3d 901, 969 (Pa. 2013) (plurality); *Pa. Env'tl. Def. Found. v. Commonwealth*, 161 A.3d 911, 930-36 (Pa. 2017).

289. See generally *Pa. Env'tl. Def. Found.*, 161 A.3d 911 at 930-36.

290. See *Robinson Twp.*, 83 A.3d at 969; *Pa. Env'tl. Def. Found.*, 161 A.3d 911 at 930-36.

291. See *Pa. Env'tl. Def. Found.*, 161 A.3d at 934-40.

292. Barton Thompson, *Constitutionalizing the Environment: The History and Future of Montana's Environmental Provisions*, 64 MONT. L. REV. 157, 158-9 (2003).

293. See Barton Thompson, *The Public Trust Doctrine: A Conservative Reconstruction and Defense*, 15 SE. ENVTL. L.J. 47, 50-55 (2006).

294. JAMES R. MAY & ERIN DALY, *GLOBAL ENVIRONMENTAL CONSTITUTIONALISM* (2015).

295. See John C. Dernbach, Kenneth T. Kristl, & James R. May, *Pennsylvania Environmental Defense Foundation v. Commonwealth of Pennsylvania: Recognition of Environmental Rights for Pennsylvania Citizens*, RUTGERS L. REV. (forthcoming 2018) (manuscript at 39), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3137074 (arguing that *PEDF* is a “formative case[]” which is likely to “shape shared conversation in the legal academy and elsewhere for generations to come”).

address climate change in their constitutions, and a growing number of courts have found a right to climate justice in other provisions of their constitutions.²⁹⁶ Examples include both the Netherlands²⁹⁷ and at least one federal District Court in the United States.²⁹⁸ In light of the hostility of the current U.S. administration to the issue of climate change, actions by the states to limit GHG emissions and to address the problem of climate disruption have become particularly significant. We argue that the analysis in *PEDF* matters for the states with constitutional environmental protection provisions or public trust obligations by showing how a constitutional environmental provision can support a petition for rulemaking to limit GHG emissions in order to limit climate disruption, and also support a regulatory agency's authority to subsequently adopt and implement such a rulemaking.

Finally, *PEDF* is one in a series of cases in which the Pennsylvania Supreme Court has applied cogent historical and textual analysis to restore moribund state constitutional provisions to affect their original intent.²⁹⁹ In that respect, the court is emerging as an intellectual leader among state high courts.

In order best to explain the implications of the *PEDF* decision for climate disruption, we first discuss Article I, § 27 of the Pennsylvania Constitution and *Robinson Township* (Section I), and then analyze how *Robinson Township* was applied and extended in *PEDF* (Section II). Section III discusses the threats that climate disruption poses to Pennsylvania's public natural resources. In light of those impacts and the principles articulated in *Robinson Township* and *PEDF*, we make the case that a stable climate (a climate that has not been disrupted by anthropogenic emissions of GHGs) should be considered protected by the rights provided by the first clause of Article I, § 27 of the Pennsylvania Constitution, and protected by the public trust duties created by the second and third clauses. We then make the case in Section IV that the Commonwealth's duty to prevent climate disruption requires it to undertake measures to limit GHG emissions to the levels warranted by the social cost of carbon and to achieve carbon neutrality (net zero GHG emissions) by mid-century. We also argue that there are judicially recognizable standards to compel the Commonwealth to exercise its existing legislative authority to do so. Section V discusses the elements of a regulatory structure that can mitigate climate disruption. We argue that this structure should take the form of an economy-wide cap-and-trade program with allowances that are auctioned with a reserve price based on the social cost of carbon, accompanied by measures to prevent emissions "leakage." Section VI addresses issues relating to the prevention of leakage, distribution of allowances and the use of proceeds of an emissions auction. Finally, in Section VII we address limitations on the General Assembly's power to block such a regulatory program.

296. *Id.* at 39.

297. *See* Rechtbank Den Haag [Hague Court] 24 juni 2015, HA ZA 2015, 13-1396 m.nt. (Urgenda/State of the Netherlands) (Neth.) at 4.52 (holding that "a legal obligation of the State towards [Plaintiff] cannot be derived from Article 21 of the Dutch Constitution, . . . [but] these regulations still hold meaning, namely in the question . . . [of] whether the State has failed to meet its duty of care towards [Plaintiff]."); Robert B. McKinstry Jr., *Potential Implications for the United States of the Urgenda Foundation v. Netherlands Decision Holding that the UNFCCC and International Decisions Required Developed Nations to Reduce Emissions by 25 percent from 1990 Levels by 2020*, CLIMATE CHANGE, SUSTAINABLE DEVELOPMENT, AND ECOSYSTEMS COMMITTEE NEWSLETTER, July 2016, at 30, 31, https://www.americanbar.org/content/dam/aba/publications/nr_newsletters/ccsde/201607_ccsde.authcheckdam.pdf (noting that in the same case "[u]ltimately, the court concluded that the plaintiffs' standing to sue the state upon the Dutch state's obligation to exercise 'due care' was based on Dutch constitutional law, the law of the EU, and international law.").

298. *See* *Juliana v. United States*, 217 F. Supp. 3d 1224, 1241 (D. Or. 2017) (denying a motion to dismiss and holding that "[a]t its heart, this lawsuit asks this Court to determine whether defendants have violated plaintiffs' constitutional rights. That question is squarely within the purview of the judiciary."), *mandamus denied sub nom.*, *United States v. U. S. Dist. Court*, 884 F.3d 830 (9th Cir. Mar. 7, 2018), No. 17-71692.

299. The jurisprudence extends beyond the *Robinson Township* and *PEDF* decisions giving meaning to the original intent of Article I, § 27. In *William Penn School District v. Pa. Dep't of Education*, 170 A.3d 414 (Pa. 2017) the Pennsylvania Supreme Court reversed a dismissal of claims and interpreted the Education Clause in Article III, § 14 of the Pennsylvania Constitution to give meaning to its guarantee of "a through and efficient system of public education" in light of that clause's original intent. *William Penn Sch. Dist. v. Pa. Dep't of Educ.*, 170 A.3d 414 (2017). In *League of Women Voters v. Commonwealth*, the Court interpreted the Free and Fair Elections Clause in Article I, § 5, of the Pennsylvania Constitution to give that clause its original meaning, invalidating the invidious practice of partisan gerrymandering. *See* *League of Women Voters v. Commonwealth*, 178 A.3d 737, 741 (2018).

I. THE ENVIRONMENTAL RIGHTS AMENDMENT AND
ROBINSON TOWNSHIP

The Environmental Rights Amendment to the Pennsylvania Constitution³⁰⁰ was approved in 1971 by the voters by a margin of nearly four to one.³⁰¹ It contains three clauses. The first creates individual rights to environmental attributes.³⁰² The second creates additional rights by making Pennsylvania's public natural resources the property of all the people, including future generations.³⁰³ The third makes the Commonwealth, and its constituent units, trustees for the environment.³⁰⁴ Article I, § 27 provides:

The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.³⁰⁵

Shortly after the ERA was adopted, however, Pennsylvania's Commonwealth Court devised a three-part balancing test as a substitute for the text of the ERA. That test provided:

The court's role must be to test the decision under review by a threefold standard: (1) Was there compliance with all applicable statutes and regulations relevant to the protection of the Commonwealth's public natural resources? (2) Does the record demonstrate a reasonable effort to reduce the environmental incursion to a minimum? (3) Does the environmental harm which will result from the challenged decision or action so clearly outweigh the benefits to be derived therefrom that to proceed further would be an abuse of discretion?³⁰⁶

300. PA. CONST. art. I, § 27.

301. Franklin L. Kury, *The Environmental Amendment to the Pennsylvania Constitution: Twenty Years Later and Largely Untested*, 1 VILL. ENVTL. L.J. 123, 123 (1990).

302. PA. CONST. art. I, § 27, cl. 1.

303. *Id.* cl. 2

304. *Id.* cl. 3.

305. PA. CONST. art. I, § 27.

306. *Payne v. Kassab*, 312 A.2d 86, 94 (Pa. Commw. Ct. 1973), *aff'd* 361 A.2d 263 (Pa. 1976).

The test bore no significant relationship to the text of Section 27, which speaks of enforceable constitutional rights and duties.³⁰⁷ Over the four decades when the test was applied, parties invoking the ERA almost never prevailed.³⁰⁸ Until the *Robinson Township* decision in 2013, no court had used the ERA to hold a statute or regulation unconstitutional.³⁰⁹ In that case, however, a plurality of the Court used the ERA for precisely that purpose.

The legislation challenged in *Robinson Township* addressed the regulation of natural gas resources in the Commonwealth, particularly shale gas. The legislation superseded local governments' control over land use, as well as those governments' case-by-case consideration of the impacts of gas development on the natural environment.³¹⁰ Chief Justice Castille's plurality opinion held that the legislative creation of uniform rules interfered with the municipalities' duties as trustees under Article I, § 27, and that the rules were therefore unconstitutional.³¹¹

The plurality in *Robinson Township* based its construction of the ERA primarily on the plain language of the provision and its legislative history.³¹² It found that its construction was supported by consideration of "the occasion

307. Dernbach, *supra* note 5 at 136-42 (1999).

The test's requirement for compliance with applicable statutes and regulations is meaningless with regards to a constitutional provision and certainly could not apply to actions challenging a statute on constitutional grounds. Although something like the second and third prongs of the test might conceivably be applied in some fashion where a court was balancing one constitutional right, such as a private party's property right, against the constitutional right provided by the ERA in the context of a permit decision. But it is irrelevant to evaluation of the constitutionality of a statute or the government's failure to exercise its duty as a trustee to conserve and maintain trust resources.

Even in the context of a permitting decision, the test puts a heavy, and in cases, impossibly heavy burden on the party asserting its constitutional rights under the ERA to produce evidence that the resource has been impaired. In private trust law, a trustee's duty is to gather and make available to the beneficiaries complete and accurate information as to the nature and amount of the trust property. *Robinson Twp. v. Commonwealth*, 83 A.3d 901, 983, n.60 (Pa. 2013) (plurality); *see also In re Rosenblum's Estate*, 459 Pa. 201, 328 A.2d 158, 164-65 (Pa. 1974) (citing RESTATEMENT (SECOND) OF TRUSTS § 173) (right of access to trust records is essential part of beneficiary's right to complete information concerning administration of trust; right of inspection has independent source in beneficiary's property interest in trust estate); *see also* RESTATEMENT (SECOND) OF TRUSTS § 173 *cm. c* ("[B]eneficiary is always entitled to such information as is reasonably necessary to enable him to enforce his rights under the trust or to prevent or redress a breach of trust."). This is consistent with § 83 of the RESTATEMENT (THIRD) OF TRUSTS, which states "A trustee has a duty to maintain clear, complete, and accurate books and records regarding the trust property and the administration of the trust, and, at reasonable intervals on request, to provide beneficiaries with reports or accountings."

This disparate burden also violates the rule of impartiality, favoring the developer over the rights of the parties invoking the ERA. RESTATEMENT (SECOND) OF TRUSTS § 183 ("When there are two or more beneficiaries of a trust, the trustee is under a duty to deal impartially with them"). RESTATEMENT (SECOND) OF TRUSTS § 183 (1959); *see also* RESTATEMENT (THIRD) OF TRUSTS § 79(1) (2005). This principle is illustrated in *Estate of Sewell*, where the Pennsylvania Supreme Court found that the trustee had violated its fiduciary duty by benefiting one beneficiary at the expense of another. 487 Pa. 379, 383, 409 A.2d 401, 402 (1979) (holding against the trustee where they failed to confirm the existence of an additional beneficiary while continuing to give all benefits to the known beneficiary).

308. *See* John C. Dernbach & Marc Prokopchak, *Recognition of Environmental Rights for Pennsylvania Citizens: A Tribute to Chief Justice Castille*, 53 DUQ. L. REV. 335, 344-51 (2015).

309. *See id.* (explaining that the ERA was invoked to challenge decisions by state agencies and local governments, but not identifying any cases in which the ERA was invoked to challenge the constitutionality of a statute).

310. *Robinson Twp.*, 83 A.3d at 979 ("[the statute's] 'new regulatory regime permitting industrial uses as a matter of right in every type of pre-existing zoning district is incapable of conserving or maintaining the constitutionally-protected aspects of the public environment and of a certain quality of life. In Pennsylvania, terrain and natural conditions frequently differ throughout a municipality, and from municipality to municipality. As a result, the impact on the quality, quantity, and well-being of our natural resources cannot reasonably be assessed on the basis of a statewide average. Protection of environmental values, in this respect, is a quintessential local issue that must be tailored to local conditions."), 984 ("Section 3215(d) marginalizes participation by residents, business owners, and their elected representatives with environmental and habitability concerns, whose interests Section 3215 ostensibly protects. *See* 58 Pa.C.S. § 3202 (Declaration of purpose of chapter). The result is that Section 3215 fosters decisions regarding the environment and habitability that are non-responsive to local concerns; and, as with the uniformity requirement of Section 3304, the effect of failing to account for local conditions causes a disparate impact upon beneficiaries of the trust. Moreover, insofar as the Department of Environmental Protection is not required, but is merely permitted, to account for local concerns in its permit decisions, Section 3215(d) fails to ensure that any disparate effects are attenuated. Again, inequitable treatment of trust beneficiaries is irreconcilable with the trustee duty of impartiality.")

311. *Id.*

312. *See Robinson Twp.*, 83 A.3d at 950-959. For a complete legislative history, see John C. Dernbach & Edmund J. Sonnenberg, *A Legislative History of Article 1, Section 27 of the Constitution of the Commonwealth of Pennsylvania, Showing Source Documents* (2015), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2474660. A companion version that does not show photocopies of pages of source documents is John C. Dernbach & Edmund J. Sonnenberg, *Legislative History: Article 1, Section 27 of the Constitution of the Commonwealth of Pennsylvania*, 24 WIDENER L.J. 181 (2015).

and necessity for the constitutional provision, . . . the circumstances of enactment and ratification, the mischief to be remedied and the object to be attained.”³¹³ The plurality discussed at length Pennsylvania’s long history of environmental abuse in connection with coal mining, deforestation, pollution, and wildlife eradication.³¹⁴ These abuses provided the impetus for the ERA’s adoption.³¹⁵ The opinion noted that the challenged law was written to encourage a gas extraction boom that posed the risk of causing similar environmental degradation.³¹⁶ In striking down the portions of the law that limited the power of local governments and state agencies to exercise their obligation as trustees to prevent degradation, diminution, and depletion of constitutionally protected natural resources, the plurality opinion articulated the following key legal principles:

The rights provided by the first and second clauses of the ERA represent fundamental, individual rights akin to free speech, freedom of religion and other rights enumerated in Article I of the Pennsylvania Constitution, and they should be interpreted as such.³¹⁷

The first clause “affirms a limitation on the state’s power to act contrary” to the people’s right to “clean air, pure water, and the preservation of the natural, scenic, historic, and esthetic values of the environment.” As a result, “laws of the Commonwealth that unreasonably impair the right are unconstitutional.”³¹⁸

“The drafters seemingly signaled an intent that the concept of public natural resources would be flexible to capture the full array of resources implicating the public interest, as these may be defined by statute or at common law.”³¹⁹

The public natural resources that are made the property of all the people by the second clause and the subject of the Commonwealth’s duty as a trustee include “not only state-owned lands, waterways, and mineral reserves, but also resources that implicate the public interest, such as ambient air, surface and ground water, wild flora, and fauna (including fish) that are outside the scope of purely private property.”³²⁰ The constitutional rights created by the second clause of the ERA include the right to enforce the duty of a trustee created by the third clause.³²¹

The public trust provisions of the ERA are self-executing, as they create constitutional duties that bind all three branches of state government, and they can be applied and enforced by the judicial branch without further legislative action.³²²

The Commonwealth’s duties as a trustee should be governed by the established law applicable to trusts and trustees, including the legal principles articulated in the Restatement of Trusts.³²³ These trustee duties include prudence (“exercise[ing] ordinary skill, prudence and caution in managing corpus of trust”), loyalty (administering the trust “solely in beneficiary’s” interest), and impartiality (“treat[ing] all [beneficiaries] equitably in light of the purposes of the trust”).³²⁴

313. *Robinson Twp.*, 83 A.3d at 960.

314. *Id.* at 960-963.

315. *Id.* at 961 (“With these events in the recent collective memory of the General Assembly, the proposed Environmental Rights Amendment received the unanimous assent of both chambers during both the 1969–1970 and 1971–1972 legislative sessions”).

316. *Id.* at 976.

317. *Id.* at 953-54, 976.

318. *Id.* at 951.

319. *Id.* at 955.

320. *Id.*

321. *Id.* at 955-56 (“The third clause of Section 27 establishes the Commonwealth’s duties with respect to Pennsylvania’s commonly-owned public natural resources, which are both negative (*i.e.*, prohibitory) and affirmative (*i.e.*, implicating enactment of legislation and regulations). The provision establishes the public trust doctrine with respect to these natural resources (the corpus of the trust) and designates ‘the Commonwealth’ as trustee and the people as the named beneficiaries.”).

322. *See id.* at 966-67.

323. *Id.* at 955-57.

324. *Id.* at 957, 959.

The plurality opinion, however, received votes from only three of the Court’s seven justices.³²⁵ Justice Baer supported the plurality’s decision on a separate basis—substantive due process.³²⁶ While the *Robinson Township* decision sketched a view of what Article I, § 27 could ultimately mean, it did not enshrine these principles as law.

II. THE DECISION IN *PEDF*

In *PEDF*, the Court reaffirmed the *Robinson Township* principles and made them the applicable law of Article I, § 27. The plaintiff in *PEDF* challenged a series of legislative enactments that eliminated requirements that revenues from gas development leases on state forest and park lands be used for conservation purposes; these enactments transferred oil and gas leasing revenues to the general fund.³²⁷ The challenged legislation thus significantly changed the disposition of revenues dedicated to the Oil and Gas Lease Fund, administered by the Department of Conservation and Natural Resources (DCNR).³²⁸ The Fund was created by a 1955 Act³²⁹ requiring “[a]ll rents and royalties from oil and gas leases of any” Commonwealth land to be deposited in the fund and “exclusively used for conservation, recreation, dams, or flood control.”³³⁰ The challenged legislation transferred much of the money that would have been deposited in the Lease Fund to the General Fund, where it could be used for any purpose authorized by the General Assembly.³³¹ The challenged legislation also created a cap on revenues committed to DCNR under the Lease Fund, rather than requiring *all* moneys received from gas leasing to be used for conservation and maintenance of environmental trust resources.³³²

The plaintiff challenged these enactments in Commonwealth Court as violative of the public trust clauses of Article I, § 27.³³³ The Commonwealth Court granted summary judgment to the Commonwealth, holding that there was no violation of the constitutional public trust.³³⁴ In reversing the Commonwealth Court, a majority of the Court reaffirmed the breadth of the *Robinson Township* decision and Article I, § 27 rights and duties, and it quoted extensively from *Robinson Township*.³³⁵ The Court held:

Because state parks and forests, including the oil and gas minerals therein, are part of the corpus of Pennsylvania’s environmental public trust, we hold that the Commonwealth, as trustee, must manage them according to the plain language of Section 27, which imposes fiduciary duties consistent with Pennsylvania trust law. We further find that the constitutional language controls how the Commonwealth may dispose of any proceeds generated from the sale of its public natural resources.³³⁶

The Court’s recitation of the facts suggests that the Court viewed the General Assembly’s actions as looting a fund (the Lease Fund) dedicated to conservation of state forests and parks in order to fund a budget deficit in a way

325. *Id.* at 1000.

326. *Id.* at 1000-1001.

327. Pa. Envtl. Def. Found. v. Commonwealth, 161 A.3d 911, 916, 921-25 (Pa. 2017) (“ ‘Three legislative amendments to the state fiscal code between 2008 and 2014 redirected a total of \$335 million that would have been used for conservation purposes under the [Lease Fund Act] to the general fund, where it is appropriated for a variety of state government purposes. In addition, the Legislature prevented DCNR from spending any [Lease Fund Act] royalties without prior legislative authorization. Finally, the Legislature began using [Lease Fund] revenue to support the overall budget of DCNR, rather than obtaining that budget money from the general fund and using [Lease Fund] money for conservation purposes related to oil and gas extraction.’ ”, quoting John C. Dernbach, *The Potential Meanings of a Constitutional Public Trust*, 45 ENVTL. L. 463, 488 (2015) (footnotes omitted)).

328. *Id.*

329. Oil and Gas Lease Fund Act, 71 PA. CONS. STAT. § 1331 (2017).

330. *Id.*

331. *PEDF*, 161 A.3d at 921-24.

332. *Id.*

333. *Id.* at 925-926, 928

334. *Id.* at 928.

335. *Id.* at 916-921 (quoting *Robinson Twp. v. Commonwealth*, 83 A.3d 901, 960-63 (Pa. 2013) (plurality)), 929-933, 936, 938.

336. *PEDF*, 161 A.3d at 916.

that would interfere with maintenance of those lands.³³⁷ The Court found this change significant because “DCNR had anticipated receiving the full amount of the rents and royalties to allow it to oversee the rapid expansion of drilling on state land when it decided to enter into the 2008 Leases.”³³⁸ The legislation further restricted the environmental purposes for which the now-limited revenues going into the Lease Fund could be used.³³⁹ The Court characterized the challenged actions as “transfers of capital.”³⁴⁰

The portions of the opinion of greatest significance for regulation of GHGs relate to the standard of review under Article I, § 27 and the contours of the ERA.³⁴¹ The Court began by rejecting outright the three-part balancing test that had been used as a substitute for the text of the ERA, saying that the test “strips the constitutional provision of its meaning.”³⁴² The Court then stated that the first two clauses of the ERA created rights that were “excepted out of the general powers of government” and that those rights, like all other rights articulated in Article I of the Pennsylvania Constitution, “shall forever remain inviolate.”³⁴³ It noted that the “public natural resources”³⁴⁴ that were made the property of the people included both the state forest and park lands and “the oil and gas themselves.”³⁴⁵ The Court explained that the original draft of the second sentence of the ERA provided that the property of the people (including future generations) extended to “ ‘Pennsylvania’s natural resources, including the air, waters, fish, wildlife, and the public lands and property of the Commonwealth’ ” The Court further explained that this language was revised to remove the enumerated list and thereby discourage courts from limiting the scope of natural resources covered.” Because there was no stated problem with the list of natural resources contained in the original draft, the list in the original draft of the second sentence represents a minimum list of the public natural resources protected by the ERA.³⁴⁶ The items on this list are therefore the property of all the people.³⁴⁷

The Court then elaborated on the trustee duties created by the third clause of the ERA, adopting the *Robinson Township* interpretation of that clause as imposing upon the Commonwealth a fiduciary duty equivalent to that imposed upon trustees by existing trust law, with that duty extending to the public, including future generations.³⁴⁸ The Court discussed the applicable duties imposed on trustees as set forth in the Restatement (Second) of Trusts, noting that these duties include the requirement that a trustee “manage the trust so as to give all of the beneficiaries due regard for their respective interests in light of the purposes of the trust.”³⁴⁹ The Court summarized the duties created by Article I, § 27, as follows:

Pennsylvania’s environmental trust thus imposes two basic duties on the Commonwealth as the trustee. First, the Commonwealth has a duty to prohibit the degradation, diminution, and depletion of our public natural resources, whether these harms might result from direct state action or from the actions of private parties. Second, the Commonwealth must act affirmatively via legislative action to protect the environment.

337. See *Robinson Twp. v. Commonwealth*, 83 A.3d 901, 955-56 (Pa. 2013) (plurality) (“The third clause of Section 27 establishes the Commonwealth’s duties with respect to Pennsylvania’s commonly-owned public natural resources, which are both negative (*i.e.*, prohibitory) and affirmative (*i.e.*, implicating enactment of legislation and regulations). The provision establishes the public trust doctrine with respect to these natural resources (the corpus of the trust) and designates ‘the Commonwealth’ as trustee and the people as the named beneficiaries.”).

338. *PEDF*, 161 A.3d at 922.

339. *Id.*

340. *Id.* at 924.

341. *Id.* at 930-36.

342. *Id.* at 930.

343. *Id.* at 930-31 (quoting *Robinson Twp. v. Commonwealth*, 83 A.3d 901, 948 (Pa. 2013) (plurality), quoting PA. CONST. art. I, § 25).

344. *Id.* at 931.

345. *Id.*

346. *Id.*

347. *Id.* (citing PA. L. JOURNAL, 154th General Assembly, No. 118, Reg. Sess., 2274 (1970) (Broughton Analysis).) In a footnote, the Court explained that the word “public” was added to modify “natural resources” to indicate that the public’s rights and the trust obligations did not extend to “purely private property rights.” The Court also noted that the ERA’s author and principal advocate opined that that this limitation did not apply to resources, such as those originally enumerated, that “involve a public interest.” *Id.*, n.22 (quoting PA. L. JOURNAL, 154th General Assembly, No. 118, Reg. Sess., 2271-72 (1970) (statement by Rep. Kury)).

348. *Pa. Env’tl. Def. Found. v. Commonwealth*, 161 A.3d 911, 932 (Pa. 2017).

349. *Id.* at 933.

Although a trustee is empowered to exercise discretion with respect to the proper treatment of the corpus of the trust, that discretion is limited by the purpose of the trust and the trustee’s fiduciary duties, and does not equate “to mere subjective judgment.” The trustee may use the assets of the trust “only for purposes authorized by the trust or necessary for the preservation of the trust; other uses are beyond the scope of the discretion conferred, even where the trustee claims to be acting solely to advance other discrete interests of the beneficiaries.”³⁵⁰

In a footnote, the Court expressly rejected the dissent’s contention that its holding would cordon off hundreds of millions of dollars for other budgetary uses, noting that this question was never raised and was not before the Court.³⁵¹

Consequently, the Court held that if the trustee was disposing of the assets of the trust, it was bound to use the proceeds in ways necessary and appropriate for carrying out the purposes of the trust, which in the case of the ERA was the maintenance and conservation of public natural resources.³⁵² The Court rejected the plaintiff’s argument that “all revenues generated by oil and gas leases [needed to] remain in the corpus of the trust.”³⁵³ It held that the royalties arose from the sale of principal and were therefore in the trust.³⁵⁴ The Court said it was less clear how to categorize other revenue streams from gas leasing, and that additional advocacy was required to determine whether those revenues constituted principal or income.³⁵⁵

Reaffirming the plurality opinion in *Robinson Township*, the Court rejected an argument raised by the Republican Caucus of the General Assembly that the public trust provisions of Article I, § 27 were not self-executing but instead required implementing legislation.³⁵⁶ It also reaffirmed the *Robinson Township* plurality opinion “that the Commonwealth’s obligations as trustee ‘create a right in the people to seek to enforce the obligations.’”³⁵⁷

Applying its explanation of Article I, § 27 to the legislation at issue, the Court concluded that in transferring royalties from a restricted fund to the unrestricted General Fund, the Commonwealth did not “contemplate, let alone reasonably exercise, its duties as the trustee of the environmental public trust created by the” ERA.³⁵⁸ The Court thus invalidated the provisions relating to the transfer of royalties,³⁵⁹ which meant that the prior statutory dedication of the Lease Fund resources to DCNR applied.³⁶⁰ The Court emphasized that its holding did not require that the revenues constituting the corpus of the trust be included in the restricted fund or even be dedicated to DCNR, as long as the funds were used for the purpose of the trust, *viz.* “maintenance and conservation” of Article I, § 27 resources.³⁶¹ The matter was remanded to the Commonwealth Court to make a determination with respect to other revenues.³⁶²

III. ARTICLE I, §27 APPLIES TO CLIMATE DISRUPTION

Climate disruption already adversely affects Pennsylvania, and these adverse effects will increase over time. The severity of future impacts depends to a great extent on what actions are taken to reduce greenhouse gas emissions and even remove carbon dioxide from the atmosphere.³⁶³ Yet under Article I, §27, the people of the Commonwealth have

350. *Id.* (internal citations omitted).

351. *Id.* at n.25.

352. *Id.* at 933-35.

353. *Id.* at 935.

354. *Id.*

355. *Id.* at 935-36.

356. *Id.* at 936-37.

357. *Id.* at 937.

358. *See id.*

359. *Id.* at 937-38.

360. *Id.* at 939.

361. *Id.* at 939.

362. *Id.*

363. TIM FLANNERY, *THE WEATHER MAKERS* 167-202 (2005); RICHARD B. ALLEY, *THE TWO -MILE TIME MACHINE* 181-192 (2000), <https://muse.jhu.edu/book/36460>.

a right to a natural climate that is not disrupted by excessive concentrations of GHGs in the atmosphere. In addition, the Commonwealth has a commensurate duty to limit emissions to prevent climate disruption.

A. *The Impact of Climate Disruption on Pennsylvania*

The existing and projected adverse effects of climate change on the nation and the world have been well documented and explained. Sources include the U.S. Environmental Protection Agency's 2009 finding under the Clean Air Act that emissions of greenhouse gases from motor vehicles may reasonably be expected to endanger public health and welfare, which was upheld on judicial review.³⁶⁴ They also include multiple reports of the U.S. Global Change Research Program, including its 2017 report;³⁶⁵ multiple reports of the National Research Council (NRC) of the National Academy of Sciences;³⁶⁶ the reports of the Intergovernmental Panel on Climate Change;³⁶⁷ numerous reports of other national academies of science;³⁶⁸ and even judicial decisions.³⁶⁹

State-specific information also exists for Pennsylvania. The Pennsylvania Climate Change Act requires the Department of Environmental Protection (DEP) to produce a report every three years on the actual and projected impacts of climate change on the state.³⁷⁰ DEP's 2015 report on the impacts of climate change in Pennsylvania³⁷¹ makes clear that the effects of climate disruption on Pennsylvania's public natural resources are likely to exceed the impacts of uncontrolled coal mining, deforestation, and industrial development that motivated Section 27's adoption. These historical effects are described in *Robinson Township* and *PEDF* at length.³⁷² The 2015 Pennsylvania report explains that GHGs in the atmosphere are already reaching the point that will cause an increase in temperature from pre-industrial levels, and their continued emissions will cause an increase much higher than 2°C above pre-industrial levels by mid-century.³⁷³ According to that report, "Pennsylvania has undergone a long-term warming of more than 1°C (1.8°F) over the past 110 years."³⁷⁴ It also projects an increase of about 3°C (5.4°F) between 2000 and 2050, which means that the "current warming trend is expected to continue at an accelerated rate."³⁷⁵ As discussed below, it

364. "Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act; Final Rule," 74 Fed. Reg. 66,496, 66,497-66,514 (Dec. 15, 2009) [hereinafter *Endangerment Finding*], *aff'd* *Coal. for Responsible Regulation, Inc. v. U.S. Evtl. Prot. Agency*, 684 F.3d 102 (D.C. Cir. 2012), *aff'd in part and rev'd in part on other grounds sub nom. Utility Air Regulatory Grp. v. Evtl. Prot. Agency*, 134 S. Ct. 2427 (2014) ("*UARG*").

365. See, e.g., U.S. GLOBAL CHANGE RESEARCH PROGRAM, CLIMATE SCIENCE SPECIAL REPORT: FOURTH NATIONAL CLIMATE ASSESSMENT, VOLUME I (2017), https://science2017.globalchange.gov/downloads/CSSR2017_FullReport.pdf. See also John C. Dernbach & Robert Altenburg, *Evolution of U.S. Climate Policy*, in GLOBAL CLIMATE CHANGE AND U.S. LAW 84-87 (Michael B. Gerrard & Jody Freeman eds. 2014) (explaining authorizing legislation for U.S. Global Change Research Program and describing some earlier reports).

366. See, e.g., NATIONAL RESEARCH COUNCIL, CLIMATE CHANGE 2013: THE PHYSICAL SCIENCE BASIS (2013), <http://www.ipcc.ch/report/ar5/wg1/>; NATIONAL RESEARCH COUNCIL, CLIMATE STABILIZATION TARGETS: EMISSIONS, CONCENTRATIONS, AND IMPACTS OVER DECADES TO MILLENNIA (2011), <https://www.nap.edu/catalog/12877/climate-stabilization-targets-emissions-concentrations-and-impacts-over-decades-to-millennia>; NATIONAL RESEARCH COUNCIL, ABRUPT IMPACTS OF CLIMATE CHANGE: ANTICIPATING SURPRISES (2013), <https://www.nap.edu/catalog/18373/abrupt-impacts-of-climate-change-anticipating-surprises>.

367. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, FIFTH ASSESSMENT REPORT (AR5) (2014), <http://www.ipcc.ch/report/ar5/index.shtml>.

368. See, e.g., ROYAL SOCIETY, CLIMATE CHANGE: A SUMMARY OF THE SCIENCE (2010), <https://royalsociety.org/topics-policy/publications/2010/climate-change-summary-science/>.

369. See *Coal. for Responsible Regulation, Inc.*, 684 F.3d 102; see also *Green Mt. Chrysler Plymouth Dodge Jeep v. Crombie*, 508 F. Supp. 295, 307-310 (D. Vt. 2007).

370. Pennsylvania Climate Change Act, 71 Pa. C.S. § 1361.3.

371. JAMES SHORTLE, ET AL., PENNSYLVANIA CLIMATE IMPACTS ASSESSMENT UPDATE (May 2015) [hereinafter *PA CLIMATE IMPACTS*]. The report was required by the Pennsylvania Climate Change Act, 71 Pa. C.S. § 1361.3.

372. *Robinson Twp. v. Commonwealth*, 83 A.3d 901, 960-63 (Pa. 2013) (plurality), *quoted in* *Pa. Evtl. Def. Found. v. Commonwealth*, 161 A.3d 911, 916-21 (Pa. 2017).

373. See generally *PA CLIMATE IMPACTS*, *supra* note 89.

374. *Id.* at 6 ("Changes in Pennsylvania's temperature are reflected in other metrics, such as heating degree days (which have increased) and cooling degree days (which have decreased).").

375. *Id.* at 7.

will be necessary to keep temperature increases well below 2°C and desirable to keep them below 1.5°C to prevent serious climate disruption.³⁷⁶

This warming is, and will continue to be, accompanied by a parallel trend in increasing precipitation.³⁷⁷ “The corresponding annual precipitation increase is expected to be 8%, with a winter increase of 14%.”³⁷⁸ The report does not say—and could not say—that warming and precipitation trends will stabilize in 2050.³⁷⁹

Climate change, the report says, will also increase air pollution and will likely make water pollution worse. On air pollution, the report states:

Climate change will worsen air quality relative to what it would otherwise be, causing increased respiratory and cardiac illness. The linkage between climate change and air quality is most strongly established for ground-level ozone creation during summer, but there is some evidence that higher temperatures and higher precipitation will result in increased allergen (pollen and mold) levels as well.³⁸⁰

Climate change will also likely increase water pollution:

Climate change can potentially also worsen water quality, affecting health through drinking water and through contact during outdoor recreation. The two primary mechanisms through which climate change could affect surface water quality are 1) increased pathogen loads due to increased surface runoff from livestock farms, sewer overflows, and resuspension of pathogens in river sediments during heavy rainstorms, and 2) increased risk of harmful algal blooms in eutrophied lakes and reservoirs.³⁸¹

Although there may be some beneficial impacts from these changes, the Pennsylvania climate impacts report indicates that the adverse effects on Pennsylvania’s public natural resources will dwarf any positive impacts.³⁸² Higher temperatures will stress the dairy industry and require increased energy use.³⁸³ It will also cause forest types to change, lead to increased mortality in the forests, and interfere with forest regeneration.³⁸⁴ Increased temperatures may increase the prevalence of vector-borne diseases.³⁸⁵ Climate change will have “a severe, negative impact on winter recreation,” so that “Pennsylvania’s downhill ski and snowboard resorts are not expected to remain economically viable past mid-century.”³⁸⁶ Some areas will no longer be able to support trout.³⁸⁷ Flood risks will increase throughout the Commonwealth.³⁸⁸ Moreover, sea level rise will affect the Delaware estuary, inundating some areas and causing an increase in salinity.³⁸⁹

Reports published since 2015 have determined that the adverse impacts of climate disruption on public natural resources will be more severe than those identified in the Pennsylvania climate impacts report. One more recent report indicates that sea level rise due to melting glaciers will be more extensive, such that some parts of Tinicum National Wildlife Refuge and Philadelphia International Airport will be inundated before the end of the century.³⁹⁰ Another

376. See *infra* Section V.A.

377. PA CLIMATE IMPACTS, *supra* note 89, at 6-7.

378. *Id.* at 7.

379. See *id.*

380. *Id.* at 11.

381. *Id.* at 11, 14. In addition, “climate change will worsen the currently substandard water quality in the tidal freshwater region of the Delaware Estuary.”

382. See *id.*

383. *Id.* at 8.

384. *Id.* at 9-10.

385. *Id.* at 11.

386. *Id.*

387. *Id.* at 12.

388. *Id.*

389. *Id.* at 14.

390. A study published in 2018 based on 25 years of satellite data showed accelerated rates of sea level rise driven by the melting of the Greenland and Antarctic ice sheets and predicted that, if these rates continue, sea levels would rise by 65 centimeters, or 26 inches, by 2100 compared to past estimates. R. S. Nerem et al, *Climate-change-driven Accelerated Sea-Level rise Detected in the Altimeter Era*, 115 PROC. NAT’L

indicates that adverse impacts on plants and wildlife will be particularly severe, even with the emissions reductions that will be achieved under the current pledges in the Paris Agreement on climate change.³⁹¹ That study concluded that with the current pledges, temperatures would increase by approximated 3.2°C, reducing the ranges by more than 50% for approximately 49% of insect species, 44% of plant species and 26% of vertebrate species, and dramatically increasing their risk of extinction.³⁹² With greater GHG emission reductions that would limit temperature increases to the Paris Agreement’s goals of 2°C and 1.5°C, the damage will be substantially less.³⁹³ These species, of course, include species in Pennsylvania.

Nor will the impacts of climate disruption be evenly distributed. Low income and minority communities are likely to be more severely affected because of “lack of air conditioning, greater prevalence of pre-existing health conditions, location and condition of housing, inadequate access to transportation, relatively greater rates of under-insurance, and concentrations in strenuous occupations.”³⁹⁴ In addition, because climate change will likely increase the price of water, food, and even energy, it will also disproportionately affect households with lower incomes.³⁹⁵

Three additional points need to be made about this information, and they all suggest that these impacts will be greater than indicated in the Pennsylvania report, the EPA’s endangerment finding, and other reports. Most obviously, perhaps, these analyses are mostly silent on impacts after 2050 or any other future date. There is no scientific reason to believe that warming will stabilize by those dates; indeed, in business-as-usual scenarios, warming continues after those dates.³⁹⁶

Second, it is very likely that the impacts of climate disruption will increase over time, and that any damages occurring after 2050 will be far greater than those discussed in the Pennsylvania report and other sources. Yet many cost-benefit analyses discount costs to future generations, thus reducing these calculated future costs to an insignificant number.³⁹⁷

ACAD. SCI. 2022, 2022 (Feb. 2018), <https://doi.org/10.1073/pnas.1717312115>; The last IPCC assessment estimated that sea levels could rise from between 44 cm and 74 cm by 2100, so that the 2018 study suggests that sea level rise will be approximately two times that estimate or 109 to 139 cm, or approximately four feet. John A. Church et al., Intergovernmental Panel on Climate Change, *Sea Level Change*, in CLIMATE CHANGE 2013: THE PHYSICAL SCIENCE BASIS, Chapter 13, at 1182, Table 13.5 (2013), <http://www.ipcc.ch/report/ar5/wg1/>. Because Tinicum marsh and the airport are located in tidal areas of the Delaware Estuary, significant portions would be inundated.

391. R. Warren et. al., *The Projected Effects on Insects, Vertebrates, and Plants of Limiting Global Warming to 1.5°C Rather Than 2°C*, 360 SCIENCE 791, 791 (May 18, 2018).

392. *Id.*

393. At 2°C these numbers fall to 18% of insects, 16% of plants, and 26% of vertebrates, and at 1.5°C they fall further to 6% of insects, 8% of plants and 4% of vertebrates. *Id.*

394. Shelley Welton, *Clean Electrification*, 88 U. COLO. L. REV. 571, 627-28 (2017) (citing IPCC and other studies).

395. *Id.* at 628-29.

396. Nebojsa Nakicenovic & Rob Swart (eds.), *Emissions Scenarios*, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, <http://www.ipcc.ch/ipccreports/sres/emission/index.php?idp=115>, (last visited April 15, 2018); INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2014 SYNTHESIS REPORT SUMMARY FOR POLICYMAKERS 11 (2014).

397. Many ethicists question whether the cost of future climate disruption affecting future unborn generations should be discounted at all. In one of the first assessments of the ethical implications of climate change, a group of ethicists noted:

Proponents of discounting in CBA urge that the value of future environmental benefits be determined in the same way that the market applies value to future events—that is by understanding the present value of future benefits. When such discounting occurs, benefits from climate change policy options that will accrue far in the future are given little present value. Such an approach makes current investors’ interests, not future generations’ welfare, the focus of concern (Banuri et al., 1996).

Donald Brown et al., White Paper on the Ethical Dimensions of Climate Change 29, (2006) (“Ethical White Paper”). These ethicists further concluded:

Because discounting benefits in CBA assumes only contemporary investor-individuals’ interests count in determining worth, discounting techniques in CBA can violate interests of future generations to have a global climate system that has not been degraded by human activities. Since nations agreed in the adopting the UNFCCC to protect the interests of future generations, discounting benefits and harms in CBAs can violate the duty of nations to keep promises made in treaties.

Id. at 32. These concerns were more recently echoed by Pope Francis in his encyclical letter, which, without addressing discounting per se, condemned placing short term current interests ahead of the interest of future generations. See POPE FRANCIS, ENCYCLICAL LETTER, LAUDATO SI’ OF THE HOLY FATHER FRANCIS ON CARE FOR OUR COMMON HOME 1118-1120 (2015).

Third, the damage estimates in the Pennsylvania assessment and other reports tend not to account for the possibility of catastrophic climate disruption. There are potentially significant risks of catastrophic results if GHG emissions are not reduced and eliminated in a sufficiently timely manner.³⁹⁸ The end Permian mass extinction presents an extreme example of the potential high risk; 90% or more of all life on Earth died following a rapid (in geological terms) increase in carbon dioxide that occurred when volcanic action burned significant coal-bearing strata.³⁹⁹ Most analyses of the social cost of carbon, which as discussed below measures the cost of the future damages caused by emitting a ton of carbon dioxide today, fail to account for the risk of catastrophic results. For climate disruption, the probabilistic curve plotting likelihood versus damage is unusual in that it has a very long tail, representing low probability catastrophic cost possibilities.⁴⁰⁰ In markets, the risk of such catastrophic events suggests that, rather than discounting, we should pay a premium to prevent them, just as we pay a premium for riskier stocks over safer bonds.⁴⁰¹ A model incorporating consideration of risk of catastrophic results far less significant than the end Permian mass extinction has calculated that in 2015 carbon dioxide should have been priced or taxed at about \$125 per ton.⁴⁰² The same model shows that each year that action is delayed will increase damages by \$700 billion per year “and a 15 year delay would cost roughly \$180 trillion, about six times current annual global consumption.”⁴⁰³

B. *Both the First and Second Clauses of Article I, § 27 Extend to the Natural Climate Unaffected by Climate Disruption*

1. Scope of Article I, § 27

Although the climate is not expressly protected under the ERA, the ERA’s language and legislative history, as well as the reasoning of both *Robinson Township* and *PEDF*, all compel the conclusion that a climate free of human disruption is protected by Article I, § 27.

The right to a natural climate unaffected by climate disruption is included within the ERA’s first clause, which protects the people of Pennsylvania’s right to “clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment.”⁴⁰⁴ The Pennsylvania report indicates that a warming climate will adversely affect air quality, thus compromising the people’s right to clean air.⁴⁰⁵ The report also indicates that a

398. *Massachusetts v. Envtl. Prot. Agency*, 549 U.S. 497, 521-22 (2007) (“According to the climate scientist Michael MacCracken, “qualified scientific experts involved in climate change research” have reached a “strong consensus” that global warming threatens (among other things) a precipitate rise in sea levels by the end of the century, MacCracken Decl. ¶ 15, Stdg.App. 207, “severe and irreversible changes to natural ecosystems,” *id.*, ¶ 5(d), at 209, a “significant reduction in water storage in winter snowpack in mountainous regions with direct and important economic consequences,” *id.*, and an increase in the spread of disease, *id.*, ¶ 28, at 218-219. He also observes that rising ocean temperatures may contribute to the ferocity of hurricanes. *Id.*, ¶¶ 23-25, at 216-217”). *See, e.g.*, R. B. Alley et. al., *Abrupt Climate Change*, 299 SCIENCE 2005, 2008 (2016); James Hansen, et. al., *Icemelt, Sea Level Rise and Superstorms: Evidence from Paleoclimate Data, Climate Modeling, and Modern Observations that 2° C Global Warming Could Be Dangerous*, 16 ATMOSPHERIC CHEM. AND PHYSICS 3761, 3762 (2016) [hereinafter Hansen et al., *Ice Melt*]; James Hansen et. al., *Global Temperature Change*, 103 PROC. NAT’L ACAD. SCI. 14288, 14292-93 (2006); T.M.L. Wigley, *The Climate Change Commitment*, 307 SCIENCE 1766, 1767-68 (2005).

399. Raymond B. Huey & Peter D. Ward, *Hypoxia, Global Warming and Terrestrial Late Permian Extinctions*, 308 SCIENCE 398 (2005); FLANNERY, *supra* note 81 at 200-201; JAMES HANSEN, STORMS OF MY GRANDCHILDREN: THE TRUTH ABOUT THE COMING CLIMATE CATASTROPHE AND OUR LAST CHANCE TO SAVE HUMANITY 144-50 (2009) [hereinafter STORMS].

400. *See* Matthew Collins et. al., *Long Term Climate Change: Projections, Commitments, and Irreversibility*, in CLIMATE CHANGE 2013: THE PHYSICAL SCIENCE BASIS, CONTRIBUTION OF WORKING GROUP I TO THE FIFTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL REPORT ON CLIMATE CHANGE 1029, 1114-19 (Sylvie Joussame, Abdalah Mokssit, Karl Taylor, Simon Tett eds. 2013).

401. JERRY TAYLOR, THE CONSERVATIVE CASE FOR A CARBON TAX 13-15 (2015), <http://niskanencenter.org/wp-content/uploads/2015/03/The-Conservative-Case-for-a-Carbon-Tax1.pdf>.

402. KENT D. DANIEL, ROBERT B. LITTERMAN, & GERNOT WAGNER, APPLYING ASSET PRICING THEORY TO CALIBRATE THE PRICE OF CLIMATE RISK 25 (Nov. 13, 2017) (revised draft), <https://gwagner.com/wp-content/uploads/DLW-Asset-Pricing-Climate-Risk-171113.pdf>.

403. *Id.* at 41.

404. PA CONST. art I, § 27, cl. 1.

405. PA CLIMATE IMPACTS, *supra* note 89, at 132.

warming climate will likely lead to greater water pollution, increased flooding, and sea level rise, thus compromising the people's right to clean water.⁴⁰⁶

The *Robinson Township* plurality "recognize[d] that, as a practical matter, air and water quality have relative rather than absolute attributes."⁴⁰⁷ As is the case with most other conventional water and air pollutants, carbon dioxide is a naturally occurring substance necessary for life and the maintenance of the climate, and it is only when the concentration of the pollutant becomes too high that natural processes are disrupted. For example, when the ERA recognizes a right to "pure water," this means water with levels of nutrients that support the normal functioning of aquatic ecosystems, and that conserves and maintains public natural resources, but not so high as to cause eutrophication.⁴⁰⁸ Likewise, when the ERA recognizes a right to "clean air," it means, as applied to carbon dioxide, levels necessary to support plant life and ecosystems, among other things, but not so high as to disrupt ecosystems, as will occur in climate disruption. Similarly, "pure water" means water with levels of carbon dioxide that support the normal functioning of aquatic ecosystems, and that conserves and maintains public natural resources, but not so high as to acidify the water and disrupt those natural systems.

In addition to clean air and water, a stable climate also provides critical natural and historic values of the environment. There can be little doubt that the relatively stable climate that has persisted since the end of the last Ice Age facilitated the rise of civilization.⁴⁰⁹ As the reports described above indicate, a stable climate also prevents the increasing incidence of vector-borne diseases and adverse effects from air pollution⁴¹⁰ and protects winter recreation.⁴¹¹ The assessments discussed above also establish that climate disruption will impair scenic and esthetic values of the environment by causing dramatic changes in forests and agriculture and by reducing or eliminating key species like trout.⁴¹²

In addition, the right to a natural climate unaffected by human-caused climate disruption is included within the second clause's protection of the public's right to the conservation and maintenance of public natural resources. The *Robinson Township* plurality emphasized that the concept of public natural resources encompassed a wide range of values of the natural environment:

At present, the concept of public natural resources includes not only state-owned lands, waterways, and mineral reserves, but also resources that implicate the public interest, such as ambient air, surface and ground water, wild flora, and fauna (including fish) that are outside the scope of purely private property.⁴¹³

Catastrophic climate disruption would radically impair and possibly eliminate the "wild flora, and fauna (including fish),"⁴¹⁴ public forests and their ecosystems, and game and wildlife⁴¹⁵ that the plurality in *Robinson Township* expressly recognized as falling within the public trust obligations of the second and third clauses of Article I, § 27.⁴¹⁶

The Court in *PEDF* and the *Robinson Township* plurality both cite the ERA's legislative history as supporting a broad construction of the public natural resources that are made the property of all the people. As indicated earlier, the *Robinson Township* plurality noted:

406. *Id.*

407. *Robinson Twp. v. Commonwealth*, 83 A.3d 901, 953 (Pa. 2013) (plurality).

408. Nitrogen compounds and phosphorus in water are necessary for supporting the plant life that supports the aquatic ecosystem, but when levels of these substances become too high eutrophication occurs and depletes oxygen, killing aquatic organisms and disrupting aquatic ecosystems are disrupted. Likewise, chromium is a heavy metal essential to life that we include in vitamin pills, but at too high a level it becomes a poison.

409. See RICHARD ALLEY, *THE TWO-MILE TIME MACHINE: ICE CORES, ABRUPT CLIMATE CHANGE, AND OUR FUTURE* (Princeton Univ. Press 2000); STORMS, *supra* note 117, 39-40.

410. PA CLIMATE IMPACTS, *supra* note 89, at 11.

411. *Id.* at 11-12.

412. *Id.* at 8-10 (agriculture and forestry), 12 (trout),

413. *Robinson Twp. v. Commonwealth*, 83 A.3d 901, 955 (Pa. 2013) (plurality); *accord* Pa. Env'tl. Def. Found. v. Commonwealth, 161 A.3d 911, 931 (Pa. 2017).

414. *Robinson Twp.*, 83 A.3d at 955.

415. *Id.*; see also Huey & Ward, *supra* note 117 (such catastrophic climate disruption has harmed forests in the past); Alley et. al, *supra* note 116; see Warren et al., *supra* note 109.

416. *Robinson Twp.*, 83 A.3d at 955.

[A]fter members of the General Assembly expressed disquietude that the enumeration of resources would be interpreted “to limit, rather than expand, [the] basic concept” of public natural resources, Section 27 was amended and subsequently adopted in its existing, unrestricted, form. The drafters seemingly signaled an intent that the concept of public natural resources would be flexible to capture the full array of resources implicating the public interest, as these may be defined by statute or at common law.⁴¹⁷

The Court in *PEDF* similarly explained that the removal of the specific list and its replacement with more general language was intended to “discourage courts from limiting the scope of natural resources covered.”⁴¹⁸

The climate is not a private resource. Rather, the climate represents the seasonal average ranges of temperature, precipitation and other atmospheric conditions in a particular area over a long period of time.⁴¹⁹ Climate determines the nature of wild and other naturally occurring vegetation, fish and other wildlife; the amount and quality of ground and surface water; the characteristics of soils; the flow and extent of streams, rivers and wetlands; air quality; and most other characteristics of naturally occurring ecosystems and natural communities. These considerations all compel the conclusion that a stable climate, not disrupted by the types of changes caused by human emissions of GHGs in the atmosphere, should be understood as a public natural resource to which the people have a right and which the Commonwealth has a trustee’s duty to conserve and maintain.⁴²⁰

However, under the express words of the ERA, the Commonwealth does not have a duty to “preserve” Pennsylvania’s climate unchanged.⁴²¹ Indeed, it would be impossible for the Commonwealth to do so, given the international nature of the problem and the fact that many future changes will occur because of the current levels of greenhouse gases in the atmosphere. However, as noted by the *Robinson Township* plurality, the constitutional provision uses the words “conserve and maintain,” rather than “preserve.”⁴²² This means that “the duties to conserve and maintain are tempered by legitimate development tending to improve upon the lot of Pennsylvania’s citizenry, with the evident goal of promoting sustainable development.”⁴²³ In further support of this proposition, the plurality cited the Montana Supreme Court’s holding that a constitutional provision providing an “inalienable . . . right to a clean and healthful environment”⁴²⁴ did “not protect merely against type[s] of environmental degradation ‘conclusively linked’ to ill health or physical endangerment and animal death, but could be invoked to provide anticipatory and preventative protection against unreasonable degradation of natural resources.”⁴²⁵

Finally, the public trust rights under Article I, § 27 inhere in “all the people including generations yet to come.”⁴²⁶ Thus, the virtual certainty that effects of climate disruption will be inequitably distributed and will have greater impacts on generations yet to come⁴²⁷ implicates Article I, § 27 even if only some people are adversely affected. As

417. *Id.* (citing 1970 Pa. Legislative Journal–House at 2271–75).

418. *PEDF*, 161 A.3d at 931.

419. *Climate*, MERRIAM-WEBSTER, <https://www.merriam-webster.com/dictionary/climate> (last visited Apr. 26, 2018); *see also* FLANNERY, *supra* note 81 at 19-26.

420. *Cf. In re Application of Maui Elec. Co.*, 141 P.3d. 1 (Haw. 2017). The case involved a challenge by citizens to a power purchase agreement with a fossil-fuel-fired power plant. The Hawai’i Constitution guarantees each person “the right to a clean and healthful environment, as defined by laws relating to environmental quality.” HAW. CONST. art. XI, § 9. The court held that the petitioners demonstrated “a threatened injury to the[ir] right to a clean and healthful environment from the effect of greenhouse gas emissions,” and thus had a right to a hearing on their claims. In other words, the right to a “clean and healthful environment” in Hawai’i includes a right to be protected against human-caused climate change.

421. *Robinson Twp. v. Commonwealth*, 83 A.3d 901, 948 (Pa. 2013) (plurality).

422. *Id.*

423. *Id.*

424. *Id.* at 953 (citations omitted).

425. *Id.*

426. PA. CONST. art. I, § 27, cl. 2.

427. *See, e.g.*, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2014 SYNTHESIS REPORT SUMMARY FOR POLICYMAKERS 17 (2014) (“Without additional mitigation efforts beyond those in place today, and even with adaptation, warming by the end of the 21st century will lead to high to very high risk of severe, widespread and irreversible impacts globally (high confidence). Mitigation involves some level of co-benefits and of risks due to adverse side effects, but these risks do not involve the same possibility of severe, widespread and irreversible impacts as risks from climate change, increasing the benefits from near-term mitigation efforts.”); *see also* Richard L. Revesz & Matthew R. Shahabian, *Climate Change and Future Generations*, 84 S. CAL. L. REV. 1097 (2010-2011); Kevin Clarke, *How Will Climate Change*

the *Robinson Township* plurality explained, disparate effects are “irreconcilable with the express command that the trustee will manage the corpus of the trust for the benefit of ‘all the people.’”⁴²⁸ The Commonwealth’s obligation also derives from the trustee responsibility of impartiality. “Dealing impartially with all beneficiaries means that the trustee must treat all equitably in light of the purposes of the trust.”⁴²⁹ For many reasons, the right to a natural climate unaffected by human-caused climate disruption is protected under both parts of Article I, § 27.

2. Commonwealth Duties Concerning Climate Disruption

The Commonwealth has several overall duties under Article I, § 27 concerning climate disruption. Under the first clause, the Commonwealth may not act contrary to the people’s right to a natural climate unaffected by climate disruption; “laws of the Commonwealth that unreasonably impair the right are unconstitutional.”⁴³⁰ Under the second and third clauses of the public trust provisions of Article I, § 27, the Commonwealth has two duties. One is “to prohibit the degradation, diminution, and depletion”⁴³¹ of a natural climate unaffected by human-caused climate disruption, whether harm to the climate results “from direct state action or from the actions of private parties.”⁴³² The other is “to act affirmatively via legislative action”⁴³³ to conserve the natural climate and prevent undue disruption.⁴³⁴ A third duty, which stems from the duty of private trust law duty of prudence, is that the Commonwealth must analyze the effect of its decisions on the public’s right to be protected against climate change prior to making them.⁴³⁵

The inclusion of a right to a natural climate not disrupted by GHG pollution has three additional consequences for the Commonwealth as it interprets and applies existing statutes, regulations, and other laws. These consequences, in which Article I, § 27 plays more of a supporting role in the implementation of existing law, are based on cases decided before *Robinson Township* and *PEDF*.⁴³⁶ The first of these involves the scope of the police power exercised by the state and local governments.⁴³⁷ As a consequence of *PEDF*, state and local police power is constrained by a duty not to violate Article I, § 27 and an obligation to properly implement the public trust responsibilities.⁴³⁸ These constraints and obligations apply to human-caused climate disruption. In addition, the Commonwealth has an obligation to interpret that law in a way that furthers constitutional rights when the meaning of a statute, regulation, or other law is unclear.⁴³⁹ As a result, the Commonwealth has an obligation to interpret ambiguous laws in a way that furthers the constitutional right of people to be protected against human-caused climate change. Finally, Pennsylvania courts have previously used Article I, § 27 to support the constitutionality of laws that have been challenged on other grounds, including challenges to executive action based on claims that the action lacked sufficient statutory authorization.⁴⁴⁰ It follows that legal challenges to Commonwealth actions to protect against climate disruption could be defended on the grounds that they are implementing Article I, § 27.

Affect the Next Generation? U.S. CATHOLIC (Oct. 2013) at 39, <http://www.uscatholic.org/articles/201309/how-will-climate-change-affect-next-generation-27900>.

428. *Robinson Twp. v. Commonwealth*, 83 A.3d 901, 980 (Pa. 2013) (plurality).

429. *Id.* at 959. Thus, legislative decisions under which “some properties and communities will carry much heavier environmental and habitability burdens than others” are inconsistent with the obligation that the trustee act for the benefit of “all the people.” *Id.* at 1007 (using this argument to justify its decision that Section 3304 of Act 13 violates Article I, § 27).

430. *Robinson Twp.*, 83 A.3d at 951; Pa. Envtl. Def. Found. v. Commonwealth, 161 A.3d 911, 931 (Pa. 2017).

431. *PEDF*, 161 A.3d at 933.

432. *Id.*

433. *Id.*

434. *Id.*

435. *Id.* at 937 (quoting *Payne v. Kassab*, 312 A.2d 86, 94 (Pa. Commw. Ct. 1973), *aff’d* 361 A.2d 263 (Pa. 1976)).

436. *Dernbach*, *supra* note 5 at 150-61.

437. *Id.* at 150-56; John C. Dernbach, *The Potential Meanings of a Constitutional Public Trust*, 45 ENVTL. L. 463, 515-16 (2015).

438. Pa. Envtl. Def. Found. v. Commonwealth, 161 A.3d 911, 938 (Pa. 2017).

439. *Dernbach*, *supra* note 5, at 156-58; 1 PA. CONS. STAT. § 1922 (1970) (“In ascertaining the intention of the General Assembly in the enactment of a statute the following presumptions, among others, may be used: . . . 3. That the General Assembly does not intend to violate the Constitution of the United States or of this Commonwealth.”).

440. *Dernbach*, *supra* note 5, at 158-61; *see, e.g.*, *Eagle Envtl. II, L.P. v. Commonwealth*, Dep’t of Envtl. Prot., 584 Pa. 494 (2005).

3. *Funk v. Wolf*

In *Funk v. Wolf*,⁴⁴¹ the plaintiffs asserted that the ERA imposed an affirmative duty on the Commonwealth to adopt and implement regulations to protect future generations from climate disruption, and that the court should grant mandamus requiring this.⁴⁴² The Commonwealth Court, affirmed by the Court, avoided deciding that issue. However, the Commonwealth Court appears to have assumed that prevention of climate disruption falls within the scope of Article 1, §27's rights and duties and that the Commonwealth had a duty to promulgate regulations "to reduce CO₂ and GHG emissions" pursuant to Pennsylvania Air Pollution Control Act (APCA).⁴⁴³ The Court further acknowledged that petitioners had a right to submit a rulemaking petition to the Pennsylvania Environmental Quality Board (EQB) seeking the adoption of a specific regulation under the APCA limiting GHG emissions, and that the EQB's action with respect to that petition would be subject to judicial review.⁴⁴⁴ The EQB is the Pennsylvania entity that adopts or modifies regulations that are implemented by DEP; DEP does not have authority to adopt its own regulations.⁴⁴⁵ As we discuss further in this article, the APCA authorizes the adoption of a regulation establishing an economy-wide cap-and-trade program with allowances distributed by auction with a reserve price. The EQB's refusal to consider such a regulation, or its adoption of an insufficiently protective regulation, could then be subject to judicial review and overturned.

The plaintiffs in *Funk* initially filed a petition with the EQB seeking the adoption of a regulation limiting GHG emissions to prevent undue climate disruption, without proposing a specific regulation or even a specific regulatory approach.⁴⁴⁶ Based on DEP's representation that it was already responding to climate disruption, the EQB denied the petition.⁴⁴⁷ In fact, DEP's actions were largely token efforts⁴⁴⁸ falling far short of the emissions reductions necessary to prevent climate disruption.⁴⁴⁹ Instead of appealing, the plaintiffs brought a mandamus action in the Commonwealth Court against the Commonwealth, the Governor of Pennsylvania, DEP and other agencies. The complaint sought declaratory relief regarding the plaintiffs' rights and the Commonwealth's duties under the ERA.⁴⁵⁰ It further sought injunctive relief that would require the Commonwealth to conduct various studies.⁴⁵¹ The complaint also sought a court order requiring DEP to study, and to prepare and implement:

441. *Funk v. Wolf*, 144 A.3d 228 (Pa. Commw. Ct. 2016) *aff'd without opinion*, 158 A.3d 642 (Pa. 2017).

442. *Id.* at 232-33.

443. *Id.* at 250.

444. *Id.* at 243.

445. 71 PA. CONS. STAT. § 510-20 (2018).

446. Acceptance of Rulemaking Petition for Study, 43 Pa. Bull. 7095 (Dec. 7, 2013); *Funk v. Wolf*, 144 A.3d 228, 243 (Pa. Commw. Ct. 2016) *aff'd without opinion*, 158 A.3d 642 (Pa. 2017).

447. Acceptance of Recommendation, 44 Pa. Bull. 5679 (Aug. 30, 2014).

448. PADEP's report upon which the EQB relied in denying the petition cited a number of actions in the Department's 2009 climate plan that the Department projected would decrease emissions between the base year 2005 and 2020 by under 10 million metric tons, or less than 3.6 percent over a fifteen-year period. See Pennsylvania Department of Environmental Protection Recommendation to the Pennsylvania Environmental Quality Board on the Ashley Funk Petition for Rulemaking to Reduce Carbon Dioxide Emissions (July 31, 2014), Figure 1 at 13, <http://files.dep.state.pa.us/PublicParticipation/Public%20Participation%20Center/PubPartCenterPortalFiles/Environmental%20Quality%20Board/2014/August%202019,%202014%20EQB%20meeting/Ashley%20Funk/1%20-%20DEP%20Recommendation.pdf>. While the Paris Agreement calls for reaching climate neutrality by the second half of this century to limit climate disruption, the rate of reduction from the 2009 Plan measures described in the Department's report would not achieve climate neutrality for over four centuries, well into the 25th Century. Indeed, the Department concedes that not all of the measures in the 2009 plan had been implemented. *Id.* at 30. That report also cited a number of other actions described in the 2013 climate plan update with no projection of emissions reductions. Many of these actions were federal actions undertaken by the Obama Administration, such as the Clean Power Plan and others constituted measures to reduce increased methane emissions from the shale gas expansion in Pennsylvania. The Petitioner described these reductions as "modest" and "self-congratulatory" "falling short of the Department's 'constitutional obligation.'" *Id.* at 25. The Department's report fails to provide any correlation between the emissions reductions it cites and the goal of keeping temperature increases below 2 degrees C. *Id.* at 28. In fact, that report specifically rejects the Petitioner's position that emissions should be reduced to zero by 2050. *Id.* at 38.

449. See discussion *supra* note 166.

450. *Funk v. Wolf*, 144 A.3d 228, 237 (Pa. Commw. Ct. 2016) *aff'd without opinion*, 158 A.3d 642 (Pa. 2017).

451. *Id.*

comprehensive regulations, in accordance with the current science, designed to account for embedded emissions and reduce carbon dioxide and other greenhouse gas emissions to safe levels and thereby reach the concentrations that must be achieved to satisfy [the Commonwealth defendants’] constitutional obligations as public trustees of the air and atmosphere.⁴⁵²

The Commonwealth Court held that it had jurisdiction to review the decision.⁴⁵³ In so holding, it reasoned, *inter alia*, that “we would have appellate jurisdiction over a final order of the EQB denying a rulemaking petition . . . , and a final order of the Environmental Hearing Board (EHB) denying an appeal of a DEP decision to not submit a rulemaking petition to the EQB”⁴⁵⁴ The Court also concluded that the plaintiffs had standing to bring the action.⁴⁵⁵

However, the Commonwealth Court ultimately dismissed the action because it found that there was not a sufficiently express mandatory duty that would trigger the remedy of mandamus.⁴⁵⁶ The Court’s decision was not premised upon an interpretation of Article I, §27, but on the narrow scope of the remedy of mandamus:

Mandamus is an extraordinary remedy “designed to compel the performance of a ministerial act or mandatory duty, as opposed to a discretionary act. . . .” Mandamus cannot be used to direct the exercise of judgment or discretion in any particular way. . . . Nor will it issue to establish legal rights. . . .”We may issue a writ of mandamus only where the petitioner has a clear legal right to enforce the performance of a ministerial act or mandatory duty, the defendant has a corresponding duty to perform the act[,] and the petitioner has no other adequate or appropriate remedy. . . .”⁴⁵⁷

In this regard, the Court found that the question presented in considering a writ of mandamus was not “whether the ERA imposes mandatory duties in the general sense, but whether the ERA provides . . . a clear right to the performance of the specific acts” requested and “whether the[ir] performance . . . is mandatory.”⁴⁵⁸ The Court reasoned that the remedy of mandamus could not be invoked to expand the authority of executive agencies. It also explained that a judicially enforceable mandatory duty required legislation creating such a mandate, which the Court found lacking.⁴⁵⁹

Although the Court’s ultimate decision was premised upon the scope of relief that could be awarded by a court under the narrow equitable writ of mandamus, the decision also relied upon the application of the three-part balancing test that unduly limited the scope of the ERA, and which the *PEDF* Court expressly rejected.⁴⁶⁰ Consequently, the Commonwealth Court in *Funk* appears to have overstated the discretion afforded to both the General Assembly and the executive branch and to have understated the scope of the duties imposed by the ERA and the role of the judicial branch in enforcing those duties. It did so by effectively saying that compliance with the ERA requires executive agencies only to follow the law prescribed by the General Assembly.⁴⁶¹

Even under the unduly circumscribed three-part balancing test employed in *Funk*, the decision can be read to support the proposition that there is an enforceable duty to adopt a GHG emission regulation under the APCA, if the regulation is presented to the EQB in a detailed petition. The Commonwealth Court noted that “Respondents further acknowledge that the General Assembly, through the APCA, bestowed upon them a duty to promulgate and implement rules and regulations to reduce CO₂ and GHG emissions.”⁴⁶²

452. *Id.* at 238.

453. *Id.* at 241-243.

454. *Id.* at 243.

455. *Id.* at 248.

456. *Id.* at 251-52.

457. *Id.* at 248 (citations omitted).

458. *Id.*

459. *Id.* at 248-250.

460. *Pa. Env'tl. Def. Found. v. Commonwealth*, 161 A.3d 911, 930 (Pa. 2017) (rejecting three-part test because it “strips the constitutional provision of its meaning.”); *see Funk v. Wolf*, 144 A.3d 228, 234 (Pa. Commw. Ct. 2016) *aff'd without opinion*, 158 A.3d 642 (Pa. 2017).

461. *See, e.g., Funk*, 144 A.3d at 235 (“[T]he balance between environmental and other societal concerns is primarily struck by the General Assembly, as the elected representatives of the people, through legislative action.”).

462. *Id.* at 250. In a footnote, the Court elaborated on the source of this duty, noting that the Commonwealth’s

Consequently, even in applying the unduly constrained test rejected by the Court in *PEDF*, the Commonwealth Court in *Funk* appears to conclude that the ERA creates rights and general duties, that there are specific duties for the EQB to consider a petition with an attached rule, and that there is a duty to adopt regulations addressing climate change under the APCA. The Commonwealth Court noted that if a proposal for a specific rule to address GHG emissions had been submitted to the EQB, the EHB would have had jurisdiction to review the EQB's final action denying the petition and the Commonwealth Court would have had jurisdiction to review the order of the EHB:

While we agree that we would have appellate jurisdiction over a final order of the EQB denying a rulemaking petition. . . , and a final order of the Environmental Hearing Board (EHB) denying an appeal of a DEP decision to not submit a rulemaking petition to the EQB. . . , we would not have appellate jurisdiction over the instant matter.⁴⁶³

EQB regulations prescribe a process for filing such a petition with the EQB and the EQB's consideration of the petition.⁴⁶⁴ Following any denial of such a petition, a petitioner could bring an action for declaratory and injunctive relief.⁴⁶⁵ Consequently, a petitioner could ask the EQB to promulgate a rulemaking to address greenhouse gases, and any denial of such a petition would be subject to judicial review. The Court's analysis in *PEDF* only reinforces the conclusion that the Commonwealth's duty to adopt such a regulation is both mandatory and judicially enforceable.

IV. THE COMMONWEALTH'S DUTY TO PREVENT AND MITIGATE HUMAN-CAUSED CLIMATE DISRUPTION REQUIRES THAT PENNSYLVANIA UNDERTAKE MEASURES TO REDUCE GHG EMISSIONS TO THE LEVEL WARRANTED BY THE SOCIAL COST OF CARBON AND TO ACHIEVE CARBON NEUTRALITY BY MID-CENTURY

Because a stable climate not disrupted by human caused GHG emissions is a right protected under the ERA's first clause and a public natural resource for which the Commonwealth is a trustee, the ERA's text directs that the Commonwealth shall "conserve and maintain" that stable climate for "all the people, including generations yet to come."⁴⁶⁶ Neither the text of the ERA nor the law of trusts provides additional guidance on concentrations of GHGs in the atmosphere that will conserve the climate, the trajectory of emissions reductions necessary to avoid exceeding that concentration, or Pennsylvania's responsibility *vis-à-vis* the rest of the world. Pennsylvania's contribution to GHG emissions exceeds that of most nations.⁴⁶⁷ If states were counted as nations, Pennsylvania would have ranked as the

duties to this end derive, in part, from Section 5(a)(8) of the APCA, 35 P.S. § 4004(1), which requires the EQB to adopt rules and regulations to implement the federal Clean Air Act, 42 U.S.C. §§ 7401–7671q. The United States Supreme Court, in *Massachusetts v. Env'tl. Prot. Agency*, 549 U.S. 497, 528-29 (2007), had "little trouble" concluding that GHGs are "air pollutants" as defined by the Act and that the Environmental Protection Agency may regulate GHGs.

Id. at 250, n.17.

463. *Id.* at 243.

464. See 25 PA. CODE §§ 23.1-8 (2000).

465. See *Marcellus Shale Coal. v. Dep't of Env'tl. Prot.*, 2016 Pa. Commw. Unpub. LEXIS 830 *62-63; 46 ELR 20179 (2016) (granting petition for review in part, in industry's action for declaratory and injunctive relief with respect to newly proposed oil and gas regulations). There would be no adequate remedy requiring such a petitioner to wait for PADEP to take some action that would be appealable to the Environmental Hearing Board. See *Arsenal Coal Co. v. Commonwealth*, 505 Pa. 198, 209-10 (1984) (Commonwealth Court erred in declining to exercise equitable jurisdiction over industry's petition to enjoin the Department of Environmental Resources from implementing or enforcing regulations promulgated by the EQB, where the internal administrative process would subject the industry to litigation and regulatory uncertainty). *A fortiori*, if there is no adequate remedy for an industry that must undertake litigation and experience regulatory uncertainty during a post-enforcement proceeding by PADEP, there is no adequate remedy for a petitioner seeking a rulemaking to address GHG emissions that is never even promulgated in the first place.

466. PA. CONST. art. I, §27.

467. See Robert B. McKinstry, Jr., Adam Rose, & Coreen Ripp, *Incentive-Based Approaches to Greenhouse Gas Mitigation in Pennsylvania: Protecting the Environment and Promoting Fiscal Reform*, 14 WIDENER L.J. 205, 217 (2004) (citation omitted).

sixteenth highest emitter in 2003.⁴⁶⁸ Nevertheless, its actions alone will be insufficient to “conserve and maintain” the climate.⁴⁶⁹

Finally, the ERA does not tell us how Pennsylvania should exercise its duty to prevent climate disruption. At a minimum, one might argue that the constitutional standard requires Pennsylvania to do as much as it can, using existing authority. One can look to other sources of authority defining what is required to “conserve and maintain” a stable climate, Pennsylvania’s share of responsibility, and the means that can be employed. Specifically, as we discuss below, binding treaty law and other federal law define the temperature and concentration goals and Pennsylvania’s share. As recognized by the *Funk* decision, the APCA provides available tools for limiting emissions.⁴⁷⁰ Those tools can be defined in a properly framed regulation presented by way of a petition to the EQB.⁴⁷¹ The EQB’s action on that petition can be subject to judicial review under the equitable writ of *certiorari* rather than *mandamus*.⁴⁷² As further described below, whether framed as the “as much as it can” standard or a standard incorporating these other sources of authority, at a minimum the mechanism should include a trading program that reduces emissions to the level warranted by the social cost of carbon and ultimately to achieve carbon neutrality by mid-century.

A. *The United Nations Framework Convention on Climate Change and the Federal Clean Air Act Provide Judicially Ascertainable Standards Governing the Extent of Reductions Required to Conserve and Maintain a Stable Climate and Pennsylvania’s Relative Responsibility*

A judicially ascertainable standard for determining the emissions reductions required to conserve and maintain the climate is provided by an international treaty ratified by the United States, the United Nations Framework Convention on Climate Change (UNFCCC),⁴⁷³ the Paris Agreement⁴⁷⁴ adopted pursuant to that Convention, and the body of internationally-accepted scientific evidence endorsed by the nations of the world pursuant to the UNFCCC

468. *Id.*

469. Pennsylvania’s gross GHG emissions in 2013 totaled 305.75 million metric tons. *See* PA. DEP’T OF ENVTL. PROT., PENNSYLVANIA GREENHOUSE GAS INVENTORY 2016 4 (2016), [http://files.dep.state.pa.us/Air/AirQuality/AQPortalFiles/Advisory%20Committees/CCAC/Docs/Inventory-2016_1-18-17_\(final\).pdf](http://files.dep.state.pa.us/Air/AirQuality/AQPortalFiles/Advisory%20Committees/CCAC/Docs/Inventory-2016_1-18-17_(final).pdf). *See also* Massachusetts v. Env’tl. Prot. Agency, 549 U.S. 497, 524-25 (2007). The Supreme Court rejected EPA’s argument that regulation of automobile emissions in the United States, which then totaled 1.7 billion metric tons of carbon dioxide and represented “more than 6% of worldwide carbon dioxide emissions” would fail to meet the “causation” element of standing. The Court reasoned that the fact “[t]hat a first step might be tentative does not by itself support the notion that federal courts lack jurisdiction to determine whether that step conforms to law.” The Court further reasoned that “[j]udged by any standard, U.S. motor-vehicle emissions make a meaningful contribution to greenhouse gas concentrations and hence, according to petitioners, to global warming.” *Id.* at 525.

470. *Funk v. Wolf*, 144 A.3d 228, 250 n.17 (Pa. Commw. Ct. 2016), *aff’d without opinion*, 158 A.3d 642 (Pa. 2017).

471. 25 PA. CODE § 23.1.

472. *Funk*, 144 A.3d at 242-43.

473. United Nations Framework Convention on Climate Change, June 4, 1992, 1771 U.N.T.S. 107, http://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf. (providing a general framework for the international reduction of GHG emissions).

474. United Nations Framework Convention on Climate Change, *The Paris Agreement*, Dec. 12, 2015, http://unfccc.int/paris_agreement/items/9485.php [hereinafter *The Paris Agreement*]. President Trump announced his intent to withdraw the United States from the Paris Agreement. Donald J. Trump, *Statement by President Trump on the Paris Climate Accord.*, THE WHITE HOUSE (June 1, 2017), <https://www.whitehouse.gov/briefings-statements/statement-president-trump-paris-climate-accord/>. However, that announcement will be ineffective with respect to Pennsylvania’s interpretation of the ERA and likely will also be ineffective with respect to federal law. First, no withdrawal can take effect until November 2020, because parties are not entitled to withdraw until three years after the Agreement entered into force and withdrawal does not take effect until one year after the withdrawal. *The Paris Agreement*, art. 28. Second, the Paris Agreement merely interprets the UNFCCC, from which the United States has not withdrawn, and which remains therefore binding law under Article III of the Constitution. Finally, the pertinent requirements of the UNFCCC as interpreted by the UNFCCC are likely now customary international law that will be binding on the United States and its states notwithstanding the United States’ withdrawal. Robert B. McKinstry, Jr., Thomas D. Peterson & Steven Chester, *Unlocking Willpower Part Two*, 47 ENVTL. L. REP. (Env’tl. Law Inst.) 10135, 10137-10138 (2017); *see also* Robert B. McKinstry, Jr., *What Really Happened? Implications of President Trump’s Announcement on U.S. Withdrawal From the Paris Agreement and the Law of Unintended Consequences*, BALLARD SPAHR at 1-2 (July, 2017), https://response.ballardspahr.com/email_handler.aspx?sid=5427bed1-f563-45e1-8cb1-74758039dace&redirect=http%3a%2f%2fwww.ballardspahr.com%2f%7e%2fmedia%2ffiles%2fArticles%2fWhat_Really_Happened (It is important to note that even if the Paris Agreement’s definition of the intent of the UNFCCC to prevent “dangerous anthropogenic interference with the climate system” should not be considered binding law, the international scientific consensus reflected in the Paris Agreement can equally define the emissions reductions required to fulfill the Commonwealth’s duty as a trustee to conserve and maintain a stable climate.).

and the Paris Agreement. Pennsylvania's share of the reductions is governed by the federal Clean Air Act.⁴⁷⁵ Under the Supremacy Clause of the United States Constitution, Pennsylvania is bound to interpret its constitution consistent with treaties which, along with the United States Constitution and federal laws, constitute the "supreme Law of the Land" that binds state courts.⁴⁷⁶

The objective of the UNFCCC is the "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."⁴⁷⁷ While the Convention does not further identify what that level is, the 2015 Paris Agreement does.⁴⁷⁸ In the run-up to the Paris Conference, the Conference of the Parties translated the Framework Convention's stabilization objective into a maximum permissible surface temperature increase. The most frequently stated goal was 2°C (or 3.6 degrees Fahrenheit) above preindustrial levels.⁴⁷⁹ Reflecting the evolving scientific consensus on the temperature rise at which serious climate disruption will occur, the Paris Agreement aims to hold "the increase in the global average temperature to well below 2°C above pre-industrial levels."⁴⁸⁰ The parties also agreed "to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change."⁴⁸¹

Also reflecting the scientific consensus of the nations of the world, the Paris Agreement further defines the emissions reductions required to keep temperatures below those thresholds by requiring that the Parties "achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century."⁴⁸² If the entire world needs to reach a point where emissions of GHGs are no greater than their removal by GHG sinks by the second half of this century, Pennsylvania will also need to achieve that balance by that time. Therefore, at a minimum, Pennsylvania must develop an emissions reduction trajectory that reduces net emissions to zero, meaning the elimination of all GHG emissions other than those geologically or biologically returned to sinks (*i.e.* sequestered) by the second half of the 21st century. Because Pennsylvania's GHG emissions are disproportionately higher than most of the rest of the world, Pennsylvania should achieve that goal by mid-century.

This goal furthers the UNFCCC requirement that the developed nations take the lead in reducing emissions, enacting policies to limit emissions, and enhance carbon sinks.⁴⁸³ These policies are to be precautionary, comprehensive and "cost-effective so as to ensure global benefits at the lowest possible cost . . . and comprise all economic sectors."⁴⁸⁴ There is a scientific consensus, reflected in a growing number of state and local emissions

475. See generally Clean Air Act 42 U.S.C. § 7401-7671.

476. See U.S. CONST. art. VI, cl.2. The *Charming Betsy* doctrine, requiring that federal law be construed consistent with the "law of nations," should be equally binding with respect to the interpretation of state constitutional law. *Murray v. Schooner Charming Betsy*, 6 U.S. 64, 118 (1804).

477. UNFCCC, *supra* note 191, art. 2.

478. *The Paris Agreement*, *supra* note 192, art. 2, § 1 (This Agreement, in enhancing the implementation of the Convention, including its objective, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by: . . . (a) Holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change."); see also *id.* at art. 4 § 1 ("In order to achieve the long-term temperature goal set out in Article 2, Parties aim to reach global peaking of greenhouse gas emissions as soon as possible, recognizing that peaking will take longer for developing country Parties, and to undertake rapid reductions thereafter in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century").

479. See, e.g., United Nations Framework Convention on Climate Change, *Report of the Conference of the Parties on its Sixteenth Session, Held in Cancun from 29 November to 10 December 2010*, ¶ 4, U.N. Doc. 1/CP.16, FCCC/CP/2010/7/Add.1 (Mar. 15, 2011), <http://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf>.

480. United Nations Framework Convention on Climate Change, *Conference of the Parties*, Decision 1/CP.21, art. 2.1(a), U.N. Doc. FCCC/CP/2015/L.9/Rev.1 (2015), <https://unfccc.int/resource/docs/2015/cop21/eng/109r01.pdf>.

481. *Id.*

482. *Id.* art. 4, § 1.

483. UNFCCC, *supra* note 191, art. 3, § 1; art. 3 § 3; art. 4, § 2(a); *The Paris Agreement*, *supra*, note 192, art. 4, § 4.

484. UNFCCC, *supra* note 191, art. 3, § 3; see *The Paris Agreement*, *supra* note 192, art. 4, § 4 (requiring the United States and other developed country parties to take the lead in achieving the necessary reductions); UNFCCC, *supra* note 191, art. 4, § 2(a)(calling for the adoption of "policies and take corresponding measures on the mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs"); UNFCCC, *supra* note 191, art. 3, § 2 (requiring each nation to consider impacts beyond those within its borders, considering "the specific needs and special circumstances of developing country Parties, especially those that are particularly vulnerable to the adverse effects of climate change").

reduction goals, that developed nations need to reduce their total economy-wide emissions by at least 80% from 1990 levels by 2050.⁴⁸⁵ Moreover, a growing number of studies, including a study by the World Bank, have concluded that this goal is achievable.⁴⁸⁶

The provisions of the federal Clean Air Act governing the obligations of states support the proposition that Pennsylvania should consider these treaty obligations in construing its obligations as a trustee under Article I, § 27. Section 115 of the Clean Air Act is triggered whenever the EPA finds air pollution originating within a state “cause[s] or contribute[s] to air pollution which may reasonably be anticipated to endanger public health or welfare in a foreign country.”⁴⁸⁷ When that happens, the EPA must require the state to submit an amendment to the “good neighbor” provision of its state implementation plan⁴⁸⁸ that will “prevent or eliminate the endangerment.”⁴⁸⁹ In its endangerment finding, EPA found that emissions of GHGs within the United States endanger health and the environment in other nations.⁴⁹⁰ Virtually all other nations of the world are parties to the UNFCCC and the Paris Agreement, which provides the United States reciprocal rights with respect to the prevention and control of greenhouse gases.⁴⁹¹ These facts trigger

485. Cal. Exec. Order No. B-30-15 (Apr. 29, 2015), <https://www.gov.ca.gov/2015/04/29/news18938/>; Conn. Exec. Order No. 46 P1 (2015); Colo. Exec. Order No. D 004 08 §1 (Apr. 22, 2008); MASS. GEN. LAWS ch. 21N, § 3(b)(4); Mich. Exec. Dir. 2009-4 Section II; 2015 Minn. Laws 216H.02 subd 1; N.J. STAT. ANN. § 26:2C-38 (West 2009); N.Y. Exec. Order No. 24 (2009), <https://www.dec.ny.gov/energy/71394.html>; 42 R.I. GEN. LAWS §42-6.2-2(a)(C) (2014).

486. MARIANNE FAY ET AL., INT’L BANK FOR RECONSTRUCTION AND DEV./THE WORLD BANK, DECARBONIZING DEVELOPMENT: THREE STEPS TO A ZERO-CARBON FUTURE 96 (2015), <http://www.worldbank.org/content/dam/Worldbank/document/Climate/dd/decarbonizing-development-report.pdf>; JEFFREY SACH, ET AL., SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK AND THE INST. FOR SUSTAINABLE DEV. AND INT’L RELATIONS, PATHWAYS TO DEEP DECARBONIZATION IX (Emmanuel Guérin, et al. eds. 2014), http://unsdsn.org/wp-content/uploads/2014/09/DDPP_Digit_updated.pdf; see also John C. Dernbach, *Creating Legal Pathways to a Zero Carbon Future*, in CONTEMPORARY ISSUES IN CLIMATE CHANGE LAW AND POLICY: ESSAYS INSPIRED BY THE IPCC 21 (Robin Kundis Craig & Stephen R. Miller eds., Environmental Law Institute, 2016).

Because the endpoint will be carbon neutrality, this will be required of Pennsylvania under any scenario.

487. 42 U.S.C. § 7415 (a) (2016).

488. 42 U.S.C. § 7410(a)(2)(H)(ii) (2016).

489. *Id.* §7415(b) (2015).

490. Endangerment Finding, *supra* note 82 at 66,514 (The EPA made the finding in connection with its determination that the impacts of climate change in foreign nations would, in turn, endanger health and welfare within the United States:

EPA is not considering international effects to determine whether the health and welfare of the public in a foreign country is endangered. Instead, EPA’s consideration of international effects for purposes of determining endangerment is limited to how those international effects impact the health and welfare of the U.S. population);

Id. The precise nature of the Administrator’s finding regarding international effects is set forth in the proposed finding, which the Administrator adopted in the final action:

On a global basis, according to the IPCC, projected climate change-related impacts are likely to affect the health of millions of people, particularly those with low adaptive capacity, as a result of a number of factors including increased cardio respiratory diseases due to higher concentrations of ground level ozone brought on by higher temperatures, and by more frequent and intense heat waves. Food production is expected to be much more vulnerable to climate change in poorer regions of the world compared to food production in the U.S. The IPCC also identified that the coasts around the world are experiencing the adverse consequences of hazards related to climate and sea level. Coastal settlements are highly vulnerable to extreme events, such as storms which impose substantial costs on coastal societies. Ecosystems and species around the world are very likely to show a wide range of vulnerabilities to climate change, depending on the extent to which climate change alters conditions that could cross critical thresholds. The most vulnerable ecosystems include coral reefs, sea-ice ecosystems, high-latitude boreal forests, and mountain ecosystems where there is no possibility of migrating to adapt to climate change.

Climate change impacts in certain regions of the world may exacerbate problems that raise humanitarian, trade and national security issues for the U.S. Climate change has been described as a potential threat multiplier regarding national security issues. This is because, as noted above, climate change can aggravate existing problems in certain regions of the world such as poverty, social tensions, general environmental degradation, and conflict over increasingly scarce water resources.

Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 18886, 18903 (April 24, 2009). Although the Administrator stated that she was not making a foreign endangerment finding, these factual determinations regarding effects in foreign nations underlying her determination that these effects would cause endangerment in the United States effectively constitute a finding that GHG emissions in the United States cause or contribute to endangerment in other nations.

491. See *Status of Ratification of the Convention*, UNITED NATIONS, <https://unfccc.int/process/the-convention/what-is-the-convention/status-of-ratification-of-the-convention> (196 nations and 1 regional economic integration organization are Parties) (last visited April 17, 2018); UNFCCC

the obligation to reduce GHG emissions to prevent endangerment in other nations within the meaning of section 115.⁴⁹² Further, the Clean Air Act’s good neighbor provision requires that each state implementation plan include “adequate provisions . . . insuring compliance with the requirements of section. . . [115] of this title (relating to. . . international air pollution).”⁴⁹³ Although EPA has not issued a call for states to submit state implementation plans (SIPs) to reduce GHG emissions under section 115, the predicates triggering the mandatory obligation to do so exist. Thus, Pennsylvania’s obligations under the Clean Air Act’s good neighbor provision also exist. These create an obligation for Pennsylvania, as a fiduciary under the ERA, to take action to reduce emissions to prevent endangerment of foreign nations from GHG pollution consistent with the good neighbor provision.

B. *Pennsylvania’s Obligation as a Trustee Should Require that GHG Emissions Be Limited to the Extent Consistent with the Social Cost of Carbon and to Achieve Carbon Neutrality by Mid-Century*

A regulatory program that is designed to take all measures reasonably necessary to conserve the corpus of the environmental trust resource for the benefit of the trust’s beneficiaries will most closely hew to the intent and text of the ERA as interpreted in *PEDF* and the *Robinson Township* plurality. That program should therefore employ all measures reasonably necessary to conserve a stable climate and the public environmental resources it supports. As explained further below, this can be best accomplished by putting a price on emissions of GHGs at least equal to the social cost of carbon and by recovering the value of that emissions price as income for the beneficiaries of the trust. We will explain below the derivation of this “social cost of carbon” and its relevance to Pennsylvania’s constitutional obligations as a trustee under the ERA.

1. The Relationship of the Social Cost of Carbon to Pennsylvania’s Obligations as a Trustee

In economic theory, the impacts of climate disruption represent “externalities” of the emissions of GHGs that are not reflected in the market price of the products whose manufacture produces those emissions.⁴⁹⁴ Under that theory, those who emit GHGs are appropriating the resources they damage without paying for the damage. Principles of economic efficiency, as well as equity, require that those responsible for the damage pay for it and that the damage be reflected in the price of the goods whose manufacture will cause the damage. If the cost of reducing emissions is less than the cost of the damages avoided, the emitter will reduce the emissions, creating a net increase in social welfare; the market will therefore favor activities that do not emit the GHGs that cause the damage.⁴⁹⁵ The “social cost of carbon” is a measure of the future estimated cost or damage resulting from the emission of a metric ton of carbon

Status as of 17-04-2018, UNITED NATIONS TREATY COLLECTION, https://treaties.un.org/Pages/ViewDetailsIII.aspx?src=IND&mtdsg_no=XXVII-7&chapter=27&Temp=mtdsg3&clang=en (last visited July 9, 2018); *Paris Agreement – Status of Ratification*, UNITED NATIONS, <https://unfccc.int/process/the-paris-agreement/status-of-ratification> (175 Parties have ratified of 197 Parties to the Convention) (last visited Apr. 17, 2018); *Paris Agreement Status as at 17-04-2018*, UNITED NATIONS TREATY COLLECTION, https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7-d&chapter=27&clang=en (last visited July 4, 2018). See *The Paris Agreement* art. 2 §1 (a), art. 3, art. 4 §1 (Article 3 of the Paris Agreement calls for all Parties “to undertake and communicate ambitious efforts” as defined further in the Agreement “with the view to achieving the purpose of the Agreement as set out in Article 2,” viz. limiting GHG emissions to hold “the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels” by achieving net emissions neutrality by the second half of the century. Thus, there are reciprocal rights and obligations to reduce emissions among the 175 parties to the Agreement.). See generally Michael Burger et. al., *Legal Pathways to Reducing Greenhouse Gas Emissions Under Section 115 of the Clean Air Act*, UCLA School of Law, Public Law Research Paper No. 16-11 (Jan. 2016), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2742366.

492. See *Her Majesty the Queen in Right of Ontario v. Env’tl. Prot. Agency*, 912 F.2d 1525, 1528 (D.C. Cir. 1990); see also McKinstry, Peterson & Chester, *supra* note 192, at 10142.

493. 42 U.S.C. §7410(a)(2)(D)(ii) (2012).

494. NAT’L RESEARCH COUNCIL, *HIDDEN COSTS OF ENERGY: UNPRICED CONSEQUENCES OF ENERGY PRODUCTION AND USE* 28-29 (2010).

495. *Id.* at 32; see McKinstry, Rose, & Ripp, *supra* note 185, at 214-221; see also SAMUEL A. NEWELL ET. AL., N.Y. DEP’T. OF PUB. SERV., N.Y. INDEP. SYS. OPERATOR, *PRICING CARBON INTO NYISO’S WHOLESALE ENERGY MARKET TO SUPPORT NEW YORK’S DECARBONIZATION GOALS 3* (2017), https://www.energymarketers.com/Documents/Brattle_study_carbon_pricing.pdf.

today; imposing that cost on carbon emissions today will shift economic activity to other activities that do not result in that cost or damage.⁴⁹⁶

There have been a number of efforts to calculate this “social cost of carbon.” Because a series of Executive Orders required that federal agencies prepare cost-benefit analyses to assess the impact of regulatory actions, the United States convened an interagency task force to determine this “social cost of carbon,” producing reports in 2010 and 2016.⁴⁹⁷ Based on updated data on the damages caused by climate disruption, the 2016 report calculated a variety of values representing the average and high cost of GHG emissions for different time periods and discount rates.⁴⁹⁸ As action is delayed, the social cost of carbon increases because the damage is greater, more imminent, discounted less.⁴⁹⁹ The 2016 report calculated that the average social cost of carbon in 2020 (using a discount rate of 3%) is \$42/ton, but that the 95th percentile (high) cost would be \$123/ton. In 2050, these figures increase to \$69/ton and \$212/ton.⁵⁰⁰ These costs represent the marginal cost of avoiding future damage from the emission of a ton of carbon in any given year and they, therefore, do not include the damage that will already occur as a result of past emissions.⁵⁰¹

Federal agencies, states, and federal courts have relied upon the social cost of carbon in determining which measures should be employed to prevent GHG emissions. Prior to 2017, federal agencies routinely relied upon the social cost of carbon developed by the expert panel in cost-benefit analyses.⁵⁰² The Seventh Circuit specifically

496. NAT’L RESEARCH COUNCIL, *supra* note 212, at 60.

497. See Regulatory Planning & Review, 58 Fed. Reg. 51735 (Sept. 30, 1993) (requiring agencies, to the extent permitted by law, “to assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs”); INTERAGENCY WORKING GROUP ON SOCIAL COST OF CARBON, TECHNICAL SUPPORT DOCUMENT: SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER 12866 (2010), https://19january2017snapshot.epa.gov/sites/production/files/2016-12/documents/sc_csd_2010.pdf; INTERAGENCY WORKING GROUP ON SOCIAL COST OF GREENHOUSE GASES, TECHNICAL SUPPORT DOCUMENT: TECHNICAL UPDATE OF THE SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER 12866 (2016), https://19january2017snapshot.epa.gov/sites/production/files/2016-12/documents/sc_co2_tsd_august_2016.pdf [hereinafter 2016 SCC]; INTERAGENCY WORKING GROUP ON SOCIAL COST OF GREENHOUSE GASES, ADDENDUM TO TECHNICAL SUPPORT DOCUMENT ON SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER 12866: APPLICATION OF THE METHODOLOGY TO ESTIMATE THE SOCIAL COST OF METHANE AND THE SOCIAL COST OF NITROUS OXIDE (2016), https://19january2017snapshot.epa.gov/sites/production/files/2016-12/documents/addendum_to_sc_ghg_tsd_august_2016.pdf. See *Presidential Order on Promoting Energy Independence and Economic Growth*, 82 Fed. Reg. 16093 (March 31, 2017). President Trump has issued an Executive Order directing the withdrawal of the social cost of carbon guidance. However, that Order has no binding legal effect standing alone and there are cogent reasons to believe that, if it were applied, that application would not withstand judicial review. The guidance represented the peer-reviewed consensus of a group of scientific and economic experts. The conclusions can no more be undone by unilateral executive fiat than can the conclusions of any other expert report.

498. 2016 SCC, *supra* note 215 at 4.

499. See ENVTL. PROT. AGENCY, FACT SHEET, SOCIAL COST OF CARBON 2 (2016), https://19january2017snapshot.epa.gov/sites/production/files/2016-12/documents/social_cost_of_carbon_fact_sheet.pdf [hereinafter EPA SCC FACT SHEET].

500. 2016 SCC, *supra* note 215 at 4, Table ES-1.

Bob Litterman, one of the world’s leading economists on pricing risk suggests that the failure of the calculations of the social cost of carbon to incorporate high damage-low probability events results in a lower cost estimates and emphasizes that delay in mitigation by fifteen years will triple the social cost of carbon. Bob Litterman, Kent Daniel & Gernot Wagner, *Applying Asset Pricing Theory to Calibrate the Price of Climate Risk* 43 (March 15, 2017), https://globalriskinstitute.org/wp-content/uploads/2017/05/GRI_Asset-Pricing-Climate-Risk_Mar-15-2017-Litterman.pdf.

501. EPA SCC FACT SHEET, *supra* note 217 at 1 (“The SC-CO₂ is a measure, in dollars, of the long-term damage done by a ton of carbon dioxide (CO₂) emissions in a given year. This dollar figure also represents the value of damages avoided for a small emission reduction (*i.e.*, the benefit of a CO₂ reduction).”)

502. For example, the EPA SCC Fact Sheet that accompanied the release of the 2016 SCC gave the following examples of EPA’s use of the SCC in rulemakings:

EPA has used the interagency group recommended estimates of the SC-CO₂ to analyze the carbon dioxide impacts of various rulemakings since 2010. Examples of these rulemakings include:

- The Joint EPA/Department of Transportation Rulemaking to establish Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards (2012-2016)
- Amendments to the National Emission Standards for Hazardous Air Pollutants and New Source Performance Standards (NSPS) for the Portland Cement Manufacturing Industry
- Regulatory Impact Results for the Reconsideration Proposal for National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters at Major Sources

approved this use of that social cost of carbon in promulgating energy efficiency regulations in *Zero Zone v. Department of Energy*.⁵⁰³ Both Illinois and New York relied upon the federally-determined social cost of carbon in the development of zero emissions credit (ZEC) programs to “encourage the preservation of the environmental values or attributes of zero-emissions nuclear-powered electric generating facilities for the benefit of the electric system, its customers and environment.”⁵⁰⁴ These programs provide assurances that the electricity generators will receive value equivalent to the avoided cost of carbon emissions calculated using the federal social cost of carbon.⁵⁰⁵ Both programs have been survived a variety of challenges.⁵⁰⁶

Although President Trump has issued an Executive Order withdrawing the federal social cost of carbon,⁵⁰⁷ that action should not preclude state reliance on the expert determinations underlying that metric. It is also doubtful that the President can reverse the determination of a panel of scientific experts by administrative fiat, particularly where regulations based on the scientific determination have been upheld on judicial review and the derivation of the metric is consistent with principles of international law.⁵⁰⁸

The social cost of carbon has several implications with respect to the Commonwealth’s duties as a trustee under the reasoning of *Robinson Township* and *PEDF*. First, allowing emissions to continue unabated will increase the damage to the corpus of the trust.⁵⁰⁹ If a price is put on the emissions equal to the social cost of carbon, or emitters are otherwise required to implement all emissions reductions up to that cost, the damage to the corpus of the trust will be avoided consistent with the duty to “conserve and maintain” the trust corpus. Second, the social cost of carbon provides a way of measuring the cost of damage from climate change, including damage to public natural resources, through state actions allowing unregulated emissions of GHGs. Third, the Commonwealth’s duty to “act affirmatively via legislative action to protect the environment,”⁵¹⁰ suggests that the state could use a mechanism like the social cost of

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- Proposed National Emission Standards for Hazardous Air Pollutants (NESHAP) for Mercury Emissions from Mercury Cell Chlor Alkali Plants
 - Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Commercial and Industrial Solid Waste Incineration Units Standards
 - Final Mercury and Air Toxics Standards
 - Joint EPA/Department of Transportation Rulemaking to establish Medium- and Heavy - Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards
 - Proposed Carbon Pollution Standard for Future Power Plants
 - Joint EPA/Department of Transportation Rulemaking to establish 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards.

EPA SCC FACT SHEET, *supra* note 217 at 4-5

503. *Zero Zone v. Dep’t of Energy*, 832 F.3d 654, 677 (7th Cir. 2016).

504. *Coal. for Competitive Elec. v. Zibelman*, 272 F. Supp. 3d 554, 561 (S.D.N.Y. 2017), *aff’d* No. 17-2654-cv (2d Cir. Sept. 27, 2018) (quoting CES Order, App’x E, at 1).

505. *Id.* at 562. Specifically, “the price of each ZEC is the social cost of carbon less the generator’s putative value of avoided greenhouse gas emissions less the amount of the forecast energy price.”

506. *Village of Old Mill Creek v. Star*, 2017 WL 3008289, No. 17 CV 1163 and 1164 (N.D. Ill. July 14, 2017), *aff’d* sub nom *Electric Power Supply Ass’n v. Star*, Nos. 17-2433 & 17-2445 (7th Cir. Sept. 13, 2018) (upholding Illinois program); *Zibelman*, 272 F. Supp. at 561, *aff’d* No. 17-2654-cv (2d Cir. Sept. 27, 2018) (upholding New York program). Although both programs are under appeal, the use of the federal social cost of carbon is not an issue in those appeals.

507. *See* Exec. Order No. 13,783, 82 Fed. Reg. 16093 (Mar. 31, 2017).

508. The action is reminiscent of apocryphal story King Canute’s attempt to hold back the tides cited in *Diamond v. Chakrabarty*, 447 U.S. 303, 317 (1980). The Regulatory Impact Statement supporting EPA’s proposal to withdraw the Clean Power Plan uses a much lower social cost of carbon based on a limitation of consideration of damages to those that will occur only within the United States. This appears to be directly contrary to the UNFCCC’s principle applicable to all parties set forth in Article 3, section 3 directing that rules “should be cost-effective so as to ensure global benefits at the lowest possible cost.” In other words, cost-effectiveness should consider global benefits in the form of reduced global damages rather than limiting that consideration to the benefits accruing to an individual nation or, in the case of Pennsylvania, state. A recent peer-reviewed study calculated a social cost of carbon based on U.S. damages alone to approach \$48/ton. Katharine Ricke, Larent Drouet, Ken Caldeira & Massimo Tavoni, 8 *Nature Climate Change* 895 (2018).

509. *See* Section III.A.

510. *Robinson Twp. v. Commonwealth*, 83 A.3d 901, 958 (Pa. 2013) (plurality); *Pa. Env’tl. Def. Found. v. Commonwealth*, 161 A.3d 911, 933 (Pa. 2017).

carbon to constrain the emissions of GHGs that harm public natural resources. This result seems compelled by the text of the ERA and the trustee's duty of prudence as found by the Court in *PEDF*.⁵¹¹

While the social cost of carbon is based on the marginal cost of greenhouse gas emissions based on global damages, the ERA relates to the public natural resources of the Commonwealth of Pennsylvania. The most relevant public natural resource, a stable climate not disrupted by human GHG pollution, is both a global resource and a Pennsylvania public resource. If a cost is put on GHG emissions, as contemplated by the derivation of the social cost of carbon, parties will implement all control measures that cost less than the social cost of carbon, so that the social cost of carbon represents the cost that should be imposed to prevent "unreasonable degradation of natural resources."⁵¹² A lower cost will be insufficient to conserve the global resource, and if the global climate is disrupted, Pennsylvania's climate will be equally disrupted.⁵¹³ Because GHGs are global pollutants, if Pennsylvania does not implement all measures costing less than the social cost of carbon, but instead uses some lesser value based on the damage within Pennsylvania itself, the global climate will be disrupted, and Pennsylvania trust resources will neither be conserved nor maintained.

There is a second legal reason for employing a measure based on the marginal global cost associated with a ton of GHGs. The UNFCCC requires that developed nations implement policies and measures to deal with climate change that "should be cost-effective so as to ensure global benefits at the lowest possible cost."⁵¹⁴ In this case, the "global benefits" are the avoided global damages measured by the social cost of carbon. For this reason, the social cost of carbon appears to be the best measure to determine both the value of the undisrupted climate resources and the scope of measures required under the ERA to prevent unreasonable degradation of those resources.

2. Support for a Meaningful Price on GHG Emissions

The APCA authorizes the EQB to adopt a regulation putting a price on GHG emissions commensurate with the social cost of carbon and establishing a descending cap that achieves carbon neutrality by mid-century. The *PEDF* decision provides additional support for such a regulation through two overlapping rationales. First, there is a significant argument that allowing private parties to emit GHGs is the equivalent of allowing them to appropriate ecosystem services for free even though the Commonwealth has a fiduciary duty to assure that the beneficiaries of the trust obtain a fair price. Allowing the use of these resources without requiring payment would arguably loot public trust resources in an even more egregious way than the General Assembly's looting in *PEDF*. Second, putting a price on emissions commensurate with the social cost of carbon and establishing a descending cap that achieves carbon neutrality by mid-century is necessary to sufficiently maintain and conserve the ERA trust resources.⁵¹⁵ Both rationales would support either the imposition of a fee or capping emissions and auctioning allowances with a reserve price that is adequate both to (1) assure the conservation of the trust resources by limiting the risk to those resources and (2) compensate the Commonwealth for the damage to public resources that will occur. In either case, the required price would be at least as great as the social cost of carbon, which, as discussed above, is based on the marginal cost of the future damage avoided by each ton of carbon dioxide emitted.⁵¹⁶

Putting a price on carbon consistent with the social cost of carbon under each of the foregoing rationales is arguably mandated by the fiduciary duties cited by the Court in *PEDF*. These duties include the duty of prudence,

511. See *PEDF*, 161 A.3d at 932 (citation omitted); see also *id.* at 938 (invalidating transfer of funds because it violated the duty of prudence and the duty to use trust assets in accordance with the trust purposes). Whether the Commonwealth's failure as a trustee to preserve the corpus of the trust resources after damage may have created liability for damage is beyond the scope of this article.

512. See *Robinson Twp.*, 83 A.3d at 953 (quoting *Mont. Env't'l Info. Ctr. v. Dep't of Env'tl. Quality*, 988 P.2d 1236, 1249 (1999)).

513. An argument premised on the proposition that one should ignore the global marginal cost of the emissions of a ton of GHGs in calculating the social cost of carbon would be the equivalent of arguing that one should ignore global demand and cost considerations in valuing the price of oil.

514. UNFCCC, *supra* note 191, art. 3, § 3.

515. Because, as discussed above, the social cost of carbon should be set at a level reflecting the damages avoided by not emitting an additional ton of carbon dioxide, with a premium reflecting the risk of catastrophic results and uncertainty, emissions will be avoided as long as the value from emitting the carbon dioxide is greater than the damage with the risk premium.

516. See EPA SCC FACT SHEET, *supra* note 217, at 1.

which “requires a trustee to ‘exercise such care and skill as a man of ordinary prudence would exercise in dealing with his own property.’ ”⁵¹⁷ A prudent trustee would seek to use an effective means of protecting the trust corpus; the effectiveness of a carbon price for this purpose is supported by both theory and experience. Putting this price on carbon emissions is also consistent with the text of the ERA, which directs the Commonwealth, as trustee, to “conserve and maintain” the trust corpus in furtherance of the people’s enumerated rights. Requiring polluters to purchase at auction their right to pollute the air, subject to a reserve price equal to the avoided damage as represented by the social cost of carbon, is more consistent with the Commonwealth’s duties as a trustee for its natural resources than allowing those polluters to appropriate those public resources free of charge and, as a result, deplete or damage the corpus of the trust.

V. A REGULATORY STRUCTURE AUTHORIZED BY EXISTING LAW CAN ACHIEVE CARBON NEUTRALITY BY MID-CENTURY AND IMPOSE THE SOCIAL COST OF CARBON ON GHG EMISSIONS

As suggested by *Funk v. Wolf*,⁵¹⁸ individuals adversely affected by climate disruption could assert their right under Article I, § 27 to have the Commonwealth perform its duty as a trustee to prevent climate disruption by submitting a petition to the EQB seeking the promulgation of specific regulations limiting GHG emissions pursuant to the APCA.⁵¹⁹ The petition must include a proposed regulation or regulatory structure consistent with existing statutory authority.⁵²⁰ That authority would need to support a court order compelling the regulation’s adoption should the EQB fail to act, and withstand judicial review if the regulation were adopted by the EQB. To accomplish this, the structure should satisfy the following criteria:

First, as discussed above, the regulatory structure should result in the reduction of emissions sufficient to achieve net carbon neutrality by the second half of the century, if not earlier.

Second, as also discussed above, the regulatory structure should either impose a cost on emissions equal to the social cost of carbon or require all emissions reduction measures less than that cost. The structure could start with a lower cost that grows steadily over time, creating consistency with other programs, generating a predictable framework for investment decisions and facilitating a transition from free emissions to emissions that incur a cost.

Third, as also discussed above, the structure should generate income for the beneficiaries of the trust without impairing the trust’s principal.

Fourth, as discussed below, the regulatory structure should result in actual emissions reductions and not result in the transfer of emissions to other unregulated economic sectors, states or nations through the process of leakage.

Finally, as suggested in *Funk*, the regulatory structure should be authorized by existing law, or it should be authorized by law that can be implemented administratively without further legislation.⁵²¹

For the reasons discussed below, other measures may be warranted to reduce the cost and effectiveness of a program. However, these criteria support and arguably require the adoption of an economy-wide cap-and-trade program with an auction and reserve price, similar to the program established under the California Global Warming

517. *PEDF*, 161 A.3d at 932 (quoting *In re Mendenhall*, 398 A.2d 951, 953 (Pa. 1979) (quoting RESTATEMENT (SECOND) OF TRUSTS § 174)); *see also id.* at 938.

518. *Funk v. Wolf*, 144 A.3d 228, 243 (Pa. Commw. Ct. 2016), *aff’d without opinion* 158 A.3d 642 (Pa. 2017).

519. 35 PA. CODE §§ 4001-4015 (West 2011).

520. *See* 25 PA. CODE §§ 23.1(a)(2)(i), 2(2).

521. *See Funk v. Wolf*, 144 A.3d at 250 (noting that “[b]ecause the ERA does not authorize Respondents to disturb the legislative scheme, we must assess whether the actions requested are otherwise made mandatory by the climate change legislative scheme. “). This assumes that the General Assembly remains unwilling to enact new legislation and that it will be necessary to induce or judicially compel administrative action. The State of New York has been proceeding to implement its program for reducing GHGs administratively, using executive authority. *See Thrun v. Cuomo*, 976 N.Y.S.2d 320, 323 (N.Y. App. Div. 2013) (dismissing claims against New York Governor’s climate change action on jurisdictional grounds, limiting claims to challenges to regulations); *Coal. for Competitive Elec. v. Zibelman*, 272 F. Supp. 3d 554, 559 (S.D.N.Y. 2017), *aff’d No. 17-2654-cv (2d Cir. Sept. 27, 2018)* (quoting CES Order, App’x E, at 1).

Solutions Act.⁵²² The regulation should prevent intersectoral “leakage” as well as leakage to other states and nations. The requirements of the ERA support distribution of the tradable allowances through an auction with a reserve price set at the social cost of carbon, except in instances where the award of free allowances or low-cost allowances may be warranted to prevent leakage. The program should be designed to effectively prevent leakage and inefficiencies by allowing interstate and international trading with jurisdictions with similar programs.

Existing Pennsylvania statutes authorize both the regulation of GHG emissions and participation in regional cap-and-trade programs, such as the nine-state Regional Greenhouse Gas Initiative (RGGI) or the California-Quebec-Ontario trading program. “RGGI is a cooperative effort among the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont to cap and reduce CO₂ emissions from the power sector.”⁵²³ New Jersey is preparing to rejoin RGGI and Virginia has proposed regulations that would allow trading with RGGI states.⁵²⁴ The RGGI program has put a descending cap on GHG emissions from the power sector, provides for trading of allowances, and distributes the bulk of allowances through an auction with a reserve price.⁵²⁵ The California-Quebec-Ontario program creates an economy-wide cap and trade program that covers all major GHG emission sources and further requires that distributors of fossil fuels and electricity importers surrender allowances equal to the emissions created by combustion of the fuels or generation of the imported electricity.⁵²⁶ That program also distributes many allowances by auction with a reserve price.⁵²⁷ If a rulemaking petition that would facilitate trading in these programs were presented to the EQB, the EQB would have a judicially enforceable constitutional duty to adopt that regulation. As discussed above, such a petition would rely on existing Pennsylvania authority and would describe a reasonably specific rule, thus overcoming the obstacles to mandamus that existed in *Funk*.

A. *An Effective Regulatory Program Will Require Economy-Wide Coverage Under a Cap-and-Trade Program with Additional Measures to Prevent Leakage*

Many legal models would achieve GHG emissions reduction using existing Pennsylvania law. These include a cap-and-trade program with a variety of mechanisms to distribute allowances, an emissions tax, and traditional regulatory techniques (such as technology-based emissions standards and permits that establish limits based on technology or other criteria). Not all of these mechanisms are authorized by current law. Although a mix of other authorized mechanisms can and should be employed as part of an effective program, as discussed below, none can achieve what will be required to meet the constitutional objectives without an economy-wide cap-and-trade program with an auction and reserve price.

An economy-wide GHG emissions tax set at the social cost of carbon and coupled with the leakage prevention measures discussed below could equally satisfy the constitutional prerequisites. However, a tax requires additional legislative action. By contrast, as also discussed below, a cap-and-trade program with an auction and a reserve price can be established by regulation under the existing authority of the APCA and Article I, §27 without the need for further legislation. Moreover, a carbon tax will not guarantee achieving carbon neutrality by mid-century. A cap-and-trade program with an auction and reserve price and a descending cap reaching carbon neutrality by mid-century

522. See CAL. HEALTH & SAFETY CODE §§ 38500-38599 (West 2006); CAL. CODE REGS., tit. 17, §§ 95801-96022 (2018). These regulations were changed in 2016 to set more aggressive targets. We are suggesting that the basic structure of the regulatory program – economy wide applicability with an auction and reserve price – should be adopted by Pennsylvania, not necessarily the goals. Pennsylvania goals should be structured to provide a longer term and certain path to carbon neutrality by the 2050s.

523. THE REG’L GREENHOUSE GAS INITIATIVE, <https://www.rggi.org/> (last visited Mar. 6, 2018).

524. 9VAC5-140. Regulation for Emissions Trading Programs (adding 9VAC5-140-6010 through 9VAC5-140-6430), 34 Va. Reg. Regs. 924-59 (Jan. 8, 2018). See also Darrell Proctor, *Virginia Moves to Join RGGI Carbon-trading Market*, POWER (Nov. 15, 2017), <http://www.powermag.com/virginia-moves-to-join-rggi-carbon-trading-market/>.

525. See *Elements of RGGI*, REGIONAL GREENHOUSE GAS INITIATIVE, <https://www.rggi.org/program-overview-and-design/elements> (last visited Mar. 6, 2018).

526. See CAL. AIR RES. BD., CALIFORNIA CAP-AND-TRADE PROGRAM: FACTS ABOUT THE LINKED CAP-AND-TRADE PROGRAMS 1 (2017), https://www.arb.ca.gov/cc/capandtrade/linkage/linkage_fact_sheet.pdf; CAL. AIR RES. BD., CAP-AND-TRADE REGULATION INSTRUCTION GUIDANCE 20-22 (2012), <https://www.arb.ca.gov/cc/capandtrade/guidance/chapter2.pdf>.

527. See *Reserve Sale Information*, CAL. AIR RES. BD. (Mar. 16, 2017), <https://www.arb.ca.gov/cc/capandtrade/reservesale/reservesale.htm>

would also be at least as effective in reducing GHG emissions as a tax, would better ensure that the mid-century goal would be achieved, and would also recover income for the beneficiaries of the constitutional trust.⁵²⁸

Emissions reductions can also be achieved using traditional regulatory approaches. Typically, these approaches rely upon emissions limitations based on reductions that are deemed achievable using a certain technology. This was the technique used to derive the emissions reduction goals for the Clean Power Plan.⁵²⁹

Although elements of a command-and-control program (such as permits and emissions monitoring) will be required for any effective program, sole reliance on this typical regulatory approach will not achieve the constitutional objectives for a number of reasons.⁵³⁰ First, emissions limits based on what a given technology can achieve rather than the emissions reduction goal – *i.e.* the pathway necessary to achieve carbon neutrality by mid-century – are unrelated to the ultimate goal and will often fail to achieve it.⁵³¹ By contrast, setting a declining cap based on the trajectory deemed appropriate to achieve the emissions reduction will result in certain reductions. Second, the determination of a technology-based limit is based on an *ex ante* estimate of emissions reduction costs and available technologies and usually results in a lower degree of emissions reduction than can actually be achieved at a given cost.⁵³² Third, as discussed below, it would be more difficult and perhaps impossible to prevent leakage⁵³³ using a technology-based regulatory approach. Fourth, the process of reviewing technologies and developing standards is time and energy intensive, and the standards are unlikely to be put in place within a time frame necessary to achieve the necessary reductions.⁵³⁴ Fifth, although technology-based standards are intended to be technology forcing, hard caps coupled with an increasing reserve price would better inform the market in advance and would be more likely to drive the necessary capital investment. Sixth, a traditional regulatory approach would not generate income for the beneficiaries of the constitutional trust.

528. A cap-and-trade program with an auction differs from a tax in one key respect. With a tax, the market determines the extent of emissions reductions, and with the cap-and-trade program, the market determines the amount of money that is recovered. The cap-and-trade program with an auction with a reserve price combines the two approaches and best assures emissions reductions. This is because a cap is often initially set too leniently and neither recovers sufficient income nor assures reductions that can be achieved cost-effectively. Thus, when a cap is set too leniently, the reserve price in the auction results in excess allowances not being sold, acting as a tax and achieving additional cost-effective reductions. The California Court of Appeals held that California’s GHG allowance auction (which utilizes a reserve price) is not a tax. *California Chamber of Commerce v. State Air Res. Bd.*, 216 Cal. Rptr. 3d 694, 700 (Cal. Ct. App. 2017) (“These twin aspects of the auction system, voluntary participation and purchase of a specific thing of value, preclude a finding that the auction system has the hallmarks of a tax.”).

529. See 40 C.F.R. pt. 60 (2017). See also *Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units*, 82 Fed. Reg. 48,035, 48,037 (proposed Oct. 16, 2017) (to be codified at 40 C.F.R. pt. 60) (proposing a repeal of the Clean Power Plan in part because the “rule established performance standards for coal-fired plants assuming a uniform emissions rate well below that which could be met by existing units through any retrofit technology of reasonable cost available at the time”).

530. See McKinstry, Peterson & Chester, *supra* note 192, at 10139-41 (discussing why a technology-based approach such as that applied in the Clean Power Plan is unlikely to result in the reductions necessary to achieve the objectives of the Paris Agreement).

531. *Id.* at 10140.

532. In virtually all cases, emissions reductions have been achieved at a significantly lower cost than originally estimated. This means that a cap-and-trade program with a reserve price set at the social cost of carbon will likely result in more emissions reductions than might be achieved by attempting to determine what technologies could be employed at the social cost of carbon and establishing emissions limits based on those technologies. For example, in the Clean Power Plan, EPA based its determination of the required emissions reductions on an *ex ante* determination of what could be achieved by a suite of technologies. Analyses of the CPP concluded that allowance prices would initially be zero, meaning that the required “reductions” would be no greater than business as usual. McKinstry, Peterson & Chester, *supra* note 192, at 10139, n. 35; see also *id.* at 10140; David M. Driesen, *Is Emissions Trading an Economic Incentive Program?: Replacing the Command and Control/Economic Incentive Dichotomy*, 55 WASH. & LEE L.R. 289, 318-319 (1998).

533. The concept of leakage is discussed in the following section.

534. For example, 40 C.F.R. § 60, which establishes standards of performance for new stationary sources of air pollutants for various industrial categories, now contains subparts A through UUUU, with each subpart generally addressing a different industrial category. 40 C.F.R. § 60 (2016). In the decade following *Massachusetts v. EPA*, EPA has established technology-based standards for just one category, new and existing power plants, 40 C. F.R. § 60, subparts TTT & UUUU, and those standards have been stayed and are under reconsideration. Moreover, as discussed above, the standards were outdated even before implementation, such that the new source standards were weaker than the emissions being achieved by existing combined cycle natural gas-fired plants, and the standard for existing power plants was no better than business as usual. McKinstry, Peterson & Chester, *supra* note 192, at 10139-40.

Still, regulatory approaches could be helpful to address situations where the market does not function efficiently.⁵³⁵ California employs a number of supplemental measures to address these situations.⁵³⁶ For example, as a part of its cap-and-trade program, the state imposes a price on fuel based on the GHG emissions from its combustion by requiring fuel suppliers to acquire and surrender allowances. However, this approach will not readily produce emissions reductions if manufacturers do not make lower emissions vehicles available, or if suppliers do not make low carbon fuels available, or if homebuyers do not consider utility costs in deciding whether to purchase energy efficiency measures rather than granite countertops in their new homes.⁵³⁷ Therefore, measures like fleet emissions limits, fuel content requirements, and building codes requiring energy efficiency all reduce the cost of emissions reductions and can achieve greater emissions reductions when coupled with a cap-and-trade program. California includes measures such as these to support its cap-and-trade program.⁵³⁸ However, without the uniform ceiling created by the cap, and without the uniform price floor created by the reserve price, those measures alone will not achieve the emissions reductions within the time necessary to conserve and maintain a stable climate.

B. *The Significance of Leakage*

Both constitutional and practical policy considerations call for the implementation of a policy program that prevents or at least minimizes the phenomenon of “leakage.” Leakage refers to increases in emissions in unregulated sectors or unregulated jurisdictions that are caused by the relocation of emissions-generating activity away from the regulated sector or jurisdiction.⁵³⁹ Leakage can occur because a business shifts some or all of its production to other states or nations. Leakage may also occur between sectors. If the result of regulation is an increase of emissions in other sectors, in other states, or in other nations, at least some of the damage to the natural resources will occur in any case.

1. Types of Leakage

Interstate leakage occurs in the electricity sector, where electrons flow readily across state boundaries and where generation units are called upon to supply electricity to the grid in order of price.⁵⁴⁰ For example, if Pennsylvania puts a price on carbon but West Virginia does not, then generation units in West Virginia would not include an emissions price in their bids, and they would be able to submit lower bids. This would move the West Virginia units up in the order in which they are called. In some cases, this might result in a West Virginia coal-fired plant being called upon before a combined cycle natural gas plant in Pennsylvania, which has only about 40% of the emissions of the coal-fired plant.⁵⁴¹ In that case, even though Pennsylvania coal-fired plants would operate less frequently, some of the

535. See Daniel Shawhan, *Reductions and “Leakage” from US State Cap-and-Trade Programs* (Sept. 19, 2013), <http://www.rff.org/files/sharepoint/Documents/Events/Workshops%20and%20Conferences/Shawhan-presentation.pdf>; MEREDITH L. FOWLIE, MAR REGUANT, & STEPHEN P. RYAN, MEASURING LEAKAGE RISK, 13 (2016), <https://www.arb.ca.gov/cc/capandtrade/meetings/20160518/ucb-intl-leakage.pdf>.

536. E.g., CAL. AIR RES. BD., CALIFORNIA’S 2017 CLIMATE CHANGE SCOPING PLAN, THE STRATEGY FOR ACHIEVING CALIFORNIA’S 2030 GREENHOUSE GAS TARGET (2017), https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf. The additional measures include California’s renewable portfolio standard (“RPS”); a low carbon fuel standard; a multi-faceted mobile source strategy (including vehicle fleet standards, measures for encouraging the electrification of the vehicle fleet, and transportation and land use planning to reduce vehicle miles traveled); standards to reduce emissions of methane and carbon black as well as use of HFC’s; and measures to improve freight efficiency. *Id.* at 25, Table 1.

537. Although emissions reductions will ultimately occur even without the supplemental measures, a much higher price must be imposed without the supplemental measures.

538. *Id.* at ES16.

539. See Shawhan, *supra* note 254, at slide 5; FOWLIE ET. AL., *supra* note 254 at 13.

540. Fed. Energy Regulatory Comm’n v. Elec. Power Supply Ass’n, 136 S. Ct. 760, 768-69 (2016) (describing the structure of competitive, interstate electricity markets).

541. The national emissions data gathered by EPA and reported in the technical support documents for the Clean Power Plan indicated that in the Eastern Interconnection coal-fired plants emitted 1,356,066 thousand tons of carbon dioxide while producing 1,230,444 GWh of electricity for an emission rate of 1,102 tons/GWh, while combined cycle natural gas-fired plants emitted 328,220 thousand tons of carbon dioxide while producing 734,335 GWh, for an emission rate of 447 tons/GWh, or 40.6% of the average rate for the coal-fired fleet. ENVTL. PROT. AGENCY, OFFICE OF AIR & RADIATION, CO₂ EMISSION PERFORMANCE RATE AND GOAL COMPUTATION TECHNICAL SUPPORT DOCUMENT FOR CPP FINAL

emissions reductions would be offset by increased emissions from coal-fired plants in West Virginia operating more frequently. This type of leakage can also occur in regulatory regimes. If Pennsylvania requires the installation and operation of carbon capture and sequestration control equipment on its fossil-fired plants and West Virginia does not, the dispatch of electricity could also shift to West Virginia.

The EPA addressed interstate leakage of conventional air pollutants in its Cross-State Air Pollution Rule implementing the Clean Air Act's Good Neighbor provision.⁵⁴² The EPA based its allowance caps and state budgets on models using a uniform allowance price.⁵⁴³ In essence, this created a program imposing a uniform price across state boundaries to prevent leakage.⁵⁴⁴ Similar mechanisms to put a uniform price on emissions will be required for programs requiring GHG emissions reductions in the electricity sector.

Leakage has been a significant problem for the RGGI cap-and-trade program, which is limited to the electricity sector. Although the RGGI program has achieved significant emissions reductions in RGGI states, a portion of those reductions has caused the shifting of dispatch to higher emitting fossil fuel-fired facilities in Pennsylvania and other states.⁵⁴⁵ This leakage not only limits the effectiveness of the RGGI program to reduce overall emissions, but also depresses RGGI allowance prices.⁵⁴⁶ Allowance prices are so depressed by this leakage that New York needed to adopt a mechanism requiring electricity distribution companies to buy zero emission credits (ZECs) based on the social cost of carbon in order to prevent the premature closure of non-emitting nuclear units.⁵⁴⁷

Interstate and international leakage may occur in other industries, although not as readily as in the electricity industry. In the case of electricity generation, shifting dispatch of electricity units from one state to another based on price occurs immediately. However, products in other industries are not as readily fungible, and leakage may lead to the closing of a plant or moving production.⁵⁴⁸ The difference in industry structure may necessitate different leakage control mechanisms, as discussed in the next subsection.

RULE 10, Table 3 (2015), <https://archive.epa.gov/epa/sites/production/files/2015-11/documents/tsd-cpp-emission-performance-rate-goal-computation.pdf>.

542. Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals, 76 Fed. Reg. 48208 (August 8, 2011) (Cross-State Air Pollution Rule), *aff'd* Env'tl. Prot. Agency v. EME Homer City Generation, L.P., 572 U.S. 32 (2014); CROSS-STATE AIR POLLUTION RULE, REDUCING AIR POLLUTION PROTECTING PUBLIC HEALTH, U.S. ENVTL. PROT. AGENCY, OFFICE OF AIR & RADIATION (2011).

543. See 76 Fed. Reg. 48248-53.

544. In the Cross-State Air Pollution Rule, EPA created state budgets based on air quality needs and the cost of "highly cost effective reductions," and it imposed uniform costs to prevent leakage. The U.S. Supreme Court recognized the problem of leakage and approved this approach to dealing with it in *Env'tl. Prot. Agency v. EME Homer City Generation, L.P.*, 572 U.S. ___, at 4 (2014).

545. SUE WING & MAREK KOLODZIEJ, THE REG'L GREENHOUSE GAS INITIATIVE: EMISSION LEAKAGE AND THE EFFECTIVENESS OF INTERSTATE BORDER ADJUSTMENTS 4 (2008), https://sites.hks.harvard.edu/m-rcbg/rpp/Working%20papers/RPP_2008_03_SueWing.pdf.

546. In the RGGI program, the California cap-and-trade program and other similar programs, an allowance represents the right to emit one metric ton of carbon dioxide or its equivalent. See RGGI 2017 MODEL RULE, at 4; CAL. CODE REGS., tit. 17, § 95802(8) (2018); These programs auction or otherwise distribute a number of allowances equal to the cap. See *Elements of RGGI*, *supra* note 244. Each regulated party must surrender a number of allowances equal to its emissions (or the emissions produced by the regulated products in the case of the California program) at the end of the applicable compliance period.

547. *Coal. for Competitive Elec. v. Zibelman*, 272 F. Supp. 3d 554, 561-63 (S.D.N.Y. 2017), *aff'd* No. 17-2654-cv (2d Cir. Sept. 27, 2018) (quoting CES Order, App'x E, at 1).

548. If a price is put on emissions from industries such as steel and fertilizer production in one state, production costs will increase in that state and a company might switch production to another plant in a state or nation that does not put a price on emissions. In that case, emissions will still occur, but in a different location. The disparity in production costs may cause a plant to close, shifting production elsewhere.

It is important to note that the electricity industry is fundamentally different from industries such as steel and fertilizer production. Electricity production must occur within a relatively limited geographic area that is tied to the consumer by the grid and is sufficiently proximate to prevent excessive transmission losses. For the most part, electricity cannot be stored and, although storage technologies are improving, they are still very limited; storage can occur for only a short period of time. Electricity therefore relies upon markets in which generation sources that can be turned on or off are called upon in the order of bids, and all electricity generators receive a price based upon the highest bid that is called upon. The bids are based on marginal operating costs and not on fixed or capital costs. Non-emitting sources, such as nuclear or most renewable generation sources, do not have significant marginal operating costs and cannot readily be turned on or off. These non-emitting sources, therefore, submit zero or negative bids and rely upon the bids of fossil generators to set the price of electricity that the non-emitting sources receive. If electricity prices are not sufficiently high, companies will not invest capital necessary to expand the capacity of non-emitting generation or to keep that generation operating. The fossil sources set their bids above their net marginal operating costs, which are based on the cost of fuel, pollution control and other

Finally, if emissions control requirements are imposed or an emission price is imposed on the electricity sector but not on other sectors, then the other sectors may switch from electricity use to the use of fossil fuels. For example, if a price is put on emissions from the electricity sector but not on the transportation sector, electric cars and plug-in hybrids will be more expensive compared to vehicles with internal combustion engines, deterring the emissions reductions that would occur as a result of electrification of the transportation sector. This can also occur in the area of building heating and cooling. If a price is put on emissions from the electricity industry but not on heating oil or natural gas, it will encourage direct use of fossil fuels for heat instead of non-emitting electric heating, even in buildings that use non-fuel mechanisms to increase heating efficiency, such as ground source geothermal.⁵⁴⁹ Leakage may also affect production technology choice. For example, steel can be manufactured using an electric arc furnace, which uses electricity, or an open-hearth furnace, which uses coal. Increasing the cost of electricity emissions and the cost of electricity without putting a price on emissions from the electric hearth unit may cause leakage by shifting some production to the open-hearth technology.

2. Mechanisms to Prevent Leakage

The regulatory mechanisms employed by California pursuant to the Global Warming Solutions Act reflect consideration of each of these forms of leakage. To prevent intersectoral leakage, California has created an economy-wide cap-and-trade program applicable to GHG emissions from the electricity sector; emissions from other major air pollution sources; the import of electricity; and the sale of natural gas, heating oil, and gasoline.⁵⁵⁰ Interstate leakage in the electricity sector is controlled by requiring that importers of electricity surrender allowances equal to the GHG emissions resulting from the electricity generation.⁵⁵¹ Interstate and international leakage from sectors vulnerable to international and interstate competition is prevented by awarding allowances to those industries rather than requiring the allowances to be purchased at auction.⁵⁵²

The RGGI states attempt to eliminate leakage among the participating states through the creation of a uniform trading program, so that generators in the nine states will face similar costs and cannot benefit by switching dispatch or investment to other RGGI states.⁵⁵³ Nevertheless, leakage has occurred as dispatch is switched to other nearby states that do not regulate GHG emissions or put a price on those emissions. For RGGI, as in Pennsylvania, it is difficult to require the surrender of allowances for imported electricity, as would happen in California.

PJM Interconnection, LLC (PJM), the regional transmission organization that oversees the dispatch and transmission of electricity in Pennsylvania and several RGGI states,⁵⁵⁴ as well as New York Independent System

marginal costs. If a fossil generator receives an allowance based on its production, that allowance will produce operating revenue offsetting the operating costs, allowing all fossil generators to submit lower bids. Lower electricity prices will reduce the amount of non-emitting generation by reducing the return on capital. In some cases, it may also move higher emitting facilities, such as coal-fired plants, up in the order of dispatch, thereby increasing emissions. For a discussion of wholesale electricity markets, *see* Fed. Energy Regulatory Comm'n v Elec. Power Supply Ass'n, 136 S.Ct. 760, 768-772 (2016).

By contrast, steel and fertilizers operate in international markets and can be stored for long period of time in warehouses, so that the actions of a single state or even a group of states such as RGGI will not affect the price of a ton of steel or of fertilizer. If these industries are awarded allowances based on production, it will not affect price but will still create a strong incentive to reduce emissions and thereby reduce costs. This will reduce and possibly eliminate the incentive to shift production to another state or country or to abandon capital by shutting a plant down.

549. Heat pumps are more efficient than other forms of electric heating, and ground source geothermal increases the efficiency of heat pumps significantly by allowing them to discharge heat into the subsurface while cooling and to pull heat from the subsurface while heating. Because the subsurface maintains a constant temperature over the seasons, the heat pump is able to operate at maximum efficiency, reducing the amount of electricity used and emissions that may be associated with that electricity.

550. CAL. CODE REGS. tit. 17, § 95101 (2018) (covered entities); *see generally*, California Global Warming Solutions Act, CAL. HEALTH & SAFETY CODE §§ 38500-38599 (West 2018); CAL. CODE REGS., Tit. 17, §§ 95801-96022 (2018).

551. CAL. CODE REGS. Tit. 17, §§ 95101(b), 95852(b)(3) (2018).

552. *Id.* at § 95891.

553. *See generally* RGGI 2017 MODEL RULE.

554. The interconnection itself is known as the Pennsylvania-New Jersey-Maryland Interconnection. PJM includes Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and the District of Columbia.

Operator (NYISO) and Independent System Operator New England (ISO New England), are currently exploring mechanisms to prevent leakage and the market distortions caused by some states' failure to put an adequate price on GHG emissions. The mechanisms include border adjustments made by way of "carbon adders" that are placed on bids from fossil fuel-fired units in states without regulation or other border charges. NYISO commissioned a study "to explore whether and how New York State environmental policies limiting carbon may be pursued within the existing wholesale market structure."⁵⁵⁵ The NYISO study explained how, for the purpose of deciding the order in which generation units would be "dispatched" or called upon, border adjustments could assign a price or "carbon adder" that would be added to imports based on the generator's emissions and the price within New York.⁵⁵⁶ Exporters from New York would receive a credit based on the emissions charges.⁵⁵⁷ PJM, which involves multiple states, has gone further and described a mechanism that would create subregions to prevent leakage across regulated and unregulated regions by way of a two-stage process.⁵⁵⁸

Notably, the various mechanisms for limiting interstate and intersectoral leakage cannot operate effectively without a cap-and-trade program that imposes a uniform price on emissions.⁵⁵⁹ Therefore, at a minimum, an effective program will require such a cap-and-trade program with the opportunity to trade with other similar programs.⁵⁶⁰

C. Authority to Regulate Greenhouse Gas Emissions Under the Pennsylvania Air Pollution Control Act

The Commonwealth Court reasoned in the *Funk* decision that existing legislative authority to limit GHG emissions is a necessary basis for obtaining judicial relief requiring regulatory action to limit those emissions.⁵⁶¹ The court's decision was based on well-founded separation of powers concerns.⁵⁶² As also noted in *Funk*, and explained in greater detail below, regulation of GHG emissions is authorized under the APCA.⁵⁶³ This statute governs the air pollution control program in Pennsylvania and authorizes the type of cap-and-trade program described above. The APCA authorizes the EQB to adopt air pollution regulations,⁵⁶⁴ and the EQB has rules governing the submission of

In regions where electric utilities were restructured such that generation was deregulated (*i.e.* became competitive), regional transmission organizations ("RTOs") and independent service operators ("ISOs") manage wholesale electricity transmission, deciding which generation units should be dispatched. In other regions, the electricity transmission and generation are handled by traditional vertically integrated utilities. See CONGRESSIONAL RESEARCH SERV., REPORT R44783, FEDERAL POWER ACT (FPA) AND ELECTRICITY MARKETS (2017).

555. SAMUEL A. NEWELL ET. AL., N.Y. DEP'T. OF PUB. SERV., N.Y. INDEP. SYS. OPERATOR, PRICING CARBON INTO NYISO'S WHOLESALE ENERGY MARKET TO SUPPORT NEW YORK'S DECARBONIZATION GOALS iv (2017), https://www.energymarketers.com/Documents/Brattle_study_carbon_pricing.pdf.

556. *Id.* at 23-26.

557. *Id.* at 24.

558. PJM, ADVANCING ZERO EMISSIONS OBJECTIVES THROUGH PJM'S ENERGY MARKETS: A REVIEW OF CARBON-PRICING FRAMEWORKS (2017), <http://pjm.com/~media/library/reports-notice/special-reports/20170502-advancing-zero-emission-objectives-through-pjms-energy-markets.ashx>. These leakage prevention mechanisms require approval by the Federal Energy Regulatory Commission.

559. The leakage control mechanisms rely upon a fungible price to eliminate interstate disparities caused by the state's putting a price on GHG emissions. If a state relied on a more traditional regulatory approach, such as establishing emissions limits, it would lack jurisdiction to impose those limits on other states or nations. A regulatory approach is insufficiently fungible to allow a state to impose a charge that equalizes the effect, particularly in light of the dormant commerce clause. U.S. CONST., Art. I, § 8, cl. 3.

560. Clean Air Rule, WAC 173-442-100 (2016). The State of Washington Department of Ecology has adopted a Clean Air Rule, which creates a different type of program that requires annual percentage GHG emissions reductions and allows the use of tradeable emissions allowances from other states to satisfy the emissions reduction obligation. Chapter 173-442 WAC. This regulation has been suspended because of a decision partially invalidating it. Regardless, this approach would not be applicable to Pennsylvania because it would not generate income for beneficiaries of the trust. Although it assures emissions reductions, the ability to trade under the program ultimately depends upon other jurisdictions creating tradable allowances with a transparent price.

561. *Funk v. Wolf*, 144 A.3d 228, 235, 248-49 (Pa. Commw. Ct. 2016) *aff'd without opinion*, 158 A.3d 642 (Pa. 2017).

562. *Id.* at 235.

563. 35 PA. CONS. STAT. § 4001-4015

564. 35 PA. CONS. STAT. § 4005

petitions for rulemaking under the APCA.⁵⁶⁵ The APCA further authorizes DEP to administer air regulatory programs, including regulations adopted by the EQB.⁵⁶⁶

The APCA provides DEP with the authority to regulate air pollution in accordance with the federal Clean Air Act.⁵⁶⁷ The APCA states that DEP “shall have the power and its duty shall be to [i]mplement the provisions of the Clean Air Act in the Commonwealth.”⁵⁶⁸ The Act further provides that the EQB “[s]hall have the power and its duty shall be to [a]dopt rules and regulations to implement the provisions of the Clean Air Act,” which “shall be consistent with the requirements of the Clean Air Act and the regulations adopted thereunder.”⁵⁶⁹ These provisions suggest that the EQB has broad authority to promulgate regulations consistent with the requirements of the Clean Air Act and that DEP has authority to implement the provisions of the federal Clean Air Act.

The statute further provides that no operating permit may be issued by DEP unless it determines that the source will not discharge air contaminants “in violation of any performance or emission standard or other requirement” established by EPA or DEP.⁵⁷⁰ Further, DEP must revise any permit to incorporate applicable standards and regulations promulgated under the Clean Air Act after issuance of the permit in accordance with a timeframe set forth in the statute.⁵⁷¹ Because GHGs are now clearly pollutants under the Clean Air Act,⁵⁷² DEP must regulate those gases, at least to the extent set out in the federal Clean Air Act. This includes control of new or modified major stationary sources emitting 75,000 tons or more of greenhouse gases if that source also emits other pollutants regulated under the Clean Air Act.⁵⁷³

The EQB’s duty to adopt regulations limiting GHG emissions goes beyond the minimum that may be required under the Clean Air Act, even without considering the Commonwealth’s duty as a trustee under the ERA. The APCA provides the EQB with the authority and the mandatory duty to:

Adopt rules and regulations, for the prevention, control, reduction and abatement of air pollution, applicable throughout the Commonwealth or to such parts or regions or subregions thereof specifically designated in such regulation which shall be applicable to all air contamination sources regardless of whether such source is required to be under permit by this act.⁵⁷⁴

Those rules and regulation may, among other things, “prohibit or regulate any process or source or class of processes or sources.”⁵⁷⁵ Further, the APCA authorizes the Department to:

565. 23 PA. CODE §§ 23.1-23.8,

566. 35 PA. CONS. STAT. §4004.

567. 42 U.S.C. §§ 7401-7671q (1970).

568. 35 PA. CONS. STAT. § 4004(1).

569. 35 PA. CONS. STAT. § 4005(a)(8).

570. *Id.* at § 4006.1(b)(2).

571. *Id.* at § 4006.1(k).

572. *Coal. for Responsible Regulation, Inc. v. U.S. Evtl. Prot. Agency*, 684 F.3d 102 (D.C. Cir. 2012) *aff’d in part and rev’d in part on other grounds sub nom*; *Util. Air Regulatory Grp. v. Evtl. Prot. Agency*, 134 S. Ct. 2427 (2014); *see also Funk v. Wolf*, 144 A.3d 228, 250, n.17 (Pa. Commw. Ct. 2016), *aff’d without opinion*, 158 A.3d 642 (Pa. 2017)

573. In *UARG*, the U.S. Supreme Court upheld EPA regulation requiring control of greenhouse gases emitted by sources otherwise subject to Prevention of Significant Deterioration (PSD) review in quantities of at least 75,000 tons per year of carbon dioxide equivalent. *Prevention of Significant Deterioration and Title V Permitting for Greenhouse Gases: Removal of Certain Vacated Elements*, 80 Fed. Reg. 50,199 (Aug. 19, 2015). *See also Funk*, 144 A.3d at 250, n.17.

The Clean Power Plan, which would limit GHG emissions from power plants, has been stayed until all legal challenges are resolved. *West Virginia v. Evtl. Prot. Agency*, 136 S. Ct. 1000, 1000 (2016). Certain other rules limiting GHG emissions are under reconsideration by EPA. Still, these regulations remain on the books. There are many other laws and regulations limiting GHG emission under the Clean Air Act that remain in force and are not under reconsideration. More significantly, there are substantial arguments that GHG emissions from power plants and other stationary sources must be regulated under section 111 of the Clean Air Act. *See American Elec. Power Co. v. Connecticut*, 564 U.S. 410 (2011).

574. 35 PA. CONS. STAT. § 4005(a)(1).

575. *Id.*

Prepare and develop a general comprehensive plan for the control and abatement of existing air pollution and air contamination and for the abatement, control and prevention of *any new* air pollution and air contamination . . . and to submit a comprehensive plan to the [EQB] for its consideration and approval.⁵⁷⁶

The APCA defines “air contaminant” to include a “gas,” which would therefore include greenhouse gases.⁵⁷⁷ The statute defines “air contamination” as the “presence in the outdoor atmosphere of an air contaminant which contributes to any condition of air pollution”.⁵⁷⁸ It further defines “air pollution” as:

The presence in the outdoor atmosphere of any form of contaminant, including, but not limited to, the discharging from stacks, chimneys, openings, buildings, structures, open fires, vehicles, processes or any other source of any . . . gases, vapors, . . . or any other matter in such place, manner or concentration inimical or which may be inimical to the public health, safety or welfare or which is or may be injurious to human, plant or animal life or to property or which unreasonably interferes with the comfortable enjoyment of life or property.⁵⁷⁹

The EPA endangerment finding under the Clean Air Act, the 2015 DEP report under the Climate Change Act, and a wide variety of other scientific studies support the conclusion that GHGs constitute air pollution.⁵⁸⁰

Moreover, the Climate Change Act requires not only a report on greenhouse gas impacts every three years but also requires DEP to develop a climate change action plan for submission to the Governor identifying “cost-effective strategies for reducing and offsetting GHG emissions.”⁵⁸¹ This provision would not make sense unless the APCA allowed regulation of GHGs. The fact that the plan is submitted to the administrative branch rather than the legislative branch suggests that the General Assembly contemplated that the administrative branch could implement those strategies through rule-making and other actions already authorized by the General Assembly. Thus, DEP has authority under existing law to regulate GHGs through adoption of regulations by EQB, even in the absence of regulations under the federal Clean Air Act.⁵⁸²

Case law also supports this position. In *Commonwealth, Department of Environmental Resources v. Pennsylvania Power Co.*,⁵⁸³ the Commonwealth Court held that the APCA authorized regulations more stringent than federal

576. *Id.* at § 4004(18) (emphasis added).

577. *See id.* at § 4003 (definition of “air contaminant”).

578. *Id.* at § 4003 (definition of “air contamination”).

579. *Id.* at § 4003 (definition of “air pollution”).

580. *See Massachusetts v. Env'tl. Prot. Agency*, 549 U.S. 497, 528-530 (2007) (analysis of why greenhouse gases are air pollutants under the Clean Air Act).

581. *See* 71 PA. CONS. STAT. §§ 1361.3, 1361.7 (2018). Although the Act also requires the Plan to recommend legislative changes, this should not be read to suggest that existing law does not authorize comprehensive regulation.

582. The APCA limits the stringency of some regulations that the EQB may adopt. These limitations are unlikely to apply to regulations limiting GHG emissions even assuming that they are constitutional under the Court’s decisions in *Robinson Twp.* and *PEDF*. Section 4004.2 of the APCA prohibits regulation beyond that necessary to meet the minimum requirements of the federal Clean Air Act for purposes of implementing section 109 of the Clean Air Act, which relates to “criteria pollutants” governed by National Ambient Air Quality Standards (“NAAQS”) established for GHGs. *See* 35 PA. CONS. STAT. § 4004.2 (2018). That section does not apply because EPA has not established a NAAQS for GHGs. Even if EPA establishes a NAAQS for GHGs in the future, it must be set at a level sufficient to protect public health and welfare. *See* 42 U.S.C. § 7409. Achieving and maintaining that NAAQS will require emissions reductions commensurate with the social cost of carbon so that the regulation described here would be consistent with that section. Further, the EQB may not establish “a more stringent performance or emission standard for hazardous air pollutant emissions from existing sources” than federal section 112 standards. 35 PA. CONS. STAT. § 4006.6(a) (2018); *see* PPL Generation, LLC v. Commonwealth, Dep’t of Env’tl. Prot., 986 A.2d 48, 50-51 (Pa. 2009). That section does not apply because greenhouse gases are not considered “hazardous air pollutants,” which is a narrow term referring to air pollutants that present “a threat of adverse human health effects.” *See* 42 U.S.C. §§ 7412(b)(1) (list of hazardous air pollutants that does not include greenhouse gases); 7412(b)(2) (criteria for revising the list, which emphasize that only pollutants which present a threat of adverse human health effects may be added and explicitly excludes substances added solely “due to [their] adverse effects on the environment.”).

583. *Commonwealth, Dep’t of Env’tl. Res. v. Pa. Power Co.*, 384 A.2d 273, 284-85 (Pa. Commw. Ct.1978) (“After careful consideration of the CAA, the APCA and the pertinent legislative histories thereto, we must agree with DER and conclude that the purpose behind the APCA and the provisions contained therein is to provide the people of this Commonwealth with air which is of a higher quality than that required by federal law.”), *rev’d in part* on other grounds, 426 A.2d 995 (1980).

regulations.⁵⁸⁴ In addition, the Pennsylvania Supreme Court recognized that Article I, § 27 authorizes DEP to adopt regulations going beyond the statutory minimum in order to implement a statute’s legislative purposes.⁵⁸⁵ In *Funk*, as previously noted, the Commonwealth Court noted that DEP and other state respondents “acknowledge that the General Assembly, through the APCA, bestowed upon them a duty to promulgate and implement rules and regulations to reduce CO₂ and GHG emissions.”⁵⁸⁶

The APCA also contains sufficient authority to extend regulations throughout the economy, by going “upstream” and regulating fossil fuels where it is impractical to regulate the emissions source. It is impractical to require that vehicles and individual homes and buildings measure emissions and surrender allowances.⁵⁸⁷ The RGGI program and the proposed Virginia emissions trading program cover only certain larger electricity-generating facilities,⁵⁸⁸ whose GHG emissions are measured and reported under federal law⁵⁸⁹ and can therefore be readily regulated. These programs nonetheless fail to capture the majority of GHG emissions⁵⁹⁰ and therefore allow intersectoral leakage. By contrast, the California-Quebec-Ontario cap-and-trade-program extends to all major air pollution emissions sources where emissions can be measured, and also extends to sectors where it is infeasible to regulate the emissions source.⁵⁹¹ That program also requires that those distributing fossil fuels within the state or importing electricity or fuels acquire allowances, and therefore captures the majority of GHG emissions and more effectively prevents leakage.⁵⁹² This vastly more effective program is authorized by existing law in Pennsylvania.

The APCA authorizes and gives the EQB the power and the duty to adopt regulations applicable to “all air contamination sources regardless of whether such source is required to be under permit by this act” and states that these regulations may “prohibit or regulate the combustion of certain fuels.”⁵⁹³ This authorization appears to encompass the broader and more effective California-Quebec-Ontario approach, particularly when read in light of the Commonwealth’s duty as a trustee under the ERA.

There are cogent reasons for adopting the broader California-Quebec-Ontario approach and interpreting the APCA to support that approach. Most notably, it prevents leakage between sectors subject to a carbon price and those not subject to a price. For example, if electricity prices rise as a result of putting a price on carbon emissions, and if the price of GHG emissions is not reflected in the price of motor vehicle fuels, this may discourage the purchase and use of electric vehicles, resulting in increased emissions of both GHGs and conventional pollutants. If electricity prices increase as a result of regulations and an equivalent price is not reflected in the price of natural gas and home heating oil, the price disparity may discourage electrification of the building sector and many industries. Electrification of

584. *Commonwealth, Dep’t of Env’tl Res.*, 384 A.2d at 284.

585. *Eagle Env’tl. II, L.P. v. Commonwealth, Dep’t of Env’tl. Prot.*, 144 A.3d 228 (2005).

586. *Id.* at 250.

587. These small sources are not individually regulated under federal or state law and are not required individually to obtain a permit or to measure or report emissions. Regulating the millions of sources individually would create an undue administrative burden for both the regulators and the regulated community. Indeed, EPA deemed it impractical to regulate even larger sources of GHG emissions that would exceed a 250 ton per year threshold and, for that reason the Supreme Court in *UARG* defined the use of the term “pollutant” in the new source review provisions of the Clean Air Act to exclude carbon dioxide. Individual homes and vehicles generally emit GHGs at lower levels and their individual regulation would be even less feasible.

588. CO₂ Budget Training Program General Provisions, Model Rule, § XX-1.4(a), REG’L GREENHOUSE GAS INITIATIVE (2017), https://www.rggi.org/sites/default/files/Uploads/Program-Review/12-19-2017/Model_Rule_2017_12_19.pdf; 9 VA. ADMIN. CODE §§ 5-140-10 to 5-140-260, Regulation for Emissions Trading Programs, 9VAC5-140 (Jan. 8, 2018).

589. Mandatory Reporting of Greenhouse Gas Emissions, 40 C.F.R. § 90 (2012).

590. U.S. ENVTL. PROT. AGENCY, INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990-2016 ES-6 to ES-7 (2018), https://www.epa.gov/sites/production/files/2018-01/documents/2018_complete_report.pdf (In 2016, the entire electric power sector in the United States emitted 1,809.3 million metric tons of carbon dioxide, or 34.1 percent of the total 5,310.9 million metric tons of carbon dioxide emitted by all sectors (transportation, industrial, residential, commercial and U.S. territories in addition to the electric power sector) and 27.8 percent of the total 6,511.3 million metric tons of emissions when all categories of GHGs (methane, nitrous oxide, HFCs, PFCs, SF₆ and NF₃ in addition to carbon dioxide) are included).

591. CAL. CODE REGS. tit. 17, § 95811(a)-(h) (2012); *see also* CAL. LEGISLATIVE ANALYST’S OFFICE, THE 2017-18 BUDGET: CAP-AND TRADE, 5 (2017), <http://www.lao.ca.gov/reports/2017/3553/cap-and-trade-021317.pdf>.

592. CAL. LEGISLATIVE ANALYST’S OFFICE, *supra* note 311.

593. 35 PA. CONS. STAT. § 4005(a)(1) (1992).

these sectors will be required to achieve carbon neutrality by mid-century, as required to conserve and maintain a stable climate.

As noted above, interstate emissions trading with uniform pricing is one of the mechanisms necessary to prevent leakage. The Pennsylvania Uniform Interstate Air Pollution Agreements Act authorizes participation in interstate trading programs.⁵⁹⁴ That Act encourages DEP to coordinate and cooperate with “State and local authorities of other states affected by air sheds or regional air masses lying partly within another state or states, or moving between or among this State and another state or states.”⁵⁹⁵ This statute, along with the broad authorizations in the APCA to address air pollution and to implement the Clean Air Act as interpreted by Pennsylvania courts, appears to authorize Pennsylvania to develop and participate in interstate trading arrangements that would put a price on carbon. These include RGGI; the broader programs being implemented by California, Quebec, and Ontario; the trading-ready program being developed by Virginia;⁵⁹⁶ or a similar interstate or regional arrangement involving emissions trading or other mechanisms to put a price on GHG emissions or otherwise limit those emissions.⁵⁹⁷

Under RGGI, allowances are auctioned by each state and a portion of the auction revenue (or a portion of the allowances themselves) must be devoted to strategic energy purposes.⁵⁹⁸ Although the APCA lacks specific authorization for auctions of emissions rights, a partial allowance auction has been implemented in Pennsylvania in the past, since the Title IV program under the federal Clean Air Act allocates some allowances by auction.⁵⁹⁹

More significantly, the *PEDF* decision suggests that an auction with a reserve price is constitutionally required to allow the beneficiaries of the trust to benefit from the program. As discussed below, allowances may be considered to represent ecosystem services in that they represent the limited remaining ability of the atmosphere to absorb additional GHG pollution without disruption. Because the revenues would derive from efforts to preserve the

594. 35 PA. CONS. STAT. §§ 4101-4106 (1972).

595. *Id.* at § 4103(a); *see also id.* at § 4101 (making it the policy of Pennsylvania to encourage interstate cooperation and agreements).

596. Joining or leaving RGGI is arguably an action within the purview of the governor’s executive power, even without other authority. Both the Governor of New York, in joining RGGI, and the Governor of New Jersey, in leaving RGGI, relied on their executive power. *See, e.g.*, *Thrun v. Cuomo*, 976 N.Y.S.2d 320, 323 (N.Y. App. Div. 2013); *In re Regional Greenhouse Gas Initiative*, No. A-4878-11T4 (N.J. Super. Ct., App. Div. March 25, 2014) (holding that notice and comment rulemaking is required before withdrawing rules implementing RGGI in response to Governor Christie’s withdrawal from RGGI). The Governor of Virginia has issued an Executive Order directing the creation of a cap-and-trade program for the electricity sector. Executive Directive 11 (2017), <http://governor.virginia.gov/media/9155/ed-11-reducing-carbon-dioxide-emissions-from-electric-power-facilities-and-growing-virginias-clean-energy-economy.pdf>. Pursuant to that Order, the State has published a proposed regulation that mirrors the RGGI program and would allow trading even without Virginia joining RGGI. *See* 9VAC5-140. Regulation for Emissions Trading Programs (adding 9VAC5-140-6010 through 9VAC5-140-6430), 34 VA. Reg. 924 (Jan. 8, 2018).

597. *See* 35 PA. CONS. STAT. § 4103(b). The Act imposes limitations on such agreements, requiring that DEP not delegate its enforcement authority to other states or agencies and limiting appropriation authority and authority to pledge credit. 35 PA. CONS. STAT. § 4105. However, these limitations would not prevent participation in RGGI or similar interstate trading programs, since these programs are premised on voluntary coordination where each state relies upon its own statutes and regulations and each state enforces its own requirements.

The APCA also includes a provision authorizing the DEP to cooperate with other states and interstate agencies to control and prevent air pollution, and “where appropriate formulate interstate air pollution control compacts or agreements for the submission thereof to the General Assembly.” 35 PA. CONS. STAT. § 4004(24). Although this provision might be read to suggest that legislative authority is necessary before Pennsylvania could join an interstate trading program and adopt any necessary regulations to implement the program, it seems directed to agreements that are binding on the state and therefore require Congressional consent under the compacts clause of the U.S. Constitution. U.S. CONST. art. I, § 10 cl. 3. The trading regimes being independently implemented by states are implemented through a non-binding memorandum of understanding under which each state enacts and enforces its own laws and regulations, and therefore likely would not require Congressional approval under the Compacts Clause or require legislative approval under the APCA. *See United States Steel Corp. v. Multistate Tax Commission*, 434 U.S. 452, 470 (1978) (holding that creation of an “active administrative body” without Congressional consent did not “enhance the political power of the member States in a way that encroaches upon the supremacy of the United States” and therefore did not violate the Compacts Clause. The Court based its decision upon the following factors: (1) there were no features that, on their face, infringed on the supremacy of the United States; (2) the Compact did not authorize any of the member states to “exercise any powers they could not exercise in its absence”; (3) there was no “delegation of sovereign power to the Commission” and the states retained “complete freedom to adopt or reject the rules and regulations of the Commission”; and (4) each state was “free to withdraw at any time”); *Northeast Bancorp v. Bd. of Governors of Fed. Reserve Sys.*, 472 U.S. 159 (1985).

598. *See 2005 RGGI Memorandum of Understanding*, ¶ G(1) (“25% of the allowances will be allocated for a consumer benefit or strategic energy purposes” as further defined in the paragraph), https://www.rggi.org/sites/default/files/Uploads/Design-Archive/MOU/MOU_12_20_05.pdf.

599. 42 U.S.C. § 7651.

environmental trust, these revenues could be considered the result of the sale of renewable ecosystem services, similar to revenue from timber sales on state forest land. *PEDF* applied the law of trusts to invalidate a distribution of trust principal but recognized that trust income from renewable services that did not deplete the trust corpus could be moved to the General Fund.⁶⁰⁰ The rule of prudence requires that a trustee manage a trust with the prudence that a reasonable person would manage his or her own affairs, considering the needs of beneficiaries, the need to preserve the corpus of the trust, and the amount and regularity of income.⁶⁰¹ Although this rule of prudence allows considerable discretion in managing a trust, it does not allow the trustee to give away either the principal or the income with no benefit to the beneficiaries or to favor one beneficiary over the other. Thus, the state auctions timber, minerals and other renewable and non-renewable resources produced by state forests. For this reason, an auction of GHG emissions allowances is not only authorized but arguably required in the absence of another rationale, such as preventing leakage.

VI. ISSUES RELATING TO POSSIBLE LIMITATIONS ON AWARD OF ALLOWANCES AND USE OF REVENUES

PEDF restricted the General Assembly's ability to direct lease revenues to the unrestricted general fund based on the Court's conclusion that the Pennsylvania Constitution required the principal of the environmental trust created by the ERA to be retained for the purposes set forth in the Constitution.⁶⁰² We have argued that *PEDF* restricts the Commonwealth's ability to award allowances without recovering income for the beneficiaries. We also have argued that the ERA both authorizes an auction with a reserve price based on the social cost of carbon and requires a mechanism that both limits GHG emissions to a level consistent with that required to prevent climate disruption and provides reasonable income to the beneficiaries of the ERA's trust. In this section, we address the limits of these requirements with respect to GHG emissions allowances and proceeds from the auction or sale of those allowances.

The law of trusts does not put handcuffs on a trustee. Rather, it imposes a rule of prudence, requiring that a trustee manage a trust with the prudence that a reasonable person would manage his or her own affairs, considering the needs of beneficiaries, the need to preserve the corpus, the trust, and the amount and regularity of income.⁶⁰³ Instead of being considered the proceeds from the liquidation of the principal of the trust, auction revenues are more properly considered to constitute income from measures to manage the trust corpus, much like income from sustainable harvest of timber. Therefore, the proceeds from these revenues can be used for any purpose, provided the use accrues to the benefit of the trust's beneficiaries.⁶⁰⁴ Likewise, the trustee need not receive income equal to the social cost of carbon in all instances regardless of the outcome, but may award allowances for a lesser cost or even no cost where the Commonwealth, as a prudent business person, could conclude this would serve the best interest of the beneficiaries. For example, awarding allowances at a lower cost or no cost would be prudent where necessary to prevent leakage that would drive business from the Commonwealth without achieving a necessary reduction in GHG emissions. However, these situations should be treated as exceptions to the general rule and should be applied only as prudence demands.

A. *PEDF's Implications with Respect to Use of Revenues from GHG Emissions Auction*

Questions have arisen as to whether *PEDF* has implications with respect to potential mechanisms to put a price on carbon. Without additional legislation, proceeds from an auction would be deposited in the General Fund.⁶⁰⁵ If *PEDF* restricts use of these revenues, the decision would remove a significant incentive for Pennsylvania to impose a price on carbon through an allowance auction. The proceeds of a carbon tax or auction could be used to promote a

600. Pa. Env'tl. Def. Found. v. Commonwealth, 161 A.3d 911, 935-36 (Pa. 2017).

601. RESTATEMENT (THIRD) OF TRUSTS § 90 (2007); *see also* Harvard Coll. v. Amory, 26 Mass (9 Pick) 446 (1830).

602. *See PEDF*, 161 A.3d at 934.

603. RESTATEMENT (THIRD) OF TRUSTS § 90 (2007); *see also* Harvard Coll., 26 Mass (9 Pick) 446.

604. *See* RESTATEMENT (THIRD) OF TRUSTS § 90 (2007); *see also* Harvard Coll., 26 Mass (9 Pick) 446.

605. 72 PA. CONS. STAT. § 8 (1991).

variety of important fiscal objectives.⁶⁰⁶ In addition, the current and the on-going budget crisis in Pennsylvania has created a very significant incentive for the General Assembly to adopt legislation establishing a GHG emission fee or auction and trade program or to allow the EQB's adoption of regulations establishing an auction, so as to generate revenue to fill the gap in the General Fund.⁶⁰⁷

PEDF should not restrict the use of revenues from a GHG auction. The analysis of this issue differs according to how one views the auction. In this regard, there are two ways of looking at the auction of allowances. On one hand, one can view the auction of allowances as a regulatory mechanism to reduce GHG emissions. On the other hand, one can view the auction of allowances as a charge for the sale of a public natural resource, either: (1) the air, (2) the limited capacity of the atmosphere to absorb GHG emissions without disrupting the climate, or (3) the costs that will be imposed on future generations from carbon dioxide emissions (*i.e.* "ecosystem services"—one of the natural values of the environment).⁶⁰⁸ In both economic and legal theory, the auction has characteristics of both a regulatory mechanism and a charge. However, because differing legal and political considerations apply depending upon whether the fee/auction is characterized as a regulatory mechanism or as a fee for ecosystem services, we will address the considerations applicable to each rationale separately.

If the auction is examined through the regulatory lens, *PEDF* should have no impact on use of the revenues. An auction of allowances is simply one of several regulatory mechanisms to reduce emissions. In this way it is no different from a regulatory emission limit. Under this lens, the auction is a mechanism that acts to preserve the corpus of the trust created by the ERA. Its imposition is therefore consistent with the trustee's duty to preserve the corpus of the trust and there should be no restrictions on the use of revenues.

Characterizing the auction/fee as purely a regulatory measure, however, has both legal and political disadvantages. Treating the auction as purely a regulatory measure under the APCA might undermine the argument for an auction with a meaningful reserve price. The APCA lacks specific legislative authorization for an auction or a reserve price, so that regulations establishing an auction and a reserve price without further action by the General Assembly depend to some degree upon authorization under the ERA. Treating the auction as purely a regulatory mechanism may also undermine the argument that the reserve price should be set equal to the social cost of carbon rather than the far lower reserve prices seen in the California and RGGI programs, which are lower than the marginal cost necessary to prevent further climate disruption. Perhaps more significantly, characterizing the auction as a regulatory mechanism rather than the purchase of ecosystem services could be less palatable to those conservatives who support climate action. The conservative case for a carbon fee is based on the principle that GHG emitters should be charged a fee for the cost of the risk of environmental or other damage that will arise from use of the environment/ecosystem services, rather than the notion that regulation should be expanded.⁶⁰⁹

On the other hand, if one looks at the revenues from the GHG fee/auction as payments for ecosystem services, there is a risk that arguments will be raised that these revenues cannot be devoted to the General Fund to help address

606. See McKinstry, Rose & Ripp, *Incentive-Based Approaches to Greenhouse Gas Mitigation in Pennsylvania*, 14 WIDENER L.J. at 218-21.

607. Mary Soderberg and Josh Shapiro, *Pennsylvania In Peril: A Financial Crisis*, THE WOLF TRANSITION (Nov. 19, 2014), <http://www.wolftransitionpa.com/sections/blog/pennsylvania-fiscal-crisis>. Although this source was prepared immediately after Governor Wolf's election, the state of finances has not improved, and the budget continues to rely upon sales of assets and transfers that the Supreme Court in *PEDF* found illegal. See PA. OFFICE OF THE BUDGET, 2017-18 BUDGET IN BRIEF (2017), <http://www.budget.pa.gov/PublicationsAndReports/CommonwealthBudget/Documents/2017-18%20Proposed%20Budget/2017-18%20Budget%20In%20Brief%20-%20Web.pdf>.

608. Ecosystem services have been defined as "benefits people obtain from ecosystems. These include provisioning services such as food and water; regulating services such as regulation of floods, drought, land degradation, and disease; supporting services such as soil formation and nutrient cycling; and cultural services such as recreational, spiritual, religious and other nonmaterial benefits," including a stable climate. UNEP SECRETARIAT OF THE CONVENTION ON BIOLOGICAL DIVERSITY, BEST POLICY GUIDANCE FOR THE INTEGRATION OF BIODIVERSITY AND ECOSYSTEM SERVICES IN STANDARDS, CBD Technical Series No. 73 (2012) at 14, <https://www.cbd.int/doc/publications/cbd-ts-73-en.pdf>.

609. See, *e.g.*, Marc Gunther, *Climate Converts: The Conservatives Who Are Switching Sides on Warming*, YALE ENVIRONMENT 360 (Mar. 30, 2017), <http://e360.yale.edu/features/climate-converts-the-conservatives-who-are-switching-sides-on-climate-change>; Jerry Taylor, *The Conservative Case for a Carbon Tax*, NISKANEN CTR. (Mar. 23, 2015), <https://niskanencenter.org/wp-content/uploads/2015/03/The-Conservative-Case-for-a-Carbon-Tax1.pdf>; Bob Litterman, *What is the Right Price for Carbon Emissions*, 36 REGULATION 38 (2013), <https://object.cato.org/sites/cato.org/files/serials/files/regulation/2013/6/regulation-v36n2-1-1.pdf>.

Pennsylvania's budget crisis but must be retained as part of the corpus of the ERA trust. Although there is a risk that this argument may be raised, close examination of the *PEDF* decision, and the facts presented there, suggest that this argument should not prevail. Even if this argument prevails, it would not require retention of all revenues or even any revenues.

The legislation at issue in *PEDF* diverted revenues that had been devoted to the maintenance of the corpus of the trust away from that purpose and impaired DCNR's ability to maintain parks and forests, which also constitute the corpus of the trust.⁶¹⁰ In contrast, the establishment of a GHG auction and generation of revenues would not divert any existing, similarly committed revenues away from the trust or impair the Commonwealth's ability to maintain and conserve public natural resources. It would instead create new revenues by a mechanism that would also maintain and conserve the corpus of the trust.

It should be noted that, even if the fee/auction is viewed as *both* a regulatory mechanism and the sale of a natural resource, the trustee should be entitled to distribute income to the beneficiaries as long as the revenue does not deplete or impair the trust corpus. In *PEDF*, the Commonwealth was selling non-renewable resources and depleting the corpus of the trust, which should not be depleted.⁶¹¹ A GHG auction preserves the capital and produces the equivalent of dividend income. Since the application of the income will benefit the beneficiaries, that income could go to the General Fund. In fact, because the social cost of carbon is set at the marginal cost/value of avoided future damage to trust resources, all revenues equal to the social cost of carbon come from measures to preserve the trust principal and can be considered income. As long as the principal is maintained, and income is provided for the benefit of the beneficiaries, the rule of prudence should be satisfied.

B. *PEDF's Implications with Respect to Award of Allowances*

We argue that allowances, as attributes of the environmental trust, should generally be auctioned, just as other sustainable products of the environmental trust should be auctioned. We also argue that the auction should include a reserve price based on the social cost of carbon to assure that the measures undertaken in response to the cap-and-trade program will include the measures necessary to prevent human-caused climate disruption. This does not require an ironclad rule. Under the rule of prudence applicable to trustees, certain exceptions may be appropriate to prevent or moderate leakage, while still preserving the corpus of the trust and producing a stream of income to the trust's beneficiaries.⁶¹²

First, under the rule of prudence, in order to prevent leakage, Pennsylvania could allow distribution of allowances free of charge or at a reduced rate to industries subject to international or interstate competition where necessary to preserve those industries' international markets. Because the allowances will have a value equal to or greater than the reserve price in the auction, these industries will still have strong incentive to reduce emissions and rely on electricity rather than fossil fuels. However, they will be able to price their products competitively and they will no longer have an incentive to move their operations to a state or nation without regulation where those operations would result in leakage. This approach will need to be employed cautiously, so as to avoid perverse results.⁶¹³

Second, it may be appropriate to provide for a lower reserve price initially if warranted to assure adequate long-term income. The RGGI and California-Quebec-Ontario programs all include significantly lower auction minimum reserve prices,⁶¹⁴ as well as cost containment reserves that provide for the release of additional allowances if allowance

610. Pa. Evtl. Def. Found. v. Commonwealth, 161 A.3d 911, 937-39 (Pa. 2017).

611. *Id.*

612. See RESTATEMENT (THIRD) OF TRUSTS § 90 (2007); see also Harvard Coll. v. Amory, 26 Mass (9 Pick) 446 (1830).

613. For example, as discussed in *supra* note 265, in industries outside the electricity sector with international markets (such as steel), it may be worthwhile to award free or reduced cost allowances based on the prior year's unit production, with the number of free allowances per unit of production decreasing over time. That approach would have perverse results, however, if it were applied to the electricity sector, since it would encourage production even where that production would increase overall emissions. In the electricity sector, an allowance would represent income and, if tied to production, would allow a lower bid, removing the incentive to switch dispatch away from units with higher emissions. Therefore, industry structure should be carefully assessed and exceptions to the general rule allowed only where strictly warranted.

614. CAL. CODE REGS. tit. 17, § 95911(c) (2017); RGGI Model Rule § XX-1.2 (2017) (definition of "minimum reserve price"), https://rggi.org/sites/default/files/Uploads/Program-Review/12-19-2017/Model_Rule_2017_12_19.pdf.

prices exceed a value significantly lower than the social cost of carbon.⁶¹⁵ The proposed Virginia program closely follows RGGI.⁶¹⁶ If the Pennsylvania reserve price is set too high and trading is allowed, this may reduce the number of allowances that buyers will purchase from Pennsylvania, significantly depleting the income to be received by the trust beneficiaries. Therefore, Pennsylvania could initially establish a reserve price more consistent with California's reserve price. All of the other state trading programs call for reductions in the caps, increases in the reserve prices, and increases in the triggers for releasing cost containment reserves, such that the prices will approach the social price of carbon.⁶¹⁷ Moreover, because the social cost of carbon increases significantly if action imposing an adequate price on emissions is delayed,⁶¹⁸ accepting a lower price today will mean that the price to be paid eventually will be higher.⁶¹⁹ Thus, the rule of prudence provides the Commonwealth with flexibility.

VII. BLOCKING ACTION BY THE GENERAL ASSEMBLY PREVENTING IMPLEMENTATION OF GHG REGULATION

Perhaps the clearest implication of the *PEDF* and *Robinson Township* decisions is that Article I, § 27 may be relied upon to invalidate actions by the General Assembly aimed at blocking the implementation of regulations establishing meaningful limits on GHG emissions. The General Assembly can exercise a variety of powers to attempt to block the adoption of regulations limiting emissions of GHGs and having the effect of putting a price on those emissions.⁶²⁰ The General Assembly could also seek to block those regulations through its appropriations power or by adopting legislation repealing the regulations and removing the EQB's authority to regulate.

Robinson Township invalidated legislation that removed powers from municipalities and the DEP that allowed those municipalities and the DEP to exercise their duties as trustees.⁶²¹ *PEDF*'s holding makes it clear that the Commonwealth's duty as a trustee applies to all types of actions, including appropriations. *PEDF* could be relied upon to invalidate the General Assembly's action, just as the transfer of funds through the budget process was invalidated

615. CAL CODE REGS. tit. 17, § 95913 (2017); RGGI Model Rule §§ XX-1.2 (2017) (definition of "CO₂ cost containment reserve allowance or CO₂ CCR allowance"), XX-9.2(b), https://rggi.org/sites/default/files/Uploads/Program-Review/12-19-2017/Model_Rule_2017_12_19.pdf.

616. See Regulation for Emissions Trading Programs, *supra* note 243.

617. Arguably, the RGGI and California-Quebec-Ontario reserve prices are currently too low to drive necessary reductions, since the social cost of carbon is based on the economically efficient marginal cost of the damage averted. Because the allowance prices obtained in RGGI auctions have been insufficient even to prevent existing nuclear facilities from premature closure, New York promulgated regulations requiring that electricity distribution companies purchase ZECs based on the social cost of carbon from existing nuclear generation units to put a sufficient value on their emissions-free electricity. The New York Clean Energy Standard upheld in *Coal. for Competitive Elec. v. Zibelman*, 272 F. Supp. 3d 554, 561 (S.D.N.Y. 2017, *aff'd* No. 17-2654-cv (2d Cir. Sept. 27, 2018) (quoting CES Order, App'x E, at 1), was designed to further New York's policy to reduce GHG emissions by preserving existing emissions free electricity provided by New York's nuclear plants and by encouraging the development of additional emissions-free electricity from renewable generation sources. It was motivated, in part, by the announcements that the Fitzpatrick and Ginna nuclear plants would close due to financial stresses caused by low electricity prices created by the oversupply of natural gas from shale gas resources, as well as by the failure of the RGGI prices to impose sufficient costs for CO₂ emissions from fossil-fired electricity generation. *Id.* at 562, n.5.

618. Daniel et. al., *supra* note 120 at 38-39; see also Litterman, *supra* note 331; Litterman, Daniel & Wagner, *supra* note 218, at 43.

619. Increasing prices in later years, when there is a lower cap, will help maintain total revenues.

620. For example, the General Assembly might adopt legislation such as the Pennsylvania Greenhouse Gas Regulation Implementation Act, 71 PA. CONS. STAT. §§ 1362.1-1362.4, (2014), where the General Assembly required legislative review of Pennsylvania's submission of its implementation plan for the Clean Power Plan. Unless the Act is construed to make it constitutional, it provides a possible mechanism for an unconstitutional one-house veto of the plan. See PA. CONST. art. I, §27 (stating that Pennsylvania's natural resources are a public trust), art. IV, §§ 9,15 (requiring passage of laws, resolutions and votes by both houses and presentment to the governor); *Commonwealth v. Sessoms*, 516 Pa. 365, 532 A.2d 775 (1987) (invalidating legislative veto); *MCT Transportation, Inc. v. Philadelphia Parking Auth.*, 60 A.3d 899 (Pa. Commw. Ct. 2013) (holding that approval of a rule under a similar procedure did not constitute valid legislative action consistent with separation of powers principles and specifically disapproving of the process as a one-house veto). The General Assembly might also attempt to invalidate a regulation pursuant to the process prescribed in the Regulatory Review Act, 71 PA. CONS. STAT. §§ 745.1-745.15 (1982).

621. *Robinson Twp. v. Commonwealth*, 83 A.3d 901, 977-85 (Pa. 2013).

in *PEDF*. Even the *Funk* decision recognized that the ERA could be used to invalidate legislation that impaired rights guaranteed by the ERA.⁶²²

Legislation blocking a regulation required to “maintain and conserve” a stable climate, repealing such a regulation, replacing a regulation with a weaker version that did not maintain and conserve a stable climate, or removing the power to regulate GHGs from the EQB would all likely be unconstitutional violations of the ERA under the reasoning in *PEDF* and *Robinson Township*.

CONCLUSION

The precise contours of Article I, § 27 rights, enunciated in *Robinson Township* and *PEDF*, as they relate to GHG regulation and emissions pricing have not been litigated. Nevertheless, those opinions provide substantial support both for meaningful regulation of GHG emissions by Pennsylvania and for a regulated emissions price sufficient to put the Commonwealth on a path to deep decarbonization and economic modernization.

If these decisions are extended to support an Article I, § 27 mandate to regulate GHGs as suggested here, that extension can also have national and international significance. Many states and nations have similar provisions in their constitutions or public trust doctrines, and the scholarly constitutional jurisprudence of the Pennsylvania Supreme Court may be persuasive to these other jurisdictions.

622. *Funk* cited *Cnty. Coll. of Delaware Cty. v. Fox*, 20 Pa. Commw. 335, 342 A.2d 468, 473 (1975) for the proposition that “the ERA “could operate *only to limit such powers as had been expressly delegated by proper enabling legislation.*” *Funk v. Wolf*, 144 A.3d 228, 249 (Pa. Commw. Ct. 2016), *aff’d without opinion*, 158 A.3d 642 (Pa. 2017) (emphasis in *Funk*).

**CHAPTER 147: PENNSYLVANIA CAP ON GREENHOUSE GAS EMISSIONS AND
MARKET-BASED COMPLIANCE MECHANISMS**

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Subchapter 1: Purpose, Findings and Definitions

§ 147.000. Purpose.

The purpose of this article is to reduce emissions of greenhouse gases associated with entities identified in this article through the establishment, administration, and enforcement of the Pennsylvania Greenhouse Gas Cap-and-Trade Program by applying an aggregate greenhouse gas allowance budget on covered entities and providing a trading mechanism for compliance instruments.

§ 147.101. Findings

(a) Disruption of the climate caused by the buildup of greenhouse gases in the atmosphere poses an existential threat to the health and welfare of present and future generations of Pennsylvanians and to the conservation of the public natural resources of the Commonwealth with respect to which the Commonwealth has a duty as a trustee under Article I, § 27 of the Pennsylvania Constitution.

(b) The scientists on Intergovernmental Panel on Climate Change have reached the consensus scientific conclusion that the worst adverse impacts of climate disruption cannot be avoided unless worldwide greenhouse gas emissions are reduced by approximately 45% from 2010 levels by 2030 and to the point that the emissions are no greater than uptake by long term sinks by 2050.

(c) Pennsylvania's emissions of greenhouse gases are globally significant, exceeding the emissions of most nations of the world on both an absolute and per capita basis. The world cannot achieve the emissions reductions necessary to prevent the worst adverse impacts of climate disruption unless Pennsylvania achieves the same or greater emissions reductions as the Intergovernmental Panel on Climate C has found are necessary for the world as a whole.

(d) Any delay by Pennsylvania in achieving the emissions reductions required under this chapter will cause irreparable harm to the conservation of public natural resources protected by Article I, § 27 of the Constitution and the health and welfare of current and future generations of Pennsylvanians.

(e) After they are released from fossil sinks into the ambient air greenhouse gases persist and their concentrations increase. The most common greenhouse gas, carbon dioxide,

will persist in the environment for millennia after being released from fossil sinks as the result of the combustion of fossil fuels or alteration of carbonate rocks.

(f) If the emissions reductions required under this chapter are delayed, slowed or reduced, the additional greenhouse gases added to the atmosphere will persist, causing irreparable harm and requiring greater and more costly emissions reductions or costly efforts to remove them from the atmosphere in the future.

(g) Based on scientifically defensible determinations of the social cost of carbon with an appropriate risk premium, the benefits of this chapter will far outweigh any costs.

(h) By putting an appropriate price on emissions of greenhouse gases and providing long term certainty to its industries, this chapter will encourage the development of sustainable industries and sustainable development that will strengthen the economy of the Commonwealth.

§ 147.002. Definitions.

(a) Definitions. For the purposes of this article, the following definitions shall apply: “Account Viewing Agent” means an individual authorized by a registered entity to view all the information on the entity’s accounts contained in the tracking system.

“Accounts Administrator” means the entity acting in the capacity to administer the accounts identified in this regulation. This may be DEP or could be an entity with whom DEP enters into a contract.

“Activity-Shifting Leakage” means increased GHG emissions or decreased GHG removals that result from the displacement of activities or resources from inside the offset project’s boundary to locations outside the offset project’s boundary as a result of the offset project activity.

“Additional” means, in the context of offset credits, greenhouse gas emission reductions or removals that exceed any greenhouse gas reduction or removals otherwise required by law, regulation or legally binding mandate, that result in emissions reductions that will not otherwise reduce the demand for allowances, and exceed any greenhouse gas reductions or removals that would occur if an offset were not provided to the project.

“Adverse Offset Verification Statement” means an Offset Verification Statement rendered by a verification body attesting that the verification body cannot say with reasonable

assurance that the submitted Offset Project Data Report is free of an offset material misstatement, or that it cannot attest that the Offset Project Data Report conforms to the requirements of this article or applicable Compliance Offset Protocol.

“Allowance” means a limited tradable authorization to emit up to one metric ton of carbon dioxide equivalent.

“Alternate Account Representative” means an individual designated pursuant to section 147.132 to take actions on an entity’s accounts.

“Annual Allowance Budget” means the number of Pennsylvania Greenhouse Gas Allowances associated with one year of the Cap-and-Trade Program in subchapter 6.

“Asset Controlling Supplier” means any entity that owns or operates inter-connected electricity generating facilities or serves as an exclusive marketer for these facilities even though it does not own them, and is assigned a supplier-specific identification number and system emission factor by DEP for the wholesale electricity procured from its system and imported into Pennsylvania. Asset Controlling Suppliers are considered specified sources.

“Assigned Emissions” or “Assigned Emissions Level” means an amount of emissions, in CO₂e, assigned to the reporting entity by the Department.

“Associated Gas” or “Produced Gas” means a natural gas that is produced in association with the production of crude oil.

“Auction” means the process of selling Pennsylvania Greenhouse Gas Allowances, along with allowances from External Greenhouse Gas Emissions Trading Systems with which Pennsylvania has linked its Cap-and-Trade Program pursuant to subchapter 12, by offering them up for bid, taking bids, and then distributing the allowances to winning bidders.

“Auction Purchase Limit” means the limit on the number of allowances one entity or a group of affiliated entities may purchase from the share of allowances sold at a quarterly auction.

“Auction Reserve Price” means a price for allowances below which bids at auction would not be accepted.

“Auction Settlement Price” means the price announced by the Auction Administrator at the conclusion of each quarterly auction. It is the price which all successful bidders will pay for

their allowances and also the price to be paid to those entities which consigned allowances to the auction.

“Authorized Project Designee” means an entity authorized by an Offset Project Operator to act on behalf of the Offset Project Operator. The Authorized Project Designee must be a Primary Account Representative or Alternate Account Representative on the Offset Project Operator’s Holding Account.

“Aviation Gasoline” means a complex mixture of volatile hydrocarbons, with or without additives, suitably blended to be used in aviation reciprocating engines.

“Banking” means the holding of compliance instruments from one compliance period for the purpose of sale or surrender in a future compliance period.

“Barrel of Gas Processed Equivalent,” means the volume of associated gas, waste gas, and natural gas processed converted to barrels at 5.8 MMBtu per barrel.

“Barrel of Oil Equivalent,” with respect to reporting of oil and gas production, means barrels of crude oil produced, plus associated gas and dry gas produced, converted to barrels at 5.8 MMBtu per barrel.

“Biodiesel” means a diesel fuel substitute produced from nonpetroleum renewable resources that meet the registration requirements for fuels and fuel additives established by the U.S. Environmental Protection Agency under section 211 of the Clean Air Act. It includes biodiesel that is all of the following: registered as a motor vehicle fuel or fuel additive under 40 C.F.R. Part 79; a mono-alkyl ester; meets American Society for Testing and Material designation ASTM D 6751-08 (Standard Specification for Biodiesel Fuel Blendstock (B100) for Middle Distillate Fuels, 2008); intended for use in engines that are designated to run on conventional diesel fuel; and derived from nonpetroleum renewable resources.

“Biogas” means gas that is produced from the breakdown of organic material in the absence of oxygen. Biogas is produced in processes including anaerobic digestion, anaerobic decomposition, and thermochemical decomposition. These processes are applied to biodegradable biomass materials, such as manure, sewage, municipal solid waste, green waste, and waste from energy crops, to produce landfill gas, digester gas, and other forms of biogas.

“Biomass” means non-fossilized and biodegradable organic material originating from plants, animals, and microorganisms, including products, by-products, residues, and waste from agriculture, forestry, and related industries as well as the non-fossilized and biodegradable organic fractions of industrial and municipal wastes, including gases and liquids recovered from the decomposition of non-fossilized and biodegradable organic material. For the purpose of this article, biomass includes both Pennsylvania Alternative Energy Portfolio Standard (“AEPS”) eligible and non-eligible biomass.

“Biomass-Derived Fuels” or “Biomass Fuels” or “Biofuels” means fuels derived from biomass.

“Biomethane” means biogas that meets pipeline quality natural gas standards.

“Budget Year” means the calendar year to which an annual allowance budget is assigned pursuant to subchapter 6.

“Business-as-Usual Scenario” means the set of conditions reasonably expected to occur within the offset project boundary in the absence of the financial incentives provided by offset credits“ and that result in emissions reductions that will not otherwise reduce the demand for allowances or are not otherwise required by law.

“Calendar Year” means the time period from January 1 through December 31.

“Cap” means the total number of Pennsylvania GHG Allowances that the Department issues for a calendar year.

“Cap-and-Trade Program” means the requirements of this chapter.

“Carbon Dioxide” or “CO₂” means the most common of the primary greenhouse gases, consisting on a molecular level of a single carbon atom and two oxygen atoms.

“Carbon Dioxide Equivalent” or “CO₂ equivalent” or “CO₂e” means the number of metric tons of CO₂ emissions with the same global warming potential as one metric ton of another greenhouse gas. Global warming potential values shall be determined consistent with the definition of Carbon Dioxide Equivalent in the MRR.

“Carbon Dioxide Supplier” or “CO₂ Supplier” means (a) facilities with production process units located in the Commonwealth of Pennsylvania that capture a CO₂ stream for

purposes of supplying CO₂ to another entity or facility or that capture the CO₂ stream in order to utilize it for geologic sequestration where capture refers to the initial separation and removal of CO₂ from a manufacturing process or any other process, (b) facilities with CO₂ production wells located in the Commonwealth of Pennsylvania that extract or produce a CO₂ stream for purposes of supplying CO₂ for commercial applications or that extract a CO₂ stream in order to utilize it for geologic sequestration, (c) exporters (out of the Commonwealth of Pennsylvania Pennsylvania) of bulk CO₂ that export CO₂ for the purpose of geologic sequestration, (d) exporters (out of the Commonwealth of Pennsylvania Pennsylvania) of bulk CO₂ that export for purposes other than geologic sequestration, and (e) importers (into the Commonwealth of Pennsylvania Pennsylvania) of bulk CO₂. This source category is focused on upstream supply and is not intended to place duplicative compliance obligations on CO₂ already covered upstream. The source category does not include transportation or distribution of CO₂; purification, compression, or processing of CO₂; or on-site use of CO₂ captured on-site.

“Carbon Stock” means the quantity of carbon contained in an identified GHG reservoir.

“Cogeneration” means an integrated system that produces electric energy and useful thermal energy for industrial, commercial, or heating and cooling purposes, through the sequential or simultaneous use of the original fuel energy. Cogeneration must involve onsite generation of electricity and useful thermal energy and some form of waste heat recovery. Some examples of cogeneration include: (a) a gas turbine or reciprocating engine generating electricity by combusting fuel, which then uses a heat recovery unit to capture useful heat from the exhaust stream of the turbine or engine; (b) Steam turbines generating electricity as a byproduct of steam generation through a fired boiler; (c) Cogeneration systems in which the fuel input is first applied to a thermal process such as a furnace and at least some of the heat rejected from the process is then used for power production. For the purposes of this chapter, a combined-cycle power generation unit, where none of the generated thermal energy is used for industrial, commercial, or heating and cooling purposes (these purposes exclude any thermal energy utilization that is either in support of or a part of the electricity generation system), is not considered a cogeneration unit.

“Combustion Emissions” means greenhouse gas emissions occurring during the exothermic reaction of a fuel with oxygen.

“Compliance Account” means an account created by the accounts administrator for a covered entity or opt-in covered entity with a compliance obligation, to which the entity transfers compliance instruments to meet its annual and full compliance period compliance obligations.

“Compliance Instrument” means an allowance or offset, issued by DEP or by an External Greenhouse Gas Emissions Trading System to which Pennsylvania has linked its Cap-and-Trade Program pursuant to subchapter 12, or sector-based offset credit. Each compliance instrument can be used to fulfill a compliance obligation equivalent to up to one metric ton of CO₂e.

“Compliance Obligation” means the quantity of verified reported emissions or assigned emissions for which an entity must submit compliance instruments to DEP.

“Compliance Offset Protocol” means an offset protocol approved by the Department or approved by reference under this chapter.

“Compliance Period” means the three-year period for which the compliance obligation is calculated for covered entities except for the first compliance period under section 147.140(a).

“Compressed natural gas” or “CNG” means natural gas in high-pressure containers that is highly compressed (though not to the point of liquefaction), typically to pressures ranging from 2900 to 3600 psi.

“Conflict of Interest” means, for purposes of this article, a situation in which, because of financial or other activities or relationships with other persons or organizations, a person or body is unable or potentially unable to render an impartial Offset Verification Statement of a potential client’s Offset Project Data Report, or the person or body’s objectivity in performing offset verification services is or might be otherwise compromised.

“Conservative” means, in the context of offsets, utilizing project baseline assumptions, emission factors, and methodologies that are more likely than not to understate net GHG reductions or GHG removal enhancements for an offset project to address uncertainties affecting the calculation or measurement of GHG reductions or GHG removal enhancements.

“Consumer Price Index for All Urban Consumers” means a measure that examines the changes in the price of a basket of goods and services purchased by urban consumers and is published by the U.S. Bureau of Labor Statistics.

“Contract Description Code” means the alphanumeric code assigned by an exchange to a particular exchange product that differentiates the product from others traded on the exchange.

“Counterparty” means the opposite party in a bilateral agreement, contract, or transaction.

“Covered Entity” means an entity within Pennsylvania that has one or more of the processes or operations and has a compliance obligation as specified in subchapter 7 of this regulation; and that has emitted, produced, imported, manufactured, or delivered in 2016 or any subsequent year more than the applicable threshold level specified in section 147.112(a) of this rule.

“Crediting Baseline” refers to the reduction of absolute GHG emissions below the business-as-usual scenario or reference level across a jurisdiction’s entire sector in a sector-based crediting program after the imposition of greenhouse gas emission reduction requirements or incentives.

“Crediting Period” means the pre-determined period for which an offset project will remain eligible to be issued DEP offset credits or registry offset credits for verified GHG emission reductions or GHG removal enhancements.

“Data Year” means the calendar year in which emissions occurred.

“Deforestation” means direct human-induced conversion of forested land to non-forested land.

“Delivered Electricity” means electricity that was distributed from a PSE and received by a PSE or electricity that was generated, transmitted, and consumed.

“DEP ID” means, for the purposes of this article, the unique identification number assigned to each facility, supplier, and electric power entity that reports GHG emissions to the DEP pursuant to MRR.

“DEP Offset Credit” means a tradable compliance instrument issued by DEP that represents a GHG reduction or GHG removal enhancement of one metric ton of CO₂e. The GHG reduction or GHG removal enhancement must be real, additional, quantifiable, permanent, verifiable, and enforceable. DEP offset credits may only be issued for GHG emission reductions or GHG removal enhancements that occur during a “Reporting Period,” as defined in this section.

“Diesel Fuel” means Distillate Fuel No. 1 and Distillate Fuel No. 2, including dyed and non-taxed fuels.

“Direct Delivery of Electricity” or “directly delivered” means electricity that meets any of the following criteria:

The facility has a first point of interconnection with a Pennsylvania PUC regulated transmission or distribution utility for distribution to Pennsylvania users;

The electricity is scheduled for delivery from a specified source into Pennsylvania via a continuous physical transmission path into Pennsylvania; or

There is an agreement to dynamically transfer electricity from the facility to Pennsylvania.

“Direct GHG Emission Reduction” means a GHG emission reduction from applicable GHG emission sources, GHG sinks, or GHG reservoirs that are under control of the Offset Project Operator or Authorized Project Designee.

“Direct GHG Removal Enhancement” means a GHG removal enhancement from applicable GHG emission sources, GHG sinks, or GHG reservoirs under control of the Offset Project Operator or Authorized Project Designee.

“Distillate Fuel No. 1” has a maximum distillation temperature of 550 F at the 90 percent recovery point and a minimum flash point of 100 F and includes fuels commonly known as Diesel Fuel No. 1 and Fuel Oil No. 1 but excludes kerosene. This fuel is further subdivided into categories of sulfur content: High Sulfur (greater than 500 ppm), Low Sulfur (less than or equal to 500 ppm and greater than 15 ppm), and Ultra Low Sulfur (less than or equal to 15 ppm).

“Distillate Fuel No. 2” has a minimum and maximum distillation temperature of 540 F and 640 F at the 90 percent recovery point, respectively, and includes fuels commonly known as Diesel Fuel No. 2 and Fuel Oil No. 2. This fuel is further subdivided into categories of sulfur content: High Sulfur (greater than 500 ppm), Low Sulfur (less than or equal to 500 ppm and greater than 15 ppm), and Ultra Low Sulfur (less than or equal to 15 ppm).

“Distillate Fuel No. 4” means a distillate fuel oil with a minimum flash point of 131 °F made by blending distillate fuel oil and residual fuel oil.

“Distillate Fuel Oil” means a classification for one of the petroleum fractions produced in conventional distillation operations and from crackers and hydrotreating process units. The generic term “distillate fuel oil” includes kerosene, kerosene-type jet fuel, diesel fuels (Diesel Fuels No. 1, No. 2, and No. 4), and fuel oils (Fuel Oils No. 1, No. 2, and No. 4).

“Distilled spirit” means a spirit made from the separation of alcohol and a fermented product.

“District Heating Facility” means a facility that, at a central plant, produces hot water, steam, and/or chilled water that is distributed through underground pipes to buildings and facilities connected to the system that are not part of the same facility. District Heating Facility does not include a facility that produces electricity.

“Dry Gas” means a natural gas that is produced from gas wells not associated with the production of crude oil.

“Electric Power Entity” means electricity importers and exporters and retail providers.

“Electrical Distribution Utility(ies)” or “EDU” means an entity that owns and/or operates an electrical distribution system that provides electricity to retail end users in Pennsylvania.

“Electricity Generating Facility” means a facility that generates electricity and includes one or more generating units at the same location.

“Electricity Importers” deliver imported electricity to Pennsylvania from a generation facility in a jurisdiction that is not linked to the Pennsylvania cap-and-trade programs as identified by the PJM GATS system. Generation.

“Emissions” means the release of greenhouse gases into the atmosphere from sources and processes in a facility, including from the combustion of transportation fuels such as natural gas, petroleum products, and natural gas liquids. In the context of offsets, “emissions” means the release of greenhouse gases into the atmosphere from sources and processes within an offset project boundary.

“Emissions Data Report” or “greenhouse gas emissions data report” or “report” means the report prepared by an operator or supplier each year and submitted by electronic means to DEP that provides the information required by MRR. The emissions data report is for the submission of required data for the calendar year prior to the year in which the report is due. For

example, a 2020 emissions data report would cover emissions and product data for the 2020 calendar year and would be reported in 2021.

“Emissions Efficiency Benchmark” or “GHG emissions efficiency benchmark” means a performance standard used to evaluate GHG emissions efficiency between and amongst similar facilities or operations in the same industrial sector.

“End User” means a final purchaser of an energy product, such as electricity, thermal energy, or natural gas not for the purposes of retransmission or resale. In the context of natural gas consumption, an “end user” is the point to which natural gas is delivered for consumption.

“Enforceable” means the authority for DEP to hold a particular party liable and to take appropriate action if any of the provisions of this chapter are violated.

“Enhanced Oil Recovery” or “EOR” means the use of certain methods such as steam (thermal EOR), water flooding or gas injection into existing wells to increase the recovery of crude oil from a reservoir. In the context of this rule, EOR also applies to injection of critical phase carbon dioxide into a crude oil reservoir to enhance the recovery of oil.

“Enterer” means an entity that imports, into Pennsylvania, motor vehicle fuel, diesel fuel, fuel ethanol, biodiesel, or non-exempt biomass-derived fuel or renewable fuel and who is the importer of record under federal customs law or the owner of fuel upon import into Pennsylvania, if the fuel is not subject to federal customs law. Only entities that import the fuels specified in this definition outside the bulk transfer/terminal system are subject to reporting under the regulation.

“Entity” means a person, firm, association, organization, partnership, business trust, corporation, limited liability company, company, or government agency.

“Entity type” means the type of entity based on the qualification to register in the tracking system as a covered entity (pursuant to section 147.111), an opt-in covered entity (pursuant to section 147.113), or a voluntarily associated entity (pursuant to section 147.114).

“Exchange” means a central marketplace with established rules and regulations where buyers and sellers meet to conduct trades.

“Expected Settlement Date” is a date specified in a transaction agreement on which all requirements in the transaction agreement are expected to be settled, exclusive of any contingencies specified in the agreement.

“Expected Termination Date” is a date specified in a transaction agreement on which all requirements in the transaction agreement are expected to be completed, exclusive of any contingencies specified in the agreement.

“Exported Electricity” means electricity generated inside Pennsylvania and delivered to serve load located outside of Pennsylvania and outside of a state that does not have an External GHG ETS that is linked to the Pennsylvania Cap-and-Trade Program, as identified by GATS.

“External Greenhouse Gas Emissions Trading System” or “External GHG ETS” means an administrative system, other than the Pennsylvania Cap-and-Trade Program, that controls greenhouse gas emissions from sources in its program.

“Facility,” unless otherwise specified in relation to natural gas distribution facilities and petroleum and natural gas production facilities as defined in section 147.002(a), means:

Any physical property, plant, building, structure, source, or stationary equipment located on one or more contiguous or adjacent properties in actual physical contact or separated solely by a public roadway or other public right-of-way and under common ownership or common control, that emits or may emit any greenhouse gas. Operators of military installations may classify such installations as more than a single facility based on distinct and independent functional groupings within contiguous military properties.

With respect to natural gas distribution, “Facility” means the collection of all distribution pipelines and metering-regulating stations that are operated by a Local Distribution Company (LDC) within the Pennsylvania that is regulated as a separate operating company by a public utility commission or that are operated as an independent municipally-owned distribution system.

With respect to petroleum and natural gas production, “Facility” means all petroleum and natural gas equipment on a well-pad, or associated with a well pad or to which emulsion is transferred and CO₂ EOR operations that are under common ownership or common control including leased, rented, or contracted activities by a

petroleum and natural gas production owner or operator and that are located in a single hydrocarbon basin. When a commonly owned cogeneration plant is within the basin, the cogeneration plant is only considered part of the petroleum and natural gas production facility if the petroleum and natural gas production facility operator or owner has a greater than fifty percent ownership share in the cogeneration plant. Where a person or entity owns or operates more than one well in a basin, then all petroleum and natural gas production equipment associated with all wells that the person or entity owns or operates in the basin would be considered one facility.

Natural gas processing equipment that is owned and/or operated by the facility owner/operator and located within the same basin, is considered “associated with a well pad” and is included with the petroleum and natural gas production facility, unless such equipment is required to be reported as part of a separate petroleum and natural gas processing facility.

With respect to natural gas processing, “Facility” means equipment associated with the separation of natural gas liquids (NGLs) or non-methane gases from produced natural gas, including separation of sulfur and carbon dioxide, that processes an annual average throughput of 25 MMscf per day or greater, or whose owner/operator does not also own/operate a production facility in the same air basin.

“Final Point of Delivery” means the site of delivery identified by GATS.

“First Deliverer of Electricity” or “First Deliverer” means the owner or operator of an electricity generating facility in Pennsylvania or an electricity importer.

“First Point of Receipt” means the generation source specified by GATS.

“Flash Point” of a volatile liquid is the lowest temperature at which it can vaporize to form an ignitable mixture in air.

“Fluorinated Greenhouse Gas” means sulfur hexafluoride (SF₆), nitrogen trifluoride (NF₃), and any fluorocarbon except for controlled substances as defined at 40 CFR Part 82, subpart A and substances with vapor pressures of less than 1 mm of Hg absolute at 25 C. With these exceptions, “fluorinated GHG” includes any hydrofluorocarbon; any perfluorocarbon; any

fully fluorinated linear, branched, or cyclic alkane, ether, tertiary amine, or amino ether; any perfluoropolyether; and any hydrofluoropolyether.

“Forest Buffer Account” means a holding account for DEP offset credits issued to forest offset projects. It is used as a general insurance mechanism against unintentional reversals, for all forest offset projects listed under a Compliance Offset Protocol.

“Forest Offset Project” means an offset project that uses or has used either the offset protocols identified in section 147.273(a)(2)(C)4.

“Forest Owner” means the owner of any interest in the real (as opposed to personal) property involved in a forest offset project, excluding government agency third party beneficiaries of conservation easements. Generally, a Forest Owner is the owner in fee of the real property involved in a forest offset project. In some cases, one entity may be the owner in fee while another entity may have an interest in the trees or the timber on the property, in which case all entities or individuals with interest in the real property are collectively considered the Forest Owners, however, a single Forest Owner must be identified as the Offset Project Operator.

“Fossil Fuel” means natural gas, petroleum, coal, or any form of solid, liquid, or gaseous fuel derived from such material for the purpose of creating useful heat.

“Fractionates” means the process of separating natural gas liquids into their constituent liquid products.

“Fuel Analytical Data” means data collected about fuel usage (including mass, volume, and flow rate) and fuel characteristics (including heating value, carbon content, and molecular weight) to support emissions calculation.

“Fuel Cell” means a device that converts the chemical energy of a fuel and an oxidant directly into electrical energy without using combustion. Fuel cells require a continuous source of fuel and oxidant to operate.

“Fuel supplier” means a supplier of petroleum products, a supplier of biomass-derived transportation fuels, a supplier of natural gas including operators of interstate and intrastate pipelines, a supplier of liquefied natural gas, or a supplier of liquefied petroleum gas as specified in the MRR.

“Fugitive Emissions” means those emissions which are unintentional and could not reasonably pass through a stack, chimney, vent, or other functionally-equivalent opening.

“Full Offset Verification” means, for the purposes of this article, offset verification services that meet all the requirements of sections 147.277.1 and 147.277.2, including a site visit.

“Gas” means the state of matter distinguished from the solid and liquid states by: relatively low density and viscosity; relatively great expansion and contraction with changes in pressure and temperature; the ability to diffuse readily; and the spontaneous tendency to become distributed uniformly throughout any container.

“Gaseous Hydrogen” means hydrogen in a gaseous state.

“GATS” or the “Generation Attribute Tracking System” means the system applied by PJM to track attributes of electricity generation where the electricity is delivered within the PJM system, including emissions associated with the generation of the electricity, the location of the generation and surrender of allowances for such generation.

“Geologic Sequestration” means the process of injecting CO₂ captured from an emissions source into deep subsurface rock formations for permanent storage or disposal.

“Global Warming Potential” or “GWP” means the ratio of the time-integrated radiative forcing from the instantaneous release of one kilogram of a trace substance relative to that of one kilogram of a reference gas, *i.e.*, CO₂.

“Greenhouse Gas” or “GHG” means carbon dioxide (CO₂), methane (CH₄), nitrogen trifluoride (NF₃), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and other fluorinated greenhouse gases as defined in this section.

“Greenhouse Gas Emission Reduction” or “GHG Emission Reduction” or “Greenhouse Gas Reduction” or “GHG Reduction” means a calculated decrease in GHG emissions relative to a project baseline over a specified period of time.

“Greenhouse Gas Emissions Source” or “GHG Emissions Source” means, in the context of offset credits, any type of emitting activity that releases greenhouse gases into the atmosphere.

“Greenhouse Gas Removal” or “GHG Removal” means the calculated total mass of a GHG removed from the atmosphere over a specified period of time.

“Greenhouse Gas Removal Enhancement” or “GHG Removal Enhancement” means a calculated increase in GHG removals relative to a project baseline.

“Greenhouse Gas Reservoir” or “GHG Reservoir” means a physical unit or component of the biosphere, geosphere, or hydrosphere with the capability to store, accumulate, or release a GHG removed from the atmosphere by a GHG sink or a GHG captured from a GHG emission source.

“Greenhouse Gas Sink” or “GHG Sink” means a physical unit or process that removes a GHG from the atmosphere.

“HD-5” or “Special Duty Propane” means a consumer grade of liquefied petroleum gas containing a minimum of 90% propane, a maximum of 5% propylene, and a maximum of 5% butane as specified in ASTM D1835-05.

“HD-10” means a fuel that meets the specifications for propane used in transportation fuel.

“Hold” in the context of a compliance instrument, is to have the serial number assigned to that instrument registered into an account assigned to an entity that is registered into the Pennsylvania Cap-and-Trade Program or an External Greenhouse Gas Emissions Trading System to which Pennsylvania has linked its Cap-and-Trade Program pursuant to subchapter 12, or an account under the control of the Department.

“Holding Account” or “General Holding Account” means an account created for each covered entity, opt-in covered entity, or voluntarily associated entity to hold compliance instruments.

“Hydrocarbon” means a chemical compound containing predominantly carbon and hydrogen.

“Hydrofluorocarbon” or “HFC” means a class of GHGs consisting of hydrogen, fluorine, and carbon.

“Hydrogen” means diatomic molecular hydrogen, the lightest of all gases.

“Imported Electricity” means electricity generated outside Pennsylvania and delivered to serve load located inside Pennsylvania.

“Importer of fuel” means an entity that imports fuel into Pennsylvania and who is the importer of record under federal customs law. For imported fuel not subject to federal customs law, the “importer of fuel” is the owner of the fuel upon its entering into Pennsylvania if the eventual transfer of ownership of the product to an end user or marketer located in Pennsylvania occurs at a location inside Pennsylvania. However, where the transfer of ownership of the product fuel to a Pennsylvania end user or marketer occurs at a location outside Pennsylvania, the “importer of fuel” is the producer, marketer, or distributor that is the seller of the fuel the end user or marketer located inside Pennsylvania.

“Initial Crediting Period” means the crediting period that begins with the date that the first GHG emission reductions or GHG removal enhancements took place according to the first Positive Offset or Qualified Positive Offset Verification Statement that is received by DEP.

“Intentional Reversal” means any reversal, except as provided below, which is caused by a forest owner’s negligence, gross negligence, or willful intent, including harvesting, development, and harm to the area within the offset project boundary, or caused by approved growth models overestimating carbon stocks. A reversal caused by an intentional back burn set by, or at the request of, a local, state, or federal fire protection agency for the purpose of protecting forestlands from an advancing wildfire that began on another property through no negligence, gross negligence, or willful misconduct of the forest owner is not considered an intentional reversal but, rather, an unintentional reversal. Receiving Adverse Offset Verification Statements on two consecutive offset verifications after the end of the final crediting period will be considered an intentional reversal.

“Interstate Pipeline” means any entity that owns or operates a natural gas pipeline delivering natural gas to consumers in Pennsylvania and is subject to rate regulation by the Federal Energy Regulatory Commission.

“Intrastate Pipeline” means any pipeline or piping system wholly within Pennsylvania that is delivering natural gas to end-users and is not regulated as a public utility gas corporation by the Pennsylvania Public Utility Commission (PUC), is not a publicly owned natural gas utility, and is not regulated as an interstate pipeline by the Federal Energy Regulatory Commission. This definition includes petroleum and natural gas production facilities and natural gas processing facilities that deliver pipeline and/or non-pipeline quality natural gas to one or

more end users. Facility operators that operate an interconnection pipeline that connects their facility to an interstate pipeline, or that share an interconnection pipeline to an interstate pipeline with other nearby facilities, are not considered intrastate pipeline operators. Facilities that receive gas from an upstream LDC and redeliver a portion of the gas to one or more adjacent facilities are not considered intrastate pipelines.

“Inventory Position” means a contractual agreement with the terminal operator for the use of the storage facilities and terminaling services for the fuel.

“Issue” or “Issuance” means, in the context of offset credits, the creation of DEP offset credits or registry offset credits equivalent to the number of verified GHG reductions or GHG removal enhancements for an offset project over a specified period of time. In the context of allowances, issue means the placement of an allowance into an account under the control of the Department.

“Kerosene” is a light petroleum distillate with a maximum distillation temperature of 400 F at the 10-percent recovery point, a final maximum boiling point of 572 F, a minimum flash point of 100 F, and a maximum freezing point of -22 F. Included are No. 1-K and No. 2-K, distinguished by maximum sulfur content (0.04 and 0.30 percent of total mass, respectively), as well as all other grades of kerosene called range or stove oil. Kerosene does not include kerosene-type jet fuel.

“Kerosene-Type Jet Fuel” means a kerosene-based product used in commercial and military turbojet and turboprop aircraft. The product has a maximum distillation temperature of 400 °F at the 10 percent recovery point and a final maximum boiling point of 572 °F. Included are Jet A, Jet A-1, JP-5, and JP-8.

“Lead Verifier” means, for purposes of this article, a person that has met all of the requirements in this chapters for verifying offsets and who may act as the lead verifier of an offset verification team providing offset verification services or as a lead verifier providing an independent review of offset verification services rendered.

“Lead Verifier Independent Reviewer” or “Independent Reviewer” means, for purposes of this article, a lead verifier within a verification body who has not participated in conducting offset verification services for an Offset Project Developer or Authorized Project Designee for

the current Offset Project Data Report and who provides an independent review of offset verification services rendered for an Offset Project Developer or Authorized Project Designee as required in section 147.277.1(b)(3)(R). The independent reviewer is not required to also meet the requirements for a sector specific or offset project specific verifier.

“Less Intensive Verification” means, for the purposes of this article, the offset verification services provided in interim years between full offset verifications of an Offset Project Data Report; less intensive verification of an Offset Project Data Report only requires data checks and document reviews of an Offset Project Data Report based on the analysis and risk assessment in the most current sampling plan developed as part of the most recent full offset verification services. This level of verification may only be used if the offset verifier can provide findings with a reasonable level of assurance.

“Linkage” means the approval of compliance instruments from an external greenhouse gas emission trading system (GHG ETS) to meet compliance obligations under this chapter (including approval by rule_, and the reciprocal approval of compliance instruments issued by Pennsylvania to meet compliance obligation in an external GHG ETS, unless reciprocal approval is not required as provided in this chapter

“Liquefied natural gas” or “LNG” means natural gas (primarily methane) that has been liquefied by reducing its temperature to -260 degrees Fahrenheit at atmospheric pressure.

“Liquefied Petroleum Gas” or “LPG” means a flammable mixture of hydrocarbon gases used as a fuel. LPG is primarily mixtures of propane, butane, propene (propylene) and ethane. The most common specification categories are propane grades, HD-5, HD-10, and commercial grade propane. LPG also includes both odorized and non-odorized liquid petroleum gas, and is also referred to as propane.

“Liquid Hydrogen” means hydrogen in a liquid state.

“Long-Term Contract” means a contract for the delivery of electricity entered into before [the date of approval of this chapter as a proposal by the EQB], for the term of five years or more.

“Mandatory Reporting Regulation” or “MRR” means the Regulation for the Mandatory Reporting of Greenhouse Gas Emissions as set forth in this chapter.

“Market Index” means any published index of quantities or prices based on results of market transactions.

“Market-Shifting Leakage,” in the context of an offset project, means increased GHG emissions or decreased GHG removals outside an offset project’s boundary due to the effects of an offset project on an established market for goods or services.

“Marketer” means a purchasing-selling entity that delivers electricity and is not a retail provider.

“Methane” or “CH₄” means a GHG consisting on the molecular level of a single carbon atom and four hydrogen atoms.

“Metric Ton” or “MT” means a common international measurement for mass, equivalent to 2,204.6 pounds or 1.1 short tons.

“Monitoring” means, in the context of offset projects, the ongoing collection and archiving of all relevant and required data for determining the project baseline, project emissions, and quantifying GHG reductions or GHG removal enhancements that are attributable to the offset project.

“Municipal Solid Waste” or “MSW” means shall have the definition provided in the Pennsylvania Solid Waste Management Act, 35 P.S. § 6018.101 *et seq.* and implementing regulations.

“Natural Gas” means a naturally occurring mixture or process derivative of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the earth’s surface, of which its constituents include methane, heavier hydrocarbons, and carbon dioxide. Natural gas may be field quality (which varies widely) or pipeline quality. For the purposes of this rule, the definition of natural gas includes similarly constituted fuels such as field production gas, process gas, and fuel gas.

“Natural Gas Liquids” or “NGLs”, means those hydrocarbons in natural gas that are separated from the gas as liquids through the process of absorption, condensation, adsorption, or other methods. Natural gas liquids can be classified according to their vapor pressures as low (condensate), intermediate (natural gasoline), and high (liquefied petroleum gas) vapor pressure. Generally, such liquids consist of ethane, propane, butanes, pentanes, and higher molecular

weight hydrocarbons. Bulk NGLs refers to mixtures of NGLs that are sold or delivered as undifferentiated product from natural gas processing plants.

“Natural gas supplier” or “supplier of natural gas” means any entity that distributes or uses natural gas in Pennsylvania and is described below:

- (A) A public utility gas corporation operating in Pennsylvania;
- (B) A publicly owned natural gas utility operating in Pennsylvania; or
- (C) The operator of an intrastate pipeline not included in section 147.111(c)(1) or section 147.111(c)(2) that distributes natural gas directly to end users. For the purposes of this article, an interstate pipeline is not a natural gas supplier.

“Non-exempt Biomass derived CO₂” means CO₂ emissions resulting from the combustion of fuel not listed under section 147.152.2(a), or that is not verifiable under the MRR.

“Non-thermal enhanced oil recovery” or “non-thermal EOR” means the process of using methods other than thermal EOR, which may include water flooding or CO₂ injection, to increase the recovery of crude oil from a reservoir.

“Notice of Delegation” means a formal notice used to delegate authority to make an electronic submission to the accounts administrator.

“Offset Material Misstatement” means a discrepancy, omission, misreporting, or aggregation of the three, identified in the course of offset verification services that leads an offset verification team to believe that an Offset Project Data Report contains errors resulting in an overstatement of the reported total GHG emission reductions or GHG removal enhancements greater than 5.00 percent. Discrepancies, omissions, or misreporting, or an aggregation of the three, that result in an understatement of total reported GHG emission reductions or GHG removal enhancements in the Offset Project Data Report is not an offset material misstatement.

“Offset Project” means all equipment, materials, items, or actions that are directly related to or have an impact upon GHG reductions, project emissions, or GHG removal enhancements within the offset project boundary.

“Offset Project Boundary” is defined by and includes all GHG emission sources, GHG sinks or GHG reservoirs that are affected by an offset project and under control of the Offset

Project Operator or Authorized Project Designee. GHG emissions sources, GHG sinks or GHG reservoirs not under control of the Offset Project Operator or Authorized Project Designee are not included in the offset project boundary.

“Offset Project Commencement” means, unless otherwise specified in a Compliance Offset Protocol, the date of the beginning of construction, work, or installation for an offset project involving physical construction, other work at an offset project site, or installation of equipment or materials. For an offset project that involves the implementation of a management activity, “offset project commencement” means, unless otherwise specified in a Compliance Offset Protocol, the date on which such activity is first implemented.

“Offset Project Data Report” means the report prepared by an Offset Project Operator or Authorized Project Designee each Reporting Period that provides the information, documentation, and attestations required by this article or a Compliance Offset Protocol. An unattested report is not a valid Offset Project Data Report, and therefore will not satisfy any deadlines regarding submittal of an Offset Project Data Report.

“Offset Project Listing” or “Listing” means the information, documentation and attestations required by this article or a Compliance Offset Protocol that an Offset Project Operator or Authorized Project Designee has submitted to DEP or an Offset Project Registry, that has been reviewed for completeness by DEP and/or the Offset Project Registry and publicly listed by DEP or the Offset Project Registry for an initial or renewed crediting period. An Offset Project Listing must include the attestations required by this article in order to be considered complete by DEP or the Offset Project Registry.

“Offset Project Operator” means the entity or entities with legal authority to implement the offset project. Only a Primary Account Representative or Alternate Account Representative, as defined in this article, may sign Listing documents, an Offset Project Data Report, a Request for Issuance, or attestations on behalf of the Offset Project Operator.

“Offset Project Registry” means an entity that meets the requirements of section 147.286 and is approved by DEP that lists offset projects, collects Offset Project Data Reports, facilitates verification of Offset Project Data Reports, and issues registry offset credits for offset projects being implemented using a Compliance Offset Protocol.

“Offset Protocol” means a documented set of procedures and requirements to quantify ongoing GHG reductions or GHG removal enhancements achieved by an offset project and calculate the project baseline. Offset protocols specify relevant data collection and monitoring procedures, emission factors, and conservatively account for uncertainty and activity-shifting and market-shifting leakage risks associated with an offset project.

“Offset Verification” means a systematic, independent, and documented process for evaluation of an Offset Project Operator’s or Authorized Project Designee’s Offset Project Data Report against DEP’s Compliance Offset Protocols and this article for calculating and reporting project baseline emissions, project emissions, GHG reductions, and GHG removal enhancements.

“Offset Verification Services” means services provided during offset verification as specified in sections 147.277.1 and 147.277.2, including reviewing an Offset Project Operator’s or Authorized Project Designee’s Offset Project Data Report, verifying its accuracy according to the standards specified in this article and applicable Compliance Offset Protocol, assessing the Offset Project Operator’s or Authorized Project Designee’s compliance with this article and applicable Compliance Offset Protocol, and submitting an Offset Verification Statement to DEP or an Offset Project Registry. For purposes of this article, Offset Verification Services begin with the Planning Meeting and end with the issuance of DEP offset credits, and do not include preliminary planning activities such as scheduling meetings and site visits, or preparing contract documents.

“Offset Verification Statement” means the final statement rendered by a verification body attesting whether an Offset Project Operator’s or Authorized Project Designee’s Offset Project Data Report is free of an offset material misstatement, and whether the Offset Project Data Report conforms to the requirements of this article and applicable Compliance Offset Protocol, and containing the attestations required pursuant to this article.

“Offset Verification Team” means all of those working for a verification body, including all subcontractors, to provide offset verification services for an Offset Project Operator or Authorized Project Designee.

“On-purpose hydrogen gas” means molecular hydrogen gas produced as a result of a process or processes dedicated to producing hydrogen, including, without limitation, steam methane reforming and electrolysis.

“Operational Control” for a facility subject to this article means the authority to introduce and implement operating, environmental, health, and safety policies. In any circumstance where this authority is shared among multiple entities, the entity holding the permit to operate from the local air pollution control district or air quality management district is considered to have operational control for purposes of this article.

“Operator” means the entity, including an owner, having operational control of a facility, and shall include any operator listed on a permit.

“Opt-in Covered Entity” means an entity that meets the requirements of 147.111 that does not exceed the inclusion thresholds set forth in section 147.112 and may elect to voluntarily opt-in to the Cap-and-Trade Program and be willing to be subject to the requirements set forth in this article.

“Over-the-Counter” means the trading of carbon compliance instruments, contracts, or other instruments not executed or entered for clearing on any exchange.

“Ozone Depleting Substances” or “ODS” means a compound that contributes to stratospheric ozone depletion.

“Pennsylvania Greenhouse Gas Emissions Allowance” or “PA GHG Allowance” means an allowance issued by DEP and equal to up to one metric ton of CO₂ equivalent.

“Perfluorocarbons” or “PFCs” means a class of greenhouse gases consisting on the molecular level of carbon and fluorine.

“Permanent” means, in the context of offset credits, either that GHG reductions and GHG removal enhancements are not reversible, or when GHG reductions and GHG removal enhancements may be reversible, that mechanisms are in place to replace any reversed GHG emission reductions and GHG removal enhancements to ensure that all credited reductions endure for at least 100 years.

“Permanent Retirement Registry” means the publicly available registry in which the Department will record the retired compliance instruments.

“Petroleum” means oil removed from the earth and the oil derived from tar sands, and/or shale.

“Petroleum Refinery” or “Refinery” means any facility engaged in producing gasoline, gasoline blending stocks, naphtha, kerosene, distillate fuel oils, residual fuel oils, lubricants, or asphalt (bitumen) through distillation of petroleum or through re-distillation, cracking, or reforming of unfinished petroleum derivatives.

“Pipeline Quality Natural Gas” means, for the purpose of calculating emissions under MRR, natural gas having a high heat value greater than 970 Btu/scf and equal to or less than 1,100 Btu/scf, and which is at least ninety percent (90%) methane by volume, and which is less than five percent (5%) carbon dioxide by volume.

“Point of Delivery” or “POD” means the point on an electricity transmission or distribution system where a deliverer makes electricity available to a receiver or available to serve load or where electricity is imported into Pennsylvania.

“Point of Receipt” or “POR” means the point on an electricity transmission or distribution system where an electricity receiver receives electricity from a deliverer.

“Position Holder” means an entity that holds an inventory position in motor vehicle fuel, ethanol, distillate fuel, biodiesel, or renewable diesel as reflected in the records of the terminal operator or a terminal operator that owns motor vehicle fuel or diesel fuel in its terminal. “Position holder” does not include inventory held outside of a terminal, fuel jobbers (unless directly holding inventory at the terminal), retail establishments, or other fuel suppliers not holding inventory at a fuel terminal.

“Positive Emissions Data Verification Statement” means a verification statement rendered by a verification body attesting that the verification body can say with reasonable assurance that the covered emissions data in the submitted emissions data report is free of material misstatement and that the emissions data conforms to the requirements of MRR.

“Positive Offset Verification Statement” means an Offset Verification Statement rendered by a verification body attesting that the verification body can say with reasonable assurance that the submitted Offset Project Data Report is free of an offset material misstatement

and that the Offset Project Data Report conforms to the requirements of this article and applicable Compliance Offset Protocol.

“Positive Product Data Verification Statement” means a verification statement rendered by a verification body attesting that the verification body can say with reasonable assurance that the covered product data in the submitted emissions data report is free of material misstatement and that the product data conforms to the requirements of MRR.

“Power” means electricity, except where the context makes clear that another meaning is intended.

“Proceeds” means monies generated as a result of an auction or from sales from the Allowance Price Containment Reserve.

“Process” means the intentional or unintentional reactions between substances or their transformation, including the chemical or electrolytic reduction of metal ores, the thermal decomposition of substances, and the formation of substances for use as product or feedstock.

“Process Emissions” means the emissions from industrial processes (*e.g.*, cement production, ammonia production) involving chemical or physical transformations other than fuel combustion. For example, the calcination of carbonates in a kiln during cement production or the oxidation of methane in an ammonia process results in the release of process CO₂ emissions to the atmosphere. Emissions from fuel combustion to provide process heat are not part of process emissions, whether the combustion is internal or external to the process equipment.

“Process Unit” means the equipment assembled and connected by pipes and ducts to process raw materials and to manufacture either a final or intermediate product used in the onsite production of other products. The process unit also includes the purification of recovered byproducts.

“Producer” means a person who owns leases, operates, controls, or supervises a Pennsylvania production facility.

“Product Data Verification Statement” means the final statement rendered by a verification body attesting whether a reporting entity’s product data in their covered emissions data report is free of material misstatement, and whether the product data conforms to the requirements of the MRR.

“Professional Judgment” means the ability to render sound decisions based on professional qualifications and relevant greenhouse gas accounting and auditing experience.

“Project Area” means the property associated with the geographic boundaries of a forest project, as defined following the requirements of the relevant protocol from section 147.273(a)(2)(C)4.

“Project Baseline” means, in the context of a specific offset project, a conservative estimate of business-as-usual GHG emission reductions or GHG removal enhancements for the offset project’s GHG emission sources, GHG sinks, or GHG reservoirs within the offset project boundary.

“Project Emissions” means any GHG emissions associated with the implementation of an offset project that must be accounted for in the Offset Project Data Report.

“Proof Gallons” means one liquid gallon of distilled spirits that is 50% alcohol at 60 degrees F.

“Propane” is a paraffinic hydrocarbon with molecular formula C_3H_8 .

“Property Right” means any type of right to specific property whether it is personal or real property, tangible or intangible.

“Purchase Limit” means the maximum percentage of allowances that may be purchased by an entity of a group of affiliated entities at an allowance auction.

“Purchasing-Selling Entity” or “PSE” means entity that is identified under GATS or a NERC e-TAG for each physical path segment.

“Qualified Positive Emissions Data Verification Statement” means a statement rendered by a verification body attesting that the verification body can say with reasonable assurance that the covered emissions data in the submitted emissions data report is free of material misstatement and is in conformance with the of MRR, but the emissions data may include one or more other nonconformance(s) with requirements of MRR which do not result in a material misstatement.

“Qualified Positive Offset Verification Statement” means an Offset Verification Statement rendered by a verification body attesting that the verification body can say with

reasonable assurance that the submitted Offset Project Data Report is free of an offset material misstatement, but the Offset Project Data Report may include one or more nonconformance(s) with this chapter and the applicable Compliance Offset Protocol which do not result in an offset material misstatement. Nonconformance, in this context, does not include disregarding the explicit requirements of this article or applicable Compliance Offset Protocol and substituting alternative requirements not approved by the Department.

“Qualified Positive Product Data Verification Statement” means a statement rendered by a verification body attesting that the verification body can say with reasonable assurance that the covered product data in the submitted emissions data report is free of material misstatement and is in conformance with the MRR, but the product data may include one or more other nonconformance(s) with the requirements of MRR which do not result in a material misstatement.

“Qualified Thermal Output” means the thermal energy generated by a cogeneration unit or district heating facility that is sold to particular end-users and reported pursuant to the MRR and the thermal energy used on-site by industrial processes or operations and heating and cooling operations that is not in support of or a part of the electricity generation or cogeneration system and is reported pursuant to the MRR. Qualified thermal output does not include thermal energy that is vented, radiated, wasted, or discharged before it is utilized at industrial processes or operations, or for a facility with a cogeneration unit, any thermal energy generated by equipment that is not an integral part of the cogeneration unit.

“Quantifiable” means, in the context of offset projects, the ability to accurately measure and calculate GHG reductions or GHG removal enhancements relative to a project baseline in a reliable and replicable manner for all GHG emission sources, GHG sinks, or GHG reservoirs included within the offset project boundary, while accounting for uncertainty and activity-shifting leakage and market-shifting leakage.

“Quantitative Usage Limit” means a limit on the percentage of an entity’s compliance obligation that may be met by surrendering offset credits or other compliance instruments designated to be subject to the limit under this chapter.

“Radiative Forcing” means the change in the net vertical irradiance at the atmospheric boundary between the troposphere and the stratosphere due to an internal change or a change in

the external forcing of the climate system such as a change in the concentration of carbon dioxide or the output of the Sun.

“Real” means, in the context of offset projects, that GHG reductions or GHG enhancements result from a demonstrable action or set of actions, and are quantified using appropriate, accurate, and conservative methodologies that account for all GHG emissions sources, GHG sinks, and GHG reservoirs within the offset project boundary and account for uncertainty and the potential for activity-shifting leakage and market-shifting leakage.

“Reasonable Assurance” means a high degree of confidence that submitted data and statements are valid.

“Reference Level” means the quantity of GHG emission equivalents that have occurred during the normal course of business or activities during a designated period of time within the boundaries of a defined sector and a defined jurisdiction.

“Reformulated Gasoline Blendstock for Oxygenate Blending” or “RBOB” means unleaded gasoline.

“Register,” in the context of a compliance instrument, means the act of assigning the serial number of a compliance instrument into an account.

“Registrant” or “Registered Entity” means an entity that has completed the process for registration.

“Registry Offset Credit” means a credit issued by an Offset Project Registry for a GHG reduction or GHG removal enhancement of one metric ton of CO₂e. The GHG reduction or GHG removal enhancement must be real, additional, quantifiable, permanent, verifiable, and enforceable and may only be issued for offset projects using Compliance Offset Protocols. Pursuant to section 147.281.1, DEP may determine that a registry offset credit may be removed, retired, or cancelled from the Offset Project Registry system and issued as a DEP offset credit.

“Registry Services” means all services provided by a DEP approved Offset Project Registry in section 147.287.

“Regulatory Compliance” means fulfilling all local, regional, state, and national environmental and health and safety laws and regulations that apply based on the offset project

location and that directly apply to the offset project, including as specified in a Compliance Offset Protocol.

“Renewable diesel” means a motor vehicle fuel or fuel additive that is all of the following: registered as a motor vehicle fuel or fuel additive under 40 CFR Part 79; not a mono-alkyl ester; intended for use in engines that are designed to run on conventional diesel fuel; and derived from nonpetroleum renewable resources.

“Renewable Energy” means energy from sources that constantly renew themselves or that are regarded as practically inexhaustible. Renewable energy includes energy derived from solar, wind, geothermal, hydroelectric, wood, biomass, tidal power, sea currents, and ocean thermal gradients.

“Renewable Energy Credit” or “REC” shall mean an alternative energy credit or “AEC” as defined in the Pennsylvania Alternative Energy Portfolio Standards Act and shall have the same meaning in the Renewable Portfolio Standard in any ETS program to which the Pennsylvania cap-and-trade program is linked.

“Renewable Liquid Fuels” means fuel ethanol, biomass-based diesel fuel, other renewable diesel fuel and other renewable fuels.

“Reporting Period” means, in the context of offsets, the period of time for which an Offset Project Operator or Authorized Project Designee quantifies and reports GHG reductions or GHG removal enhancements covered in an Offset Project Data Report. An offset project’s Reporting Period is established in the project listing documentation, but may be modified by notifying DEP in writing or by providing updated listing information with the submittal of the Offset Project Data Report. Modifications to the Reporting Period are only allowed if DEP is notified prior to any deadlines being missed. The first reporting period for an offset project in an initial crediting period may consist of 6 to 24 consecutive months; all subsequent reporting periods in an initial crediting period and all reporting periods in any renewed crediting period must consist of 12 consecutive months. For offset projects developed using the Compliance Offset Protocol in section 147.273(a)(2)(C)1., there may only be one Reporting Period per offset project. The Reporting Period may not be longer than 12 months and there is no minimum timeframe imposed for the Reporting Period. For offset projects developed using the compliance

offset protocol in section 147.273(a)(2)(C)6., the Reporting Period is approximately 12 months; it may be less than or exceed 12 months.

“Reporting Year” means data year.

“Request for Issuance” refers to a request submitted by an Offset Project Operator or Authorized Project Designee to DEP seeking issuance of DEP offset credits based on an Offset Project Data Report, pursuant to the requirements of sections 147.281 and 147.281.1. A Request for Issuance must include the attestations required pursuant to this article.

“Reserve Price” see “Auction Reserve Price.”

“Reserve Sale Administrator” means the operator of sales from the Allowance Price Containment Reserve account, which may be the Department or an entity designated by the Department.

“Resource Shuffling” means any plan, scheme, or artifice undertaken by a First Deliverer of Electricity to substitute electricity deliveries from sources with relatively lower emissions for electricity deliveries from sources with relatively higher emissions to reduce its emissions compliance obligation. Resource shuffling does not include substitution of electricity deliveries from sources with relatively lower emissions for electricity deliveries from sources with relatively higher emissions resources when the substitution occurs pursuant to the conditions listed in section 147.152(b)(2)(A).

“Retail Provider” means an entity that provides electricity to retail end users in Pennsylvania.

“Retire” or “Retired” or “Retirement” means that the serial number for a compliance instrument is registered into the Retirement Account under the control of the Department. Compliance instruments registered into this account cannot be removed.

“Reversal” means a GHG emission reduction or GHG removal enhancement for which an DEP offset credit or registry offset credit has been issued that is subsequently released or emitted back into the atmosphere, or that is later determined to have never occurred. A reversal is either intentional or unintentional.

“Secretary” means the Secretary of the Pennsylvania Department of Environmental Protection, or his or her delegate.

“Sector” or “Sectoral,” when used in conjunction with sector-based crediting programs, means a group or subgroup of an economic activity, or a group or cross-section of a group of economic activities, within a jurisdiction.

“Sector-Based Crediting Program” is a GHG emissions-reduction crediting mechanism established by a country, region, or subnational jurisdiction in a developing country and covering a particular economic sector within that jurisdiction. A program’s performance is based on achievement toward an emissions reduction target for the particular sector within the boundary of the jurisdiction.

“Sector-Based Offset Credit” means a credit issued from a sector-based crediting program once the crediting baseline for a sector has been reached.

“Self-Generation of Electricity” means electricity dedicated to serving an electricity user on the same location as the generator. The system may be operated directly by the electricity user or by an entity with a contractual arrangement.

“Serial Number” means a unique number assigned to each compliance instrument for identification.

“Sequestration” means the removal and storage of carbon from the atmosphere in GHG sinks or GHG reservoirs through physical or biological processes.

“Source” means greenhouse gas source; or any physical unit, process, or other use or activity that releases a greenhouse gas into the atmosphere.

“Source of generation” or “generation source” means the generation source identified in GATS or on the physical path of NERC e-Tags.

“Specified Source of Electricity” or “Specified Source” means a facility or unit which is permitted to be claimed as the source of electricity delivered. The reporting entity must have either full or partial ownership in the facility/unit or a written power contract as defined in the MRR to procure electricity generated by that facility/unit. Specified facilities/units include cogeneration systems. Specified source also means electricity procured from an asset-controlling supplier recognized by DEP.

“Stand-Alone-Electricity Generating Facility” means an electricity generating facility whose primary business and sole industrial operation is electricity generation, and is not a cogeneration or bigeneration facility.

“Stationary” means neither portable nor self-propelled, and operated at a single facility.

“Supplier” means a producer, importer, exporter, position holder, interstate pipeline operator, or local distribution company of a fossil fuel or an industrial greenhouse gas.

“Thermal enhanced oil recovery” or “thermal EOR” means the process of using injected steam to increase the recovery of crude oil from a reservoir.

“Tracking System” means the Compliance Instrument Tracking System Service where DEP compliance instruments are issued, traded, and retired.

“Transaction,” when referring to an arrangement between registered entities regarding compliance instruments, means an understanding among registered entities to transfer the control of a compliance instrument from one entity to another, either immediately or at a later date.

“Transfer” of a compliance instrument means the removal of a compliance instrument from one account and placement into another account.

“Transfer Request” means the communication by an authorized account representative or an alternate authorized account representative to the accounts administrator to register into the tracking system the transfer of allowances between accounts.

“Transferred DEP Project” means an offset project which has been transferred from DEP or one Offset Project Registry, where it was previously listed, to DEP or another Offset Project Registry. The entity to which the offset project is transferred will indicate the applicable offset project status from the following list: “Proposed Project,” “Active DEP Project,” “Active Registry Project,” “Proposed Renewal,” “Active DEP Renewal,” and “Active Registry Renewal.”

“True-up allowance amount” is a quantity of Pennsylvania GHG allowances allocated for changes in production or allocation not properly accounted for in prior allocations pursuant to 147.191(b), 147.191(c)(2)(B), or 147.194(c).

“Unintentional Reversal” means any reversal, including wildfires or disease that is not the result of the forest owner’s negligence, gross negligence, or willful intent. Only trees identified as dead or dying, in the post-event inventory, as a result of the wildfire or disease will be removed from the project’s inventory and compensated from the Forest Buffer Account minus any salvage harvest accounted for under long-term storage.

“Unspecified Source of Electricity” or “Unspecified Source” means a source of electricity that is not a specified source at the time of entry into the transaction to procure the electricity.

“Urban Forest Offset Project” means an offset project that uses or has used either the offset protocols identified in section 147.273(a)(2)(C)3.

“Vented Emissions” means intentional or designed releases of CH₄ or CO₂ containing natural gas or hydrocarbon gas (not including stationary combustion flue gas), including process designed flow to the atmosphere through seals or vent pipes, equipment blowdown for maintenance, and direct venting of gas used to power equipment (such as pneumatic devices).

“Verifiable” means that an Offset Project Data Report assertion is well documented and transparent such that it lends itself to an objective review by an accredited verification body.

“Verification Body” means a firm accredited by DEP, which is able to render an offset verification statement and provide offset verification services for Offset Project Operators or Authorized Project Designees subject to providing an Offset Project Data Report under this article.

“Verifier” or “offset verifier” means an individual accredited by DEP to carry out offset verification services as specified in sections 147.277.1 and 147.277.2.

“Vintage Year” means the budget year to which an individual Pennsylvanian GHG allowance is assigned pursuant to subchapter 6.

“Voluntarily Associated Entity” or “General Market Participant” means any entity which does not meet the requirements of section 147.111 or 147.113 in this chapter and that intends to purchase, hold, sell, or voluntarily retire compliance instruments or an entity operating an offset project.

“Voluntary Renewable Electricity” or “VRE” means electricity produced or RECs associated with electricity, produced by a voluntary renewable electricity generator, and which has not and will not be sold or used to meet any other mandatory requirements in Pennsylvania or any other jurisdiction.

“Voluntary Renewable Electricity Participant” or “VRE Participant” means a voluntary renewable electricity generator, a REC marketer, or entity that purchases voluntary renewable electricity or RECs as an end-user or on behalf of an end-user and is seeking allowance retirement pursuant to section 147.141.1.

“Waste gas” means a natural gas that contains a greater percentage of gaseous chemical impurities than the percentage of methane. For purposes of this definition, gaseous chemical impurities may include carbon dioxide, nitrogen, helium, or hydrogen sulfide.

“Waste-to-Energy Facility” means a facility located in Pennsylvania that combusts eligible municipal or residual waste. The facility must operate in accordance with current air and solid water permits and generate and distribute electricity over the electric power grid for wholesale or retail customers of the grid located in Pennsylvania.

(b) The following acronyms apply:

“AEC” means alternative energy credit.

“AEPS” means the Alternative Energy Portfolio Standard.

“BAU” means business as usual.

“C” means Centigrade.

“CFR” means Code of Federal Regulations.

“CH₄” means methane.

“CO₂” means carbon dioxide.

“CO_{2e}” means carbon dioxide equivalent.

“Department” “DEP” or means the Pennsylvania Department of Environmental Protection.

“ETS” means Emission Trading System.

“F” means Fahrenheit.

“GHG” means greenhouse gas.

“GHG ETS” means greenhouse gas emissions trading system.

“GWP” means global warming potential.

“HFC” means hydrofluorocarbon.

“LPG” means liquefied petroleum gas.

“MMBtu” means one million British thermal units.

“MRR” means the Pennsylvania Department of Environmental Protection’s Regulation for the Mandatory Reporting of Greenhouse Gas Emissions.

“Mscf” means one thousand standard cubic feet.

“MWh” means megawatt-hour.

“MT” means metric tons.

“NAICS” means North American Industry Classification System.

“NGLs” means natural gas liquids.

“NERC” means North American Electric Reliability Corporation.

“N₂O” means “nitrous oxide.”

“PFC” means perfluorocarbon.

“PSE” or “Purchasing Selling Entity” means the entity that is identified on a NERC e-Tag for each physical path segment or otherwise identified by a similar PJM instrument..

“PUC” means the Public Utilities Commission.

“REC” means Renewable Energy Credit.

“REDD” means reducing emissions from deforestation and degradation.

“RPS” means a Renewable Portfolio Standard.

“SCF” means standard cubic foot.

“SF₆” means sulfur hexafluoride.

“TEAP” means the Technology and Economic Assessment Panel of the Montreal Protocol.

§ 147.003. Submittal of Required Information.

Different sections of this article identify information that must be submitted to DEP or maintained by the entity. The following general requirements apply to all information submissions unless otherwise specified:

(a) Information that is submitted electronically with electronic signatures, or by means other than original hardcopy with original handwritten signature, will have the same legal effect as if it were submitted in hardcopy form certified by a handwritten signature.

(b) Unless another deadline is specified, information requested by the Department must be submitted within 10 calendar days of the request.

Subchapter 2: Mandatory Reporting of Greenhouse Gases Regulation (“MRR”).

§ 147.100. Incorporation by Reference.

(a) The federal Mandatory Reporting of Greenhous Gases Regulation set forth in 40 C.F.R. Part 98 (“Federal MRR”) is incorporated herein by reference, subject to the modifications set forth in this subchapter.

(b) Each entity subject to the Federal MRR shall report annual GHG emissions attributable to Pennsylvania sources and entities to the Department on the same schedule as established under the Federal MRR.

(c) All references to the Administrator in the Federal MRR shall be deemed to refer to the Department.

(d) If any definition or other provision in the Federal MRR differs from that in this chapter, the definition or other provision of this chapter shall govern.

§ 147.101. Reporting and Surrender of Allowances by Electricity Distribution Companies.

(a) Each electricity distribution company distributing electricity in Pennsylvania shall report the amount of electricity distributed in Pennsylvania, the sources of the electricity and the emissions attributable to each source electricity.

(b) The electricity distribution company shall be required to submit allowances equal to the emissions attributable to all electricity that is not generated in Pennsylvania or a jurisdiction with an ETS linked to the Pennsylvania cap and trade program under this chapter.

(c) The electricity distribution company shall not be required to surrender any allowances for electricity generated within Pennsylvania or a jurisdiction with an ETS linked to the Pennsylvania cap and trade program under this chapter, provided however, that the electricity distribution company shall be required to surrender allowances if neither generation source in a linked jurisdiction nor its fuel supplier is required to surrender allowances.

(d) If the electricity distribution company is unable to identify the source of generation and the emissions, the electricity generation company shall surrender allowances equal to 2200 pounds of carbon dioxide per megawatt hour.

(e) If the PJM Interconnect adopts a carbon adder program where (1) a carbon adder is included in the bid from each generator located in a jurisdiction that does not have an ETS linked to the Pennsylvania cap-and-trade program, and (2) the carbon adder is equal to the greater of the reserve price for the Pennsylvania auction or the price of allowances in the most recent Pennsylvania auction, then electricity distributors shall not be required to surrender allowances under this section. If the PJM Interconnect adopts such a program, the Department shall reduce the cap by the number of allowances attributable to electricity generated by jurisdictions not linked the Pennsylvania cap and trade program.

§ 147.102. Exceptions

(a) Any source category may apply to the Department for a revision to the method for measuring and reporting GHG emissions. The application must include a description of why the change in method is being proposed, include a detailed description of the data that are affected by the alternative measurement method, and include a demonstration of differences in estimated data under the current and proposed methods. The Department will make an approval determination based on the necessity of the alternative method and whether the accuracy of the method can be sufficiently demonstrated during verification.

(b) Any source that emits fewer than 25,000 metric tons of CO₂e per year and receives fossil fuel from a supplier that is also required to report GHG emissions under this Chapter may apply to the Department for an exemption, in which case the supplier shall report the emissions and surrender allowances. Any such application shall be filed jointly by the source and the supplier.

§ 147.103. Initial GHG Baseline Report

(a) Every entity subject to the requirements of this chapter shall file an Initial GHG Baseline Report no later than sixty (60) days after publication of this rule as a final rule in the Pennsylvania Bulletin. The Department will use the data submitted with all the Initial GHG Baseline Report to calculate the initial 2016 baseline budget and subsequent budgets based on that baseline.

(b) For entities that report under the Federal MRR, the Initial GHG Baseline Report shall report all emissions reported in the entity's report to EPA under the MRR associated with

sources within Pennsylvania. Sources within Pennsylvania shall be deemed to include the first distribution of fossil fuels required to report within Pennsylvania.

(c) Entities that were not required to report under the Federal MRR shall provide their best estimate of emissions in 2016 that would have been subject to this chapter.

(d) If any entity fails to report as required hereunder, the Department will make an estimate of its 2016 emissions. That estimate shall be replaced with emissions reported in the first report of annual emissions submitted hereunder.

§ 147.104 Initial Annual Report

(a) Every entity subject to the requirements of this chapter shall file their first annual GHG emissions report at the same time as the first annual report must be filed under the Federal MRR following the publication of this chapter as a final regulation in the Pennsylvania Bulletin.

(b) The initial annual report shall apply to emissions during the calendar year in which this chapter is first published as a final regulation in the Pennsylvania Bulletin.

§ 147.104 Effect of Potential Stay or Delay in the Effective Date of this Chapter.

The intent of this subchapter is to provide information vital to regulation of GHG emission in this Commonwealth. The reporting obligations in this subchapter shall apply regardless of any stay or delay of the other portions of this chapter, unless otherwise specifically and unambiguously provided in the stay or authority establishing a stay.

Subchapter 3: Applicability

This chapter applies to all entities identified in this subchapter.

§ 147.110. Covered Gases.

This article applies to the following greenhouse gases: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), nitrogen trifluoride (NF₃), and other fluorinated greenhouse gases.

§ 147.111. Covered Entities.

This article applies to all of the following entities with associated GHG emissions pursuant to section 147.112:

(a) Operators of Facilities. The operator of a facility within Pennsylvania that has one or more of the following processes or operations:

- (1) Cement production;
- (2) Cogeneration;
- (3) Glass production;
- (4) Hydrogen production;
- (5) Iron and steel production;
- (6) Lead Production;
- (7) Lime manufacturing;
- (8) Nitric acid production;
- (9) Petroleum and natural gas systems, as specified in section 147.152(h);
- (10) Petroleum refining;
- (11) Pulp and paper manufacturing;
- (12) Self-generation of electricity; or
- (13) Stationary combustion.
- (14) Coal mining.

(b) First Deliverers of Electricity.

(1) Electricity generating facilities: the operator of an electricity generating facility located in Pennsylvania; or

(2) Electricity importers.

(c) Suppliers of Natural Gas. An entity that distributes or uses natural gas in Pennsylvania as described below:

- (1) A public utility gas corporation operating in Pennsylvania;
- (2) A publicly owned natural gas utility operating in Pennsylvania; or

(3) The operator of an intrastate pipeline not included in section 147.111(c)(1) or section 147.111(c)(2) that distributes natural gas directly to end users.

(d) Suppliers of RBOB and Distillate Fuel Oil. A position holder of one or more of the following fuels, or an enterer that imports one or more of the following fuels into Pennsylvania outside the bulk transfer/terminal system:

(1) RBOB;

(2) Distillate Fuel Oil No. 1; or

(3) Distillate Fuel Oil No. 2.

(e) Suppliers of Liquefied Petroleum Gas.

(1) The operator of a refinery that produces liquefied petroleum gas in Pennsylvania;

(2) The operator of a facility that fractionates natural gas liquids to produce liquefied petroleum gas; or

(3) An importer of liquefied petroleum gas into Pennsylvania as defined under MRR.

(f) Sections 147.111(c), (d), and (e) apply to suppliers of blended fuels that contain the fuels listed above.

(g) Suppliers of Liquefied Natural Gas and Compressed Natural Gas.

(1) Facilities that make liquefied natural gas products or compressed natural gas products by liquefying or compressing natural gas received from interstate or intrastate pipelines; and

(2) Importers of liquefied natural gas and compressed natural gas.

(h) Carbon dioxide suppliers.

(i) Coal suppliers.

§ 147.112. Inclusion Thresholds for Covered Entities.

(a) The inclusion threshold for each covered entity is based on the subset of greenhouse gas emissions that generate a compliance obligation for that entity as specified in section 147.152. The entity must report and verify annual emissions pursuant to the MRR.

(b) If an entity's reported or reported and verified annual emissions in any data year from 2010 through 2016 from the categories specified in section 147.152(a) or (b) equal or exceed the thresholds identified below, that entity is classified as a covered entity as of January 1, 2018, and for all future years until any requirement set forth in section 147.135(c) is met.

(c) The requirements apply as follows:

(1) Operators of Facilities. The applicability threshold for a facility is 25,000 metric tons or more of CO₂e per data year.

(2) First Deliverers of Electricity.

(A) Electricity Generating Facilities. The applicability threshold for an electricity generating facility is based on the annual emissions from which the electricity originated. The applicability threshold for an electricity generating facility is 25,000 metric tons or more of CO₂e per data year.

(B) Electricity importers. The applicability threshold for an electricity importer is based on the annual emissions from each of the electricity importer's sources of delivered electricity.

1. All emissions reported for imported electricity from specified sources of electricity that emit 25,000 metric tons or more of CO₂e per year are considered to be above the threshold.

2. All emissions reported for imported electricity from unspecified sources are considered to be above the threshold.

(3) Carbon Dioxide Suppliers. The applicability threshold for a carbon dioxide supplier is 25,000 metric tons or more of CO₂e per year. For purpose of comparison to this threshold, the supplier must include the sum of the CO₂ that it captures from its production process units for purposes of supplying CO₂ for commercial applications or that it captures from a CO₂ stream to utilize for geologic sequestration, and the CO₂ that it extracts or produces from a CO₂ production well for purposes of supplying for commercial applications or that it extracts or produces to utilize for geologic sequestration.

(4) Petroleum and Natural Gas Facilities. The applicability threshold for a petroleum and natural gas facility is 25,000 metric tons or more of CO₂e per data year. This threshold is applied for each facility type specified in section 147.152(h).

(5) Coal facilities. All facilities must report without reference to a threshold.

(d) If an entity's annual, assigned, or reported and verified emissions from any data year between 2010-201 equal or exceed the thresholds identified below from the categories specified in sections 147.151(a), (b), and (d) then that entity is classified as a covered entity as of January 1, 2018, for the year in which the threshold is reached and for all future years until all requirements set forth in section 147.135 are met.

(1) Fuel Suppliers. The threshold for a fuel supplier is 25,000 metric tons or more of CO₂e annually of GHG emissions that would result from full combustion or oxidation of the quantities of the fuels, identified in section 147.111(c) through (g), which are imported and/or delivered to Pennsylvania.

(2) Electricity importers. The threshold for an electricity importer of specified source of electricity is zero metric tons of CO₂e per year and for unspecified sources is zero MWhs per year as of January 1, 2018.

(3) Waste-to-Energy-Facilities. If a waste-to-energy facility's annual, assigned, or reported and verified emissions from any data year between 2010-2016 equal or exceed 25,000 metric tons or more of CO₂e annually, then that entity is classified as a covered entity as of January 1, 2018, for the year in which the threshold is reached and for all years until the requirement set forth in section 147.112(e) is met.

§ 147.113. Opt-In Covered Entities.

(a) An entity that meets the requirements of section 147.111 but does not exceed the inclusion thresholds set forth in section 147.112 may elect to voluntarily opt-in to the Cap-and-Trade Program.

(b) An entity that does not qualify to opt into the Program pursuant to section 147.113(h) and that voluntarily elects to participate in this program under this section must submit its request to the Department for approval by March 1 of the calendar year immediately preceding the first year in which it voluntarily elects to be subject to a compliance obligation

pursuant to this section. The request for approval to be an opt-in covered entity shall specify the first year in which the entity elects to be subject to a compliance obligation. The Department shall evaluate such applications, designate approved applicants as opt-in covered entities, and, for approved applicants, specify the first year in which the opt-in covered entity will be subject to a compliance obligation.

(c) An entity that voluntarily elects to participate in this program under section 147.113(b) may rescind its request to opt in to the program by October 1 of the calendar year prior to the first year in which it voluntarily elects to be subject to a compliance obligation pursuant to section 147.113. An entity that voluntarily elects to participate in the Cap-and-Trade Program under section 147.113(h) may rescind its request to opt in to the Program by October 1 of the calendar year in which it requests approval to be an opt-in covered entity.

(d) An opt-in covered entity is subject to all reporting, verification, enforcement, registration, and compliance obligations that apply to covered entities. An opt-in covered entity's first reporting and verification year shall be the calendar year immediately preceding the first year in which it voluntarily elects to be subject to a compliance obligation pursuant to this section, unless the entity opts in pursuant to section 147.113(h), in which case the entity must continue to report and verify emissions, product data (if applicable), and all other data required by MRR.

(e) Opting out. At the end of any given compliance period, an opt-in covered entity may choose to opt out of the program provided its annual emission levels for any data year remain below the inclusion thresholds set forth in section 147.112. An entity choosing to opt out of the program must either fulfill its compliance obligations as required pursuant to subchapter 7 or surrender allowances equivalent to all the directly allocated allowances it has received from the budget years for the compliance period in question. An opt-in covered entity that wishes to opt-out of this program must apply to the Department by September 1 of the last year of a compliance period.

(f) An entity that was previously a covered entity, meets the requirements of section 147.111, and drops below the inclusion thresholds set forth in section 147.112 for an entire compliance period, may request approval from the Department to voluntarily opt in to the Cap-and-Trade Program. This request must be submitted by June 1 of the first year of the new

compliance period immediately after a compliance period during which the entity's emissions were below the inclusion thresholds. To qualify for opt-in covered entity status under this section (147.113(h)), the entity can only request to be an opt-in covered entity starting in the year the request is submitted.

§ 147.114. Voluntarily Associated Entities and Other Registered Participants.

(a) Voluntarily Associated Entities (VAE). An entity not identified as a covered entity or opt-in covered entity that intends to hold Pennsylvania compliance instruments may apply to the Department pursuant to section 147.130(c) for approval as a voluntarily associated entity.

(1) The following list defines the entities that may qualify as voluntarily associated entities:

(A) An individual, or an entity that does not meet the requirements of sections 147.111 and 147.113, that intends to purchase, hold, sell, or voluntarily retire compliance instruments;

(B) An entity operating an offset project or early action offset project that is registered with DEP pursuant to subchapters 13 or 14. Entities qualifying as voluntarily associated entities under this subparagraph may hold offsets without needing to fulfill the requirements of section 147.130(c)(1)(G). Entities qualifying as voluntarily associated entities under this subparagraph may also hold allowances, but only after fulfilling the requirements of section 147.130(c)(1)(G); or

(C) An entity providing clearing services in which it takes only temporary possession of compliance instruments for the purpose of clearing transactions between two entities registered with the Cap-and-Trade Program. A qualified entity must be a derivatives clearing organization as defined in the Commodities Exchange Act (7 U.S.C § 1a(9)) that is registered with the U.S. Commodity Futures Trading Commission pursuant to the Commodities Exchange Act (7 U.S.C. § 7a-1(a)).

(2) An individual registering as a voluntarily associated entity must have a primary residence in the United States.

(3) Registration and Consulting Activities. An individual who provides cap-and-trade consulting services as described in section 147.223 and also registers as a voluntarily associated entity in the tracking system must disclose to the Department the entities for which the individual is providing consulting services.

(A) The disclosure must be made when the individual registers as a voluntarily associated entity, or within 30 days of initiating the consulting activity if the individual is already registered.

(B) If the individual is associated with an entity providing cap-and-trade consulting services so that in the course of the individual's duties the individual gains access to the market position of another registered entity, then the individual must provide a notarized letter from the entity providing the cap-and-trade consulting services stating that it is aware of the individual's plans to apply as a voluntarily associated entity in the Cap-and-Trade Program and that it has conflict of interest policies and procedures in place which prevent the individual from using information gained from the relationship with the entity for personal gain in the Cap-and-Trade Program. Failure to provide such a letter by the applicable deadline in section 147.114(a)(3)(A) will result in suspension, modification, or revocation of the individual's tracking system account.

(4) An individual who is already registered in the tracking system and intends to provide cap-and-trade program advisory services to other registrant(s) must disclose the proposed relationship with the other registrant(s) to the Department and comply with the requirements of section 147.114(a)(3)(B) prior to providing the advisory services. Failure to provide such a letter by the deadline will result in suspension, modification, or revocation of the individual's tracking system account.

(5) An entity registering as a voluntarily associated entity must be located in the United States, according to the registration information reported pursuant to section 147.130(c).

(6) Individuals identified by registered entities pursuant to sections 147.130(c)(1)(B), (C), (J), and (L) and section 147.132, unless disclosed pursuant to section 147.114(a)(3), are not eligible to register as voluntarily associated entities.

(7) An individual who is an employee of an entity subject to the requirements of MRR or the Cap-and-Trade Program is not eligible to register as a voluntarily associated entity.

(b) Restrictions on Other Registered Participants. The following entities do not qualify to hold compliance instruments and do not qualify as a Registered Participant:

- (1) An offset verifier accredited pursuant to section 147.278;
- (2) A verification body accredited pursuant to section 147.278;
- (3) Offset Project Registries;
- (4) Early Action Offset Programs approved pursuant to subchapter 14; or
- (5) An MRR verifier.

Subchapter 4: Compliance Instruments

§ 147.120. Compliance Instruments Issued by Department.

(a) Pennsylvania Greenhouse Gas Emissions Allowances.

(1) The Department shall create Pennsylvania GHG allowances pursuant to the schedule set forth in subchapter 6.

(2) The Department shall assign each Pennsylvania GHG allowance a unique serial number that indicates the annual allowance budget from which the allowance originates.

(3) The Department shall place these allowances into a holding account under the control of the Department pursuant to section 147.131(b).

(b) Offset Credits Issued by DEP.

(1) The Department shall issue and register DEP offset credits pursuant to the requirements of subchapters 13 and 14.

(2) Surrender of DEP offset credits shall be subject to the quantitative usage limit set forth in section 147.154.

(c) Each compliance instrument issued by the Secretary represents a limited authorization to emit up to one metric ton in CO₂e of any greenhouse gas specified in section 147.110, subject to all applicable limitations specified in this article. No provision of this article may be construed to limit the authority of the Secretary to terminate or limit such authorization to emit. Neither the issuance of a compliance instrument by DEP nor the registration of a compliance interest in an account by the account administrator creates any obligation on the part of the Commonwealth of Pennsylvania or the DEP to maintain this Chapter 147 or the Pennsylvania GHG cap-and-trade program in its current form, and the Commonwealth or DEP may amend or repeal this Chapter 147 or the Pennsylvania GHG cap-and-trade program and the rights and privileges that it creates without any obligation to compensate the holder of a compliance instrument for any diminution of value of a compliance instrument that may occur as a result of such amendment or termination.

(d) The MRR contemplates that compliance instruments are tradeable instruments among persons having an obligation to or otherwise becoming entitled to hold compliance

instruments (“Authorized Holders”). As between Authorized Holders, compliance instruments constitute intangible personal property; contracts for transfer or assignment of compliance instruments are enforceable in Pennsylvania courts; and an Authorized Holder can create and perfect a security interest in a compliance instrument in accordance with the Pennsylvania Uniform Commercial Code. Transfer of a compliance instrument on the books of the accounts administrator or an exchange is intended to constitute physical delivery of the compliance instrument, and a contract for such transfer at a later date is intended to operate as a forward contract and not a future contract under the Commodity Exchange Act. Compliance contracts are not securities subject to the Pennsylvania Securities Act of 1972.

§ 147.121. Compliance Instruments Issued by Approved Programs.

The following compliance instruments may be used to meet a compliance obligation under this article:

- (a) Allowances specified in section 147.242(b) and issued by a program approved by rule under section 147.240 or approved DEP pursuant to section 147.241;
- (b) Offset credits specified in section 147.242(c) and issued by a program approved by DEP pursuant to section 147.241;
- (c) DEP offset credits issued for purposes of early action pursuant to section 147.290;
- (d) Sector-based offset credits recognized pursuant to subchapter 14; and
- (e) Compliance instruments specified in sections 147.121(c) through (d) are subject to the quantitative usage limit set forth in section 147.154.

Subchapter 5: Registration and Accounts

§ 147.130. Registration with DEP.

(a) General Provisions.

(1) The Secretary or his or her designate shall serve as accounts administrator or may contract with an entity to serve as accounts administrator.

(2) An entity qualified to register with DEP cannot apply for more than one set of accounts in the tracking system, except as otherwise provided in section 147.130(g)(4).

(3) An entity cannot hold a compliance instrument until the Department approves the entity's registration and the accounts administrator creates an account in the tracking system.

(b) Entities Eligible for Registration.

(1) An entity must qualify for registration in the tracking system as a covered entity (pursuant to section 147.111), as an opt-in covered entity (pursuant to section 147.113), or as a voluntarily associated entity (pursuant to section 147.114).

(2) If an entity qualifies for registration pursuant to section 147.111 or 147.113, the facility operator, fuel or CO₂ supplier, electric power entity, or operator of petroleum and natural gas systems, as applicable, must register pursuant to this section and meet all other applicable requirements of this article.

(3) Entities Eligible for Initial Registration in a Consolidated Account.

(A) If a group of unregistered entities that qualify for registration and are members of a direct corporate association, then they may choose to register for a consolidated account on behalf of some or all of the group members.

(B) If one entity has control over any of the entities in a group of entities applying for a consolidated account as measured by the indicia of control in section 147.133(a), then the registration process must be initiated and completed by that entity.f

(c) Requirements for Registration. Registration is complete when the Department approves the registration and the accounts administrator informs the entity of the approval.

(1) An entity must complete an application to register with DEP for an account in the tracking system. Applicants must provide the following information:

(A) Name, physical and mailing addresses, contact information, entity type, date and place of incorporation, and ID number assigned by the incorporating agency;

(B) Names and addresses of the entity's directors and officers with authority to make legally binding decisions on behalf of the entity, and partners with over 10 percent of control over the partnership, including any individual or entity doing business as the limited partner or general partner;

(C) Names and contact information for persons controlling over 10 percent of the voting rights attached to all the outstanding voting securities of the entity;

(D) A business number, if one has been assigned to the entity by a Pennsylvania state agency;

(E) A Government issued taxpayer or Employer Identification Number, or for entities located in the United States, a U.S. Federal Tax Employer Identification Number, if assigned;

(F) Identification of the qualifications for registration pursuant to sections 147.111, 147.113, or 147.114;

(G) Disclosure of all other entities with whom the entity has a direct corporate association or indirect corporate association that must be reported pursuant to section 147.133(d), and a brief description of the association. Entities qualifying as voluntarily associated entities under section 147.114(a)(1)(B) must complete this disclosure before they may hold allowances;

(H) An applicant that is a member of a direct corporate association may apply for a consolidated entity account to include other associated registered entities from within the direct corporate association. To do so, the applicant must identify each associated registered entity that will be assigned to its account, and each associated registered entity must provide an attestation signed by its officer or director to confirm that it seeks to be added to the consolidated entity account. The applicant must be able to demonstrate that it has the controlling ownership or authority to act on behalf of all members of the direct corporate association. The applicant cannot be an entity that is a subsidiary to or controlled by another associated entity within the direct corporate association;

(I) An applicant that is a member of a direct corporate association and seeks to apply for its own separate entity account, rather than apply for a consolidated entity account, must provide an allocation of the holding and purchase limits among the separate accounts established for any of its corporate associates per the requirements of section 147.133(d)(1)(E). All members of a direct corporate association must separately confirm the allocation of holding and purchase limits;

(J) Names and contact information for all employees of the entity with knowledge of the entity's market position (current and/or expected holdings of compliance instruments and current and/or expected covered emissions);

(K) An entity registering as an opt-in covered entity must identify the first year it intends to be subject to a compliance obligation, and the year must match the year for which the Department approved the entity as an opt-in covered entity pursuant to section 147.113(b); and

(L) Information required pursuant to section 147.223 for individuals serving as Cap-and-Trade Consultants and Advisors for entities participating in the Cap-and-Trade Program.

(2) An entity that is applying for registration in the Pennsylvania Cap-and-Trade Program, and that has a direct corporate association with an entity registered in an external GHG emissions trading system to which the Pennsylvania Cap-and-Trade Program has linked pursuant to section 147.240 or section 147.243 may not include that associated registered entity in a consolidated entity account.

(3) To create a consolidated account for entities that are members of a direct corporate association that accept assignment to a consolidated entity account, the Department shall instruct the accounts administrator to create a single consolidated entity account in the tracking system that includes the following:

(A) A holding account as described in section 147.131;

(B) A compliance account only for a consolidated entity account with at least one member entity that is eligible for a compliance account as described in section 147.131; and

(C) An annual allocation holding account only for a consolidated entity account with at least one member entity that is eligible for an annual allocation holding account as described in section 147.131.

(4) An entity must designate a primary account representative and at least one, and up to four, alternate account representatives pursuant to section 147.132. An individual registering as a voluntarily associated entity may elect to have a combined role to serve as both primary and alternate account representatives or designate additional account representatives or account viewing agents as desired.

(5) An individual registering as a voluntarily associated entity and having a primary residence in the United States, but not located in Pennsylvania, must designate an agent for service of process in Pennsylvania. The agent may be an individual who resides in Pennsylvania, or a corporation or other fictitious entity qualified to do business in Pennsylvania and with an bona fide office in Pennsylvania.

(6) An entity applying for registration that is not an individual or an entity supplying exchange clearing services pursuant to section 147.114(a)(1)(C) must designate, pursuant to section 147.132, either:

(A) A primary account representative or at least one alternate account representative with a primary residence in Pennsylvania; or

(B) An agent for service of process in Pennsylvania. For entities registering into Pennsylvania, the agent may be an individual who resides in Pennsylvania or a corporation or other fictitious entity qualified to do business in Pennsylvania and with an bona fide office in Pennsylvania.

(7) Any individual who requires access to the tracking system, including the primary account representative, alternate account representatives, or account viewing agents must first register as a user in the tracking system.

(A) An individual qualified to register as a user in the tracking system cannot apply for more than one user registration.

(B) An individual cannot be designated in a capacity requiring access to the tracking system until the Department approves the user's registration in the tracking system. This prohibition includes all primary account representatives, alternate account representatives, and account viewing agents.

(C) An individual registering in the tracking system must provide all applicable information required by sections 147.132, 147.133, and 147.134.

(D) An individual registering in the tracking system must agree to the terms and conditions contained in Appendix B of this chapter.

(8) An entity or individual applicant may be denied registration:

(A) Based on the information provided;

(B) If the Department determines the applicant has provided false or misleading information;

(C) If the Department determines the applicant has withheld information material to the registration;

(D) If an individual fails to comply with section 147.134 Know-Your-Customer Requirements;

(E) If an individual is already registered and has a user account under the same or a different name. This provision applies to individuals registered in an approved external linked GHG emissions trading system.

(d) Registration Deadlines.

(1) An entity that meets or exceeds the inclusion thresholds in section 147.112 must complete registration within 30 calendar days of the reporting deadline contained in MRR when it first reports to DEP emissions that exceed the inclusion threshold.

(2) An opt-in covered entity that is approved for opt-in covered status pursuant to section 147.113(b) must complete registration by October 1 of the year before the entity is approved to have a compliance obligation.

(3) An entity qualifying as a voluntarily associated entity pursuant to section 147.114 may register at any time.

(e) Updating Registration Information.

(1) When there is a change to the information registrants have submitted pursuant to section 147.130(c)(1)(A)-(E) and (I), (c)(4), (c)(5), or (c)(6)(B), registrants must update the

registration information within 30 calendar days of the change. When there is a change to the information registrants have submitted pursuant to section 147.130(c)(1)(J), registrants must update the registration information within one year of the change.

(2) Updates of information on corporate associations provided pursuant to section 147.130(c)(1)(G) must be updated on the schedule contained in section 147.133(e). An entity qualifying as a voluntarily associated entity under section 147.114(a)(1)(B) that did not complete the disclosure required by section 147.130(c)(1)(G) at the time of registration may choose to complete that disclosure at any time; such an entity will only be allowed to hold allowances upon approval of the disclosure by the Department.

(3) Updates of information on Cap-and-Trade Consultants or Advisors provided pursuant to section 147.130(c)(1)(L) must be updated per the schedule contained in section 147.223(c).

(4) An entity that fails to update registration information by the applicable deadline may be subject to the restriction or revocation of its tracking system accounts pursuant to section 147.221(g)(3).

(f) Information Confidentiality. The following information collected about individuals during the registration process will be treated as confidential by the Department and the accounts administrator to the extent possible, and except as needed in the course of oversight, investigation, enforcement and prosecution:

(1) Information collected pursuant to section 147.130(c)(1)(B), (C), (J) and (L);

(2) Information collected about individuals pursuant to section 147.134; and

(3) Information collected about individuals pursuant to section 147.132.

(g) Linking.

(1) An entity located in Pennsylvania based on the physical location information the entity must provide pursuant to section 147.130(c)(1)(A) must register with Pennsylvania.

(2) An entity located outside of Pennsylvania, but in the United States based on the physical location information the entity must provide pursuant to section 147.130(c)(1)(A) may

only register with Pennsylvania to participate in the Pennsylvania Cap-and-Trade Program unless that entity:

(A) Does not qualify as a covered or opt-in covered entity in Pennsylvania, and

(B) Qualifies as a covered or opt-in covered entity in an external GHG ETS to which Pennsylvania has linked pursuant to subchapter 12.

(3) An entity not located within Pennsylvania, the United States, or a jurisdiction operating an external GHG ETS to which Pennsylvania has linked pursuant to subchapter 12, may register with a jurisdiction in which it qualifies as a covered or opt-in covered entity.

(4) Entities with a Compliance Obligation in More than One Jurisdiction.

(A) If an entity registered with Pennsylvania has a compliance obligation in an external GHG ETS to which Pennsylvania has linked pursuant to subchapter 12, then that entity may also register directly with that jurisdiction pursuant to that jurisdiction's registration requirements or the entity may request that the accounts administrator provide the entity's Pennsylvania registration application to the jurisdiction operating the linked GHG ETS to facilitate registration in the linked jurisdiction. The entity may still need to submit additional registration attestations or other materials specific to the linked jurisdiction's registration requirements.

(B) If an entity registered with an external GHG ETS to which Pennsylvania has linked pursuant to subchapter 12 has a compliance obligation with Pennsylvania, then the entity must register with Pennsylvania and provide the information in paragraphs 1. to 6. below:

1. Name, physical and mailing addresses, contact information, entity type, date and place of incorporation, and ID number assigned by the incorporating agency;

2. A Government issued taxpayer or Employer Identification Number, or for entities located in the United States, a U.S. Federal Tax Employer Identification Number, if assigned;

3. Identification of the qualifications for registration pursuant to sections 147.111, 147.113, or 147.114.

4. For all registration information required pursuant to sections 147.130 and 147.133 not listed in paragraphs 1. through 3. above, the entity may submit registration information to the

Pennsylvania accounts administrator or may request that the accounts administrator of the external GHG ETS provide the entity's registration information submitted to the external GHG ETS to the Pennsylvania accounts administrator to facilitate registration in Pennsylvania.

5. Regardless of whether the entity registers with Pennsylvania by completing the process contained in sections 147.130 and 147.133 or by requesting the external GHG ETS to submit the registration application materials to the Pennsylvania accounts administrator to facilitate registration in Pennsylvania, the entity must submit all Pennsylvania-specific registration attestations required by this article.

6. An individual approved by an external GHG ETS with a user account and who intends to be designated as a primary account representative, alternate account representative, or account viewing agent for an entity registering or registered in Pennsylvania must submit all Pennsylvania-specific registration attestations and other applicable information required by sections 147.132, 147.133, and 147.134.

(5) Pennsylvania will recognize the registration of an entity that registers into an External GHG ETS to which Pennsylvania has linked pursuant to subchapter 12 and allow that entity to participate in the Pennsylvania Cap-and-Trade Program.

§ 147.131. Account Types.

(a) Accounts Created for Registered Entities.

(1) The Department shall not create more than one holding account, one compliance account, one Annual Allocation Holding Account, or one exchange clearing holding account for each entity registered pursuant to 147.130.

(2) Holding Accounts. When the Department approves a registration for a covered entity, an opt-in covered entity, or a voluntarily associated entity, the accounts administrator will create a holding account for the registrant.

(3) Compliance Accounts. When the Secretary approves a registration for a covered entity or opt-in covered entity, the accounts administrator will create a compliance account for the entity.

(A) A covered entity or opt-in covered entity may transfer compliance instruments to its compliance account at any time.

(B) A compliance instrument transferred into a compliance account may not be removed by the entity.

(C) The Department may transfer compliance instruments into a compliance account. The Secretary may remove compliance instruments to satisfy a compliance obligation, or when closing an account.

(4) Exchange Clearing Holding Accounts. When the Department approves registration for an entity identified as a voluntarily associated entity pursuant to section 147.114(a)(3), then the accounts administrator will create an exchange clearing holding account for the entity.

(A) Entities may transfer compliance instruments to exchange clearing accounts only for the purpose of transferring control of the instruments to the entity performing the clearing function.

(B) The clearing entity may only transfer the compliance instruments in its exchange clearing holding account to the account designated by the entity receiving the allowances under the transaction being cleared.

(5) Annual Allocation Holding Account. After the Department has approved an entity's application for a direct allocation under subchapter 9, the accounts administrator will create an annual allocation holding account for the entity.

(A) The Department will place allowances allocated to an entity on a date prior to the vintage year of the allowances into the entity's annual allocation holding account.

(B) Entities may only transfer allowances from an annual allocation holding account to their compliance account. No other transfer of allowances from an annual allocation holding account is permitted.

(C) Allowances transferred from an annual allocation holding account to an entity's compliance account will be subject to the holding limit pursuant to section 147.220(c).

(D) Allocation of allowances to entities whose application for a direct application has been approved will be transferred to the entity's holding account on January 1 of the vintage year of the allowances, unless otherwise provided in the Department's approval of the entity's application.

(b) Accounts under the Control of the Secretary. The accounts administrator will create and maintain the following accounts under the control of the Department:

(1) A holding account to be known as the Allocation Holding Account into which the serial numbers of compliance instruments will be registered when the compliance instruments are created.

(2) A holding account to be known as the Auction Holding Account into which allowances are transferred to be sold at auction from:

(A) The Allocation Holding Account;

(B) The holding accounts of those entities for which allowances are being auctioned on consignment pursuant to section 147.221(g)(3); and

(C) The compliance accounts of entities fulfilling an untimely surrender obligation pursuant to section 147.157(d)(1)(A).

(3) A holding account to be known as the Retirement Account to which the Secretary will transfer compliance instruments from compliance accounts or from holding accounts under the control of the Secretary for the purpose of permanently retiring them. Alternatively, entities may voluntarily retire compliance instruments by transferring the compliance instruments to the Retirement Account.

(A) When compliance instruments are registered into the Retirement Account, these compliance instruments cannot be returned to any other holding or compliance account.

(B) When compliance instruments are registered into the Retirement Account, any External GHG ETS to which Pennsylvania links pursuant to subchapter 12 will be informed of the retirements.

(C) The Department will record the retired instruments in a publicly available Permanent Retirement Registry.

(4) A holding account to be known as the Allowance Price Containment Reserve Account:

(A) Into which the serial numbers of allowances directly allocated to the Allowance Price Containment Reserve pursuant to section 147.170(a) will be transferred; and

(B) From which the Department will authorize the withdrawal of allowances for sale to covered entities pursuant to section 147.213.

(5) A holding account to be known as the Forest Buffer Account:

(A) Into which the Department will place DEP offset credits pursuant to section 147.283(a); and

(B) From which the Department may retire DEP offset credits pursuant to sections 147.283(b)(2), (c)(3), and (c)(4) and place them into to the Retirement Holding Account.

(6) [reserved]

(7) A holding account to be known as the External GHG Program Holding Account, which will process voluntary retirements under the Retirement-Only Agreements listed in section 147.243(d).

(A) Entities that are part of an external GHG program with a Retirement-Only Agreement with Pennsylvania may contract with registered entities to transfer compliance instruments to the External GHG Program Holding Account for retirement for recognition in their external GHG program. To be eligible for recognition, the transfer request must specify the entity identification code assigned to the entity by the external GHG program in which it is registered.

(B) The Department will review each transfer into the External GHG Program Holding Account for compliance with the requirements of this article.

(C) If the transfer conforms to the requirements of this article, the Department will transfer the compliance instruments to the Retirement Account.

(D) The Department will transmit a summary of the retirements to the jurisdiction named in the Retirement-Only Agreement based on the timing specified in the Retirement-Only Agreement.

(c) Additional accounts may be created by the Department to implement the Cap-and-Trade Program.

§ 147.132. Designation of Representatives and Agents.

(a) An application for registration into the Pennsylvania Cap-and-Trade Program for an account must designate a single primary account representative and at least one, but no more than four, alternate account representatives. Any communication between the accounts administrator and an alternate account representative must also be addressed to the primary account representative. A complete application for an account, or a request to designate or redesignate account representatives and agents pursuant to section 147.132(f), shall be submitted to the accounts administrator and shall include the following elements:

(1) Name, business and primary residence addresses, email addresses, and phone numbers of the primary account representative and any alternate account representatives and account viewing agents;

(2) Name of the organization designating the primary account representative or any alternate account representative to represent its ownership interest with respect to the compliance instruments held in the account;

(3) The primary account representative and any alternate account representative must attest, pursuant to section 147.103(a), to DEP as follows: “I certify under penalty of perjury under the laws of the Commonwealth of Pennsylvania that I was selected as the primary account representative or the alternate account representative, as applicable, by an agreement that is binding on all persons who have an ownership interest with respect to compliance instruments held in the account. I certify that I have all the necessary authority to carry out the duties and responsibilities contained in title 17, article 5, sections 147.100 et seq. on behalf of such persons and that each such person shall be fully bound by my representations, actions, inactions, or submissions and by any order or decision issued to me by the accounts administrator or a court regarding the account.”;

(4) An attestation verifying the selection of the primary account representative, alternate account representatives, and account viewing agents, signed by the director or officer of the entity who is responsible for the conduct of the primary account representative, alternate account representatives, and account viewing agents, and who is one of the directors or officers disclosed pursuant to section 147.130(c)(1)(B);

(5) The signature of the primary account representative and any alternate account representative and the dates signed; and

(6) An attestation as follows: “I certify under penalty of perjury under the laws of the Commonwealth of Pennsylvania that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. I certify under penalty of perjury of the laws of the Commonwealth of Pennsylvania that the statement of information submitted to the Department of Environmental Protection is true, accurate, and complete.”

(b) Unless otherwise required by the Department, documents of agreement referred to in section 147.132(a) in the application for an account shall not be submitted to the accounts administrator. The accounts administrator shall not be under any obligation to review or evaluate the sufficiency of such documents, if submitted.

(c) Authorization of primary account representative. Upon receipt by the accounts administrator of a complete application for an account under section 147.130(c):

(1) The accounts administrator will establish an account or accounts for the person or persons for whom the application is submitted pursuant to section 147.131.

(2) The primary account representative and any alternate account representative for the account shall represent and, by his or her representations, actions, inactions, or submissions, legally bind each entity that owns compliance instruments held in the account in all matters pertaining to this article, notwithstanding any agreement between the primary account representative or any alternate account representative and such entity.

(3) Any such entity shall be bound by any decision or order issued to the primary account representative or any alternate account representative by the Secretary or a court regarding the account. Any representation, action, inaction, or submission by any alternate account representative shall be deemed to be a representation, action, inaction, or submission by the primary account representative or any alternate account representative.

(d) Each submission concerning the account shall be submitted, signed, and attested to, pursuant to section 147.103(a), by the primary account representative or any alternate account representative for the entity that owns the compliance instruments held in the account. Each such submission shall include the following attestation statement by the primary account representative or any alternate account representative: “I certify under penalty of perjury under

the laws of the Commonwealth of Pennsylvania that I am authorized to make this submission on behalf of the entity that owns the compliance instruments held in the account. I certify under penalty of perjury under the laws of the Commonwealth of Pennsylvania that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify under penalty of perjury under the laws of the Commonwealth of Pennsylvania that the statements and information submitted to the Department of Environmental Protection are true, accurate, and complete. I consent to the jurisdiction of Pennsylvania and its courts for purposes of enforcement of the laws, rules and regulations pertaining to Pa. Code Chapter 147, and the Pennsylvania Air Pollution Control Act and I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.”

(e) The accounts administrator will accept or act on a submission concerning the account only if the submission has been made, signed, and attested to in accordance with this section.

(f) Changing primary account representative and alternate account representative.

(1) The primary account representative for an account may be changed at any time upon receipt by the accounts administrator of a designation of a primary account representative for an account under section 147.130(c). Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous primary account representative, or the previous alternate account representative prior to the time and date when the accounts administrator approves the designation of a primary account representative shall be binding on the new primary account representative and the entity that owns the compliance instruments in the account. Except as provided in section 147.132(f)(3), the change of a primary account representative must include completion of an attestation by the individual, submission of an attestation from an active primary or alternate account representative, and an attestation from a director or officer as described in section 147.132(a)(3)-(a)(6).

(2) The alternate account representative for an account may be changed at any time upon the approval by the accounts administrator of a designation of an alternate account

representative for an account under section 147.130(c). Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous primary account representative, or the previous alternate account representative, prior to the time and date when the accounts administrator approves the designation of an alternate account representative shall be binding on the new alternate account representative and the entity that owns the compliance instruments in the account. Except as provided in section 147.132(f)(3), the change of an alternate account representative must include completion of an attestation by the individual, submission of an attestation from an active primary or alternate account representative, and an attestation from a director or officer as described in section 147.132(a)(3)-(a)(6).

(3) The primary account representative for an account may be designated as an alternate account representative and an alternate account representative for an account may be designated as the primary account representative at any time upon approval by the accounts administrator of a designation of a primary account representative or alternate account representative for an account under section 147.130(c).

(A) Any prior attestation signed by an active account representative and any signature of a director or officer of the entity responsible for the conduct of the primary account representative and alternate account representative will remain applicable even if account representative roles are swapped.

(B) A new attestation by the primary account representative or an alternate account representative that previously submitted a signed attestation is not required.

(C) A new attestation by a director or officer of the entity responsible for the conduct of the primary account representative and alternate account representatives is not required if the director or officer is disclosed pursuant to section 147.130(c). Otherwise, if the director or officer has not been disclosed pursuant to section 147.130(c), then a new attestation as described in section 147.132(a)(4) verifying the selection of the primary account representative and alternate account representative must be submitted to the accounts administrator.

(4) If a registered entity no longer has at least one primary or alternate account representative, a director or officer disclosed pursuant to section 147.130(c)(1)(B) must identify new representatives and agents with an attestation from the director or officer as described in section 147.132(a)(3)-(4). The Secretary maintains the ability to suspend or revoke the

registration until two account representatives are designated on the entity's tracking system accounts.

(g) Objections Concerning Account Representatives.

(1) Once a complete application for an account under section 147.130(c) has been submitted and received, the accounts administrator will rely on the application unless and until a superseding complete application for an account under section 147.130(c) is received by the accounts administrator.

(2) Except as provided in section 147.132(f)(1), no objection or other communication submitted to the accounts administrator concerning the authorization, or any representation, action, inaction, or submission of the primary account representative or any alternate account representative for an account shall affect any representation, action, inaction, or submission of the primary account representative or any alternate account representative or the finality of any decision or order by the accounts administrator under this article.

(3) The accounts administrator will not adjudicate any private legal dispute concerning the authorization or any representation, action, inaction, or submission of the primary account representative or any alternate account representative for an account, including private legal disputes concerning the proceeds of compliance instrument transfers.

(h) Delegation by primary account representative and alternate account representatives.

(1) A primary account representative or an alternate account representative for a registered entity may authorize up to five natural persons per account that may view all information contained in the tracking system involving the entity's accounts, information, and transfer records (account viewing authority). The persons delegated shall not have authority to take any other action with respect to an account on the tracking system.

(2) In order to delegate account viewing authority in accordance with section 147.132(h)(1) the primary account representative or alternate account representative, as appropriate, must submit to the accounts administrator a notice of delegation, that includes the following elements:

(A) The name, address, email address, and telephone number of such primary account representative or alternate account representative;

(B) The name, address, email address, and telephone number of each such natural person, herein referred to as “account viewing agent;” and

(C) An attestation verifying the selection of the account viewing agent, signed by the officer of the entity who is responsible for the conduct of the account viewing agent, and is one of the officers disclosed pursuant to section 147.130(c)(1)(B).

(3) A notice of delegation submitted under section 147.132(h)(2) shall be effective, with regard to the accounts identified in such notice, upon receipt of such notice by the accounts administrator and until receipt by the accounts administrator of a superseding notice of delegation by such primary account representative or alternate account representative as appropriate. The superseding notice of delegation may replace any previously identified account viewing agent, add a new account viewing agent, or eliminate entirely any delegation of authority.

§ 147.133. Disclosure of Corporate Associations.

(a) Criteria for Determining Corporate Associations.

(1) A corporate association exists when one entity has an ownership interest in or control over a second entity. The following indicia of control determine ownership or control:

(A) Percent of ownership of any class of listed shares, the right to acquire such shares, or any option to purchase such shares of the other entity;

(B) Percent of common owners, directors, or officers of the other entity;

(C) Percent of the voting power of the other entity;

(D) In the case of a partnership other than a limited partnership, percent of the interests of the partnership;

(E) In the case of a limited partnership, the percent of control over the general partner or the percent of the voting rights to select the general partner; and

(F) In the case of a limited liability corporation, percent of ownership in the other entity regardless of how the interest is held.

(2) An entity has a direct corporate association with another entity, regardless of whether the second entity is registered in the Cap-and-Trade Program or in an external GHG ETS to which Pennsylvania is linked pursuant to subchapter 12, if either one of these entities has any indicia of control described in section 147.133(a)(1) that is greater than 50 percent.

(3) A direct corporate association also exists when two entities are connected through a line of more than one direct corporate association.

(A) An entity (A) has a direct corporate association with another entity (B) if the two entities share a common parent and that parent has a direct corporate association with each entity (A and B) when applying the indicia of control contained in section 147.133(a)(2).

(B) An entity that has a direct corporate association with a second entity also has a direct corporate association with any entity with whom the second entity has a direct corporate association.

(4) An entity has an indirect corporate association with another entity if:

(A) The two entities do not have a direct corporate association; and

(B) The controlling entity's percentage of ownership or any indicia of control identified in section 147.133(a)(1) of the controlled entity is more than 20 percent but less than or equal to 50 percent. If the two entities are connected through a chain of more than one corporate association, the indicia of control identified in section 147.133(a)(1) is calculated by multiplying the percentages at each link in the chain of corporate associations starting with the last entity that is in a direct corporate association. An indirect corporate association exists between the two entities if the total percentage of control is more than 20 percent but less than or equal to 50 percent when multiplying the percentage of control at each link in the chain of corporate associations.

(5) The owner or operator of an electricity generating facility in Pennsylvania has a direct corporate association with the operator of another electricity generating facility in Pennsylvania if the same entity owns or operates both generating facilities.

(6) Direct Corporate Associations and Individuals Who Have Shared Roles. An individual who has access to the market positions (current and/or expected holdings of compliance instruments and current and/or expected covered emissions) of two or more entities

registered in the tracking system or registered in an external GHG ETS to which Pennsylvania has linked pursuant to subchapter 12 is considered an individual who has shared roles. For the purposes of this requirement, Account Representatives are defined as having access to the market positions of the entities that they serve.

(A) If any individual with shared roles is an employee of a registered entity for which the individual has a shared role, the entities for which the individual has the shared role will have a direct corporate association.

(B) If any individual is a Cap-and-Trade Consultant or Advisor for the entities for which the individual has a shared role, but is not disclosed pursuant to section 147.223, and the individual can use market position information obtained through the shared role without restriction, the entities for which the individual has shared roles will have a direct corporate association. It is the responsibility of the registered entity employing an individual as a Cap-and-Trade Consultant or Advisor pursuant to section 147.223 to determine if the individual has access to the entity's market position.

(b) Disclosure of Corporate Associations.

(1) Disclosure of Associated Registered Entities. Entities must disclose all direct and indirect corporate associations with entities registered in the Pennsylvania Cap-and-Trade Program or in another external GHG ETS to which Pennsylvania has linked pursuant to subchapter 12.

(2) Disclosure of Unregistered Parent Entities. Entities must disclose all direct corporate associations with entities not registered in the Pennsylvania Cap-and-Trade Program or in another external GHG ETS to which Pennsylvania has linked pursuant to subchapter 12 if those entities have the degree of ownership interest in or control over the registered entity to meet the requirements of having a direct corporate association.

(3) Disclosure of Unregistered Entities in a Line of Corporate Associations Between Registered Entities. A registered entity that has a direct or indirect corporate association with another registered entity must disclose the identity of all entities involved in the line of direct or indirect corporate associations between the two registered entities, even if such entities are not registered.

(4) Disclosures of Direct Corporate Associations with Unregistered Entities in the United States or Canada. Entities that have direct corporate associations with unregistered entities in the United States or Canada that are otherwise not required to be disclosed must disclose those associations within 30 calendar days of a request by the Department. The disclosing entity may elect to disclose only those directly associated entities located in the United States or Canada that participate in a market related to the Cap-and-Trade Program.

(A) Entities participating in a market related to the Cap-and-Trade Program include only those that purchase and sell greenhouse gas emissions instruments, natural gas, oil, or electricity; or conduct exchange trades involving derivatives or swaps based on greenhouse gas emission instruments, natural gas, oil, or electricity.

(B) The disclosure of entities in related markets may be accomplished through the submission of the most recent information submitted to another government agency in the United States using one or more of the following official governmental forms or documentation as needed to meet the required disclosure: (1) Exhibit 21 of the Form 10-K submitted to the Securities and Exchange Commission by the registrant or an affiliate of the registrant; (2) the application for market-based rate authority, or update to such application, submitted by the registrant or an affiliate of the registrant to the Federal Energy Regulatory Commission pursuant to 18 CFR Part 35 and Order 697; (3) the application for registration with the National Futures Association, or update to such application, submitted by the registrant or an affiliate of the registrant as required by the Commodity Futures Trading Commission pursuant to the Commodity Exchange Act; (4) Form 40 or Form 40S filed by the registrant or an affiliate of the registrant in accordance with the Commodity Futures Trading Commission's reporting rules; and/or (5) Part 1A of a Form ADV filed with the Securities and Exchange Commission by a registered investment advisor responsible for managing the registrant.

(5) Disclosures of Other Unregistered Entities Outside the United States and Canada. Entities that have direct corporate associations with other entities outside the United States and Canada that participate in a market related to the Cap-and-Trade Program that are not otherwise required to be disclosed must disclose those associations within 30 calendar days of a request by the Secretary.

(A) Entities participating in a market related to the Cap-and-Trade Program include only those that purchase and sell greenhouse gas emission instruments, natural gas, electricity, or oil; or conduct exchange trades involving derivatives or swaps based on greenhouse gas emission instruments, natural gas, oil, or electricity.

(B) Entities may disclose these associations using the documentation options listed in section 147.133(b)(4)(B).

(c) Disclosure Exemptions.

(1) Any registered entity subject to affiliate compliance rules promulgated by state or federal agencies shall not be required to disclose information or take other action that violates those rules.

(2) An entity registering as a voluntarily associated entity pursuant to section 147.114(a)(1)(B) solely to hold offsets is not required to disclose any direct or indirect corporate associations.

(d) Disclosure Requirements.

(1) Entities disclosing direct or indirect corporate association must provide the following information to identify each reportable corporate association:

(A) Name, contact information, and physical address of the entity;

(B) Tracking system entity identification number, if applicable;

(C) A government issued Taxpayer Identification Number or Employer Identification Number, or for entities located in the United States, a U.S. Federal Tax Employer Identification Number, if assigned; and

(D) Place and Date of Incorporation, if applicable;

(E) For direct corporate associations with registered entities only, the percentage share of the holding limit and purchase limit assigned to each entity opting out of account consolidation pursuant to section 147.130(c)(1)(I); the sum of the shares must equal 100 percent.

(2) Entities that have disclosable corporate associations must identify whether the type of corporate association is direct or indirect.

(A) Entities identifying an indirect corporate association must provide a brief description of the association, including information sufficient to explain the entity's evaluation of the indicia of control in section 147.133(a)(1) that was used to determine the type of corporate association disclosed for each associated entity.

(B) Entities identifying a direct corporate association must identify the nature of the associated entity as a parent, a subsidiary, or an entity with a common parent, but need not include an evaluation of the indicia of control.

(3) Methods of Disclosure. All corporate association disclosures required by this section must be provided in a manner described in section 147.103(a).

(e) Disclosure Timing. The entity must disclose the information pursuant to section 147.133(d):

(1) At the time of registration pursuant to section 147.130;

(2) Within 30 calendar days of the creation of a direct or indirect corporate association or of a change in the type of a corporate association involving registered entities pursuant to sections 147.133(b)(1) or 147.133(a)(6)(B), or registered and unregistered entities pursuant to section 147.133(b)(2) and (3);

(3) Within one year of a modification if the changes in information involve only unregistered entities disclosed pursuant to sections 147.133(b)(4) and (5);

(4) No later than 10 calendar days prior to the auction application deadline established in section 147.212 when disclosing a change related to another entity registered in the Cap-and-Trade Program or to entities registered into the Pennsylvania Cap-and-Trade Program and other external GHG ETS to which Pennsylvania has linked pursuant to subchapter 12, if the disclosing entity intends to participate in the auction; and

(5) Within one year for all other changes.

§ 147.134. Know-Your Customer Requirements.

(a) General Requirements.

(1) The accounts administrator cannot provide access to the tracking system to an individual until the Department has determined the individual applying for participation has complied with the requirements of this section.

(2) The requirements of this section are in addition to any requirements contained elsewhere in this article that apply to the functions the individual will undertake in the tracking system.

(3) All documents submitted to the Department pursuant to this section shall be in English.

(4) Individuals with a criminal conviction in any jurisdiction in the five previous years constituting a felony under U.S. federal law or Pennsylvania law, or the equivalent thereof, are ineligible for registration and participation in the Cap-and-Trade Program.

(b) The individual must provide documentation of the following:

(1) Name;

(2) The address of the primary residence of the applicant, which may be shown by any of the following:

(A) A valid government-issued identity card or government-issued document with an expiration date;

(B) Any other document that is customarily accepted by the Commonwealth of Pennsylvania as evidence of the primary residence of the individual;

(3) Date of birth;

(4) Proof of an open bank account in the United States, except as provided in section 147.134(b)(4)(B) below;

(A) The proof must be in the form of a bank statement dated no earlier than 3 months prior to submission, must identify the individual holding the account, and must contain the name and business address of the bank.

(B) If an applicant will only represent a covered entity located outside of the United States, the applicant may either provide:

1. Proof of an open bank account in the United States, or
2. Documentation of an open bank account in the country in which the covered entity is located. This documentation must be accompanied by a signed attestation of an officer or director of the applicant's employer to DEP as follows: "I certify under penalty of perjury under the laws of the Commonwealth of Pennsylvania that the person requesting access to the market tracking system will be designated as an account representative for this entity. This entity is a covered entity under the Pennsylvania Cap-and-Trade Regulation and has no personnel residing in the United States with the authority to take actions that are binding on all persons who have an ownership interest with respect to compliance instruments held in the account for this entity."

(5) Employment or other relationship to an entity that has registered or has applied to register with the Pennsylvania Cap-and-Trade Program if the individual is or will represent an entity registering or registered pursuant to section 147.130;

(6) A government-issued document providing photographic evidence of identity of the applicant which may include:

(A) A valid government-issued identity card or driver's license with an expiration date and date of birth; or

(B) A passport; and

(7) Any criminal conviction declared in any jurisdiction during the previous five years constituting a felony under U.S. federal law or Pennsylvania law, or the equivalent thereof. This disclosure must include the type of violation, jurisdiction, and year.

(c) An individual who will become an account representative or viewing agent of a covered entity or opt-in covered entity as defined in section 147.002 may choose to provide documentation pursuant to section 147.134(b) directly to their employer instead of to DEP. An entity's director or officer disclosed pursuant to section 147.130(c)(1)(B) must confirm that the individual meets the Know-Your-Customer Requirements described in section 147.134 and that the entity will retain the documentation.

(1) The covered entity or opt-in covered entity must verify the identity of the individual and confirm that the individual does not have a criminal conviction constituting the

equivalent of a felony under U.S. federal law or Pennsylvania law, or the equivalent thereof, in any jurisdiction during the previous five years.

(2) A director or officer disclosed pursuant to section 147.130(c)(1)(B) of the covered entity must complete an attestation to verify the accuracy and veracity of the documentation submitted pursuant to section 147.134(b).

(3) The documents submitted by the individual shall be retained by the entity, and the Secretary or his/her designated representative shall be permitted, at any time, to review and audit the documentation. The covered or opt-in covered entity must provide this documentation to the Secretary or his/her designated representative within 5 calendar days of a request by the Secretary.

(d) Verification of information.

(1) One of the documents submitted pursuant to section 147.134 must be notarized by a notary public no more than three months before submittal.

(2) The notary stamp or seal, the notary public's name, the county or state of the notary public's place of business, and the commission expiration date must be legible.

(3) If a notary is obtained from outside of the United States, an apostille must be submitted to confirm that the individual who notarized the document had valid commission at the time that the document was notarized. The apostille must be attached to the notarized document.

(4) The Secretary may re-verify all documents required pursuant to Section 147.134 at least every two years. To allow verification, upon request and within ten days, the individual must provide updated documentation required pursuant to 147.134(b).

§ 147.135. Changes to Entity Type and Reassignment of Facilities Already Registered to Different Entity Accounts.

(a) Assignment of Facilities to Entity Accounts.

(1) Subdivision of MRR Facilities with Distinct DEP IDs Currently Registered in the Tracking System. The following provisions apply to facilities that are currently registered in the tracking system and wish to change their entity type or account assignment(s):

(A) A facility may not be subdivided without a demonstration of a change to the continuity of its ownership and control to one or more of its constituent units.

(B) The subdivided units must complete all the requirements of MRR before they can be reassigned from existing tracking system accounts, including the assignment of a DEP ID to each subdivided unit.

(C) The subdivided units must complete the disclosure process outlined in section 147.135(b).

(D) The entity seeking the subdivision must either indicate the existing accounts to which the subdivided facilities will be assigned or complete an application for a new account, or for closure of an existing account, if applicable.

(2) Assignment of a New Facility to an Account. The owner or operator of a new facility that has received a DEP ID but that is not yet assigned to a tracking system account must register pursuant to section 147.130 and request either a new account or assignment of the facility to an existing account.

(3) Changing Account Assignments within a Direct Corporate Association. Members of a direct corporate association may request a change to the distribution of facilities within their set of accounts only once per compliance period. Approved changes to consolidate or opt-out of account consolidation pursuant to section 147.130(b)(3) will be effective at the beginning of the next compliance period provided that the request is made by June 30 of the year immediately preceding that next compliance period.

(b) Change of Facility Ownership. When the ownership of a facility changes, the following information must be submitted to DEP within 30 calendar days of finalization of the ownership change:

(1) A description of the merger or acquisition and the effective date of the change of ownership, including whether the merger or acquisition is the purchase of a facility or facilities from another entity or the purchase of an entity that owns a facility or facilities;

(2) Both the legal and operating names and the tracking system entity IDs of the entities owning the facility or facilities prior to the change of ownership;

(3) The legal name, operating name, and the tracking system entity ID of the purchasing entity, if any;

(4) Written direction regarding whether the purchased facility or facilities will be added to a consolidated entity account or whether the purchased facility or facilities will be associated with an entity that will opt-out of account consolidation pursuant to section 147.130(b)(3);

(5) Documentation with signatures (original or electronic pursuant to section 147.103(a)) by a director or officer from the entity the facility or facilities and from the purchasing entity, notifying DEP of the change of ownership;

(6) Any changes to disclosures or new disclosures pursuant to section 147.133;

(7) Direction regarding the disposition of compliance instruments that must be transferred by the jurisdiction to the purchasing entity. Compliance instruments can be transferred only between accounts of the same type (e.g., from a compliance account to a compliance account) and any administrative transfers required may be requested as a one-time occurrence scheduled to occur within five business days after the facility or facilities are transferred in the tracking system to the purchasing entity;

(8) It is the responsibility of the entities participating in the change of ownership to transfer any compliance instruments from tracking system holding accounts that they control prior to closure. Prior to closure, the Secretary may transfer compliance instruments from an entity's compliance account to its holding account upon request by the entity. If a covered entity no longer owns or operates any active facility in its tracking account due to a change of facility ownership, then that covered entity may exit the Program and close its tracking system accounts within five business days after the facility or facilities are transferred in the tracking system to the purchasing entity.

(c) Eligibility for a Change of Entity Type.

(1) Eligibility of an Opt-In Covered Entity to Change Its Entity Type.

(A) After a compliance period, an opt-in covered entity may choose to exit the Program or apply for a new tracking system account to change its entity type to a voluntarily associated entity provided that it meets the requirements specified in section 147.113(g).

(B) An opt-in covered entity choosing to exit the Program must fulfill its compliance obligations as required pursuant to subchapter 7 and report and verify emissions data, product data, and any other data required pursuant to MRR for its final year with a compliance obligation to allow for any true-up allocations pursuant to subchapters 8 and 9 before requesting a change of entity type.

(2) Eligibility of a Covered Entity or Opt-In Covered Entity to Change Its Entity Type.

(A) Effect of Reduced Emissions on a Covered Entity's Compliance Obligation. A covered entity that reports annual covered GHG emissions less than 25,000 metric tons of CO₂e per year during one entire compliance period may request a change to its entity type from the Department by the deadlines specified in section 147.135(e)(1). If the covered entity does not complete the change in entity type by the deadline and if the covered entity is not an opt-in covered entity, then the Department will consider the entity as a voluntarily associated entity for the assignment of purchase limit and holding limit, if applicable. If the entity does not apply to change its entity type by the deadline, then the Department maintains the ability to suspend or revoke the registration and any compliance instruments remaining in the entity's tracking system accounts will be consigned on the entity's behalf or transferred pursuant to section 147.135(f) or 147.190(k).

(B) Effect of a Facility Shutdown on a Covered Entity's Compliance Obligation. Once a covered or opt-in covered entity has fully met the reporting cessation requirements of the MRR due to ceasing to operate, full facility shutdown, and cessation of all activities subject to reporting under the MRR, DEP will begin the account closure process pursuant to section 147.135(f). Fuel suppliers and electric power entities may not claim eligibility for a change of entity type under this provision, and may only request to close their accounts if no further activity is expected.

(C) A fuel supplier or electric power entity that is eligible for a change in entity type that will result in its no longer being a covered entity and has fully met the reporting and verification requirements of the MRR may exit the Cap-and-Trade Program pursuant to section 147.135(f).

(3) A voluntarily associated entity is eligible to request to exit the Cap-and-Trade Program at any time.

(4) The Department may close the account of a voluntarily associated entity if no compliance instruments are transferred into or out of the account for a period of two years.

(d) Options for Changing Entity Type. When an entity qualifies for a change in entity type pursuant to section 147.135(c), the following shall apply:

(1) A covered entity may elect to remain in the Cap-and-Trade Program as an opt-in covered entity pursuant to section 147.113(h) and does not need to apply for a new set of tracking system accounts; or

(2) A covered entity or an opt-in covered entity may elect to remain in the Cap-and-Trade Program and apply for a new tracking system account as a voluntarily associated entity pursuant to section 147.114; or

(3) An entity that has fully met the reporting cessation requirements of section 95101(i) of MRR may elect to exit the Cap-and-Trade Program pursuant to section 147.135(f).

(e) If a covered entity or opt-in covered entity qualifies for a change in entity type, it may request a change by completing the following requirements:

(1) Request Deadlines.

(A) A covered entity requesting a change in entity type pursuant to section 147.135(c)(2)(A) must make the request to the Secretary by September 30 of the first calendar year after the end of a compliance period.

(B) A covered entity or opt-in covered entity requesting a change in entity type pursuant to section 147.135(c)(2)(B) has 30 days from the completion of the MRR cessation of reporting provisions per section 95101(i), or within 30 calendar days of the finalization of the ownership change, whichever is sooner, to request to remain in the Program and apply as a voluntarily associated entity.

(C) A covered entity whose request to be an opt-in covered entity pursuant to section 147.113(h) was approved by the Department must request a change in entity type by September 30 of the same year as the deadline specified in section 147.113(h).

(D) An opt-in covered entity that intends to exit the program entirely must make a request to the Department by September 30 of the first calendar year immediately after the end of a compliance period.

(2) A covered entity or opt-in covered entity that qualifies for account closure pursuant to section 147.135(c)(2)(B) must, after fulfilling its compliance obligation for its final year of operations pursuant to section 147.156 and addressing final allocation provisions pursuant to section 147.135(f), elect one of the following options:

(A) Request to close its tracking system accounts, comply with MRR cessation of reporting provisions pursuant to section 95101(h) or (i), and apply to be in the tracking system as a voluntarily associated entity as defined in section 147.114; or

(B) Request to consolidate its holding and compliance accounts with an existing account held by another entity pursuant to section 147.130(b)(3) with whom it has a direct corporate association and comply with MRR cessation of reporting provisions pursuant to section 95101(h) or (i); or

(C) Request to close its tracking system accounts within 30 calendar days after the entity is qualified to request an account closure, comply with MRR cessation of reporting provisions per section 95101(h), and exit the Program.

(f) Account Closure for Entities Exiting the Program.

(1) Return of Initial Allocation for Entities Exiting the Program. An entity may not exit the Program pursuant to section 147.135 until the entity has satisfied the requirements in 147.190(k). If an entity has met the cessation requirements and remains in the Program solely to meet the requirements of section 147.190(k), then the entity need not report and verify data pursuant to MRR for any time period after which the MRR cessation requirements have been met.

(2) When an entity requests that the Department close its accounts in the tracking system, it must arrange to transfer all compliance instruments out of its accounts before the accounts can be closed. If the entity has compliance instruments in its compliance or holding account when a request for account closure is submitted, then the entity may request a one-time administrative transfer for DEP to either:

(A) Transfer the compliance instruments from its compliance account to the entity's holding account to allow the entity to transfer the allowances out of its account; or

(B) Transfer the compliance instruments from its compliance and holding accounts to the account of another registered entity or to the Retirement Account at the request of the entity closing the account.

(3) When the entity's accounts are clear of compliance instruments then the accounts will be closed.

Subchapter 6: Pennsylvania Greenhouse Gas Allowance Budgets

§ 147.140. Compliance Periods.

Duration of Compliance Periods is as follows:

(a) The first compliance period starts on January 1, _____ [of the year following the publication of this regulation in the Pennsylvania] and ends on either December 31, 2020, or December 31, 2023, if the compliance period starts after January 1, 2020.

(b) Each subsequent compliance period shall commence on the first day of January following the end of the last compliance period and last for three years.

§ 147.141. Annual Allowance Budgets.

(a) The Pennsylvania GHG Allowance Budget for the year 2018 shall be equal 0.97 times the 2016 GHG emissions from all sources and other entities required to surrender allowances under this regulation as determined by the Department (“E₂₀₁₆”) and shall decrease by 0.03 E₂₀₁₆ in each subsequent year.

(b) The Pennsylvania GHG Allowance Budget for the first year that this regulation becomes effective shall be as determined under section 147.141(a) notwithstanding the fact that the regulation may become effective for a calendar year after 2018.

(c) The Department shall publish notice of the budget for the first year in which compliance will be required under this chapter within sixty (60) days of receiving the Initial Baseline Report. Any auction that occurs before the budget is determined shall be based on the Department’s initial estimate of the budget published in the Pennsylvania Bulletin with notice of the final rule adopting this chapter.

§ 147.141 Impact of Delay or Stay of Effective Date

(a) The annual allowance budgets set forth in this subchapter are indented to result in the emissions reductions that the Intergovernmental Panel on Climate Change has determined are necessary to prevent to most severe adverse impacts of climate disruptions resulting from anthropogenic emissions of greenhouse gases. Failing to achieve the emissions reductions contemplated by the allowance (and emissions budgets) for 2040 and 2050 will cause severe and

irreparable adverse impacts on health and the resources with respect to which the Commonwealth has a duty as a trustee under Article I, § 27 of the Constitution.

(b) No delay in the effective date of this chapter, whether caused by the duration of the rulemaking process or judicial or legislative action, shall affect the scheduled reductions in the allowance budgets set forth in this subchapter. Thus, the emissions reductions contemplated by this subchapter for 2030 shall be required notwithstanding any delay in the first effective date of this regulation.

(c) If this regulation takes effect after January 1, 2020, the Department shall reduce the emissions budgets for the years remaining through December 31, 2030 by the amount that emissions between January 1, 2020 and January 1 of the year in which this chapter takes effect exceed the allowance budgets for that period.

Subchapter 7: Compliance Requirements for Covered Entities

§ 147.150. General Requirements.

(a) Reporting Requirements. Each covered entity identified in section 147.111 is subject to MRR.

(b) An entity's compliance obligation is based on the emissions number for the emissions subject to a compliance obligation for every metric ton of CO_{2e} for which a positive or qualified positive emissions data verification statement is issued, rounded to the nearest whole ton, or for which there are assigned emissions pursuant to MRR.

(c) Record Retention Requirements. Each entity must retain all of the following records for at least 10 consecutive years and must provide such records within 20 calendar days of receiving a written request from DEP, including:

- (1) Copies of all data and reports submitted under this chapter;
- (2) Records used to calculate a compliance obligation as specified in section 147.153;
- (3) Emissions data and product data verification statements the MRR; and
- (4) Detailed verification reports as required pursuant to the MRR.

§ 147.151. [reserved]

§ 147.152. Emission Categories Used to Calculate Compliance Obligations.

(a) Operators of Facilities.

(1) An operator of a facility covered under sections 147.111(a) and 147.112(c)(1) has a compliance obligation for every metric ton of CO_{2e} for which a positive or qualified positive emissions data verification statement is issued in accordance with the MRR, including process emissions, stationary combustion emissions and vented emissions. If DEP has assigned emissions for the sources subject to a compliance obligation pursuant to this section, the facility will have a compliance obligation equal to the value of every metric ton of CO_{2e} assigned emissions. The entity's compliance obligation will be assessed at the facility level unless otherwise noted under section 147.112(c).

(2) Combustion emissions resulting from burning RBOB, distillate fuel oils, or liquefied petroleum gas which are required to surrender allowances under this regulation are not included when calculating an operator's compliance obligation.

(b) First Deliverers of Electricity. A first deliverer of electricity covered under sections 147.111(b) and 147.112(c)(2) has a compliance obligation for every metric ton of CO₂e emissions calculated pursuant to section 147.152(b)(1) for which a positive or qualified positive emissions data verification statement is issued pursuant to MRR, or for which there are assigned emissions, when such emissions are from a source in Pennsylvania or in a jurisdiction where a GHG emissions trading system has not been approved for linkage or linked by rule pursuant to subchapter 12.

(1) Calculation of emissions for compliance obligation.

(A) For first deliverers that are operators of an electricity generating facility in Pennsylvania, the calculation for compliance obligation includes all emissions reported and verified or assigned pursuant to MRR, except emissions without a compliance obligation pursuant to section 147.152.2.

(B) For first deliverers that are electricity importers, emissions with a compliance obligation are calculated using the following equation:

$$\text{CO}_2\text{e}_{\text{covered}} = \text{CO}_2\text{e}_{\text{unspecified}} + \text{CO}_2\text{e}_{\text{specified}} - \text{CO}_2\text{e}_{\text{linked}}$$

Where:

$\text{CO}_2\text{e}_{\text{covered}}$ = Annual metric tons of CO₂e with a compliance obligation.

$\text{CO}_2\text{e}_{\text{unspecified}}$ = Annual metric tons of CO₂e from unspecified imported electricity.

$\text{CO}_2\text{e}_{\text{specified}}$ = Annual metric tons of CO₂e from imported electricity from specified sources that meet the requirements of MRR section 95111(b)(2).

$\text{CO}_2\text{e}_{\text{linked}}$ = Annual metric tons of CO₂e from electricity with a first point of receipt located in a jurisdiction where a GHG emissions trading system has been approved for linkage or linked by rule pursuant to subchapter 12.

(C) All deliveries of electricity not meeting the requirements for specified sources pursuant to MRR will have emissions calculated using the default emission factor for unspecified electricity where $CO_2e_{unspecified} = MWh * TL * EF_{unsp}$

Where:

CO_2e = Annual CO_2 equivalent mass emissions from the unspecified electricity deliveries at each point of receipt identified (MT of CO_2e).

MWh= Megawatt hours of unspecified electricity deliveries at each point of receipt identified.

$EF_{unsp} = 0.48$ MT of CO_2e/MWh , the default emission factor for unspecified electricity imports

$TL = 1.02$, a transmission loss correction factor to account for transmission losses.

(2) Resource shuffling is prohibited and is a violation of this chapter.

(3) The following criteria must be met for electricity importers to claim a compliance obligation for delivered electricity based on a specified source emission factor or asset controlling supplier emission factor.

(A) Electricity deliveries must be reported to DEP and emissions must be calculated.

(B) The electricity importer must be the facility operator or have right of ownership or a written power contract to the amount of electricity claimed and generated by the facility or unit claimed; and

(C) The electricity must be directly delivered to the Pennsylvania grid.

(4) If PJM or another electricity regulatory body imposes a carbon adder to electricity generated in jurisdictions other than those ETS programs linked to the Pennsylvania cap-and-trade program and the adder is equivalent to the estimated price of allowances that the generator would have been required to surrender in Pennsylvania, imported electricity shall be exempt from the requirement to surrender allowances under this chapter.

(c) Suppliers of Natural Gas. A supplier of natural gas covered under sections 147.111(c) and 147.112(d) has a compliance obligation for every metric ton CO_2e of GHG

emissions that would result from full combustion or oxidation of all fuel delivered to end users in Pennsylvania contained in an emissions data report that has received a positive or qualified positive emissions data verification statement or for which emissions have been assigned, less the fuel that is delivered to covered entities, as follows:

(1) Suppliers of natural gas shall report the total metric tons CO₂e of GHG emissions delivered to all end users in Pennsylvania pursuant to the MRR;

(2) DEP shall calculate the metric tons CO₂e of GHG emissions for natural gas delivered to covered entities which are customers of the supplier. The emissions will be calculated using the reconciled reported deliveries (in MMBtu) contained in natural gas supplier emissions data reports that received a positive or qualified positive emissions data verification statement. Natural gas received data (in MMBtu) contained in covered facility emissions data reports that received positive or qualified positive emissions data verification statements will be used to reconcile delivery data reported by natural gas suppliers, and will serve as a second source of data in instances of missing supplier data. In the event that a natural gas supplier receives an adverse verification statement, DEP will calculate the supplier's assigned emission level;

(3) DEP shall provide the supplier of natural gas a listing of all customers and aggregate natural gas (in MMBtu) and emissions calculated from the supplier's natural gas delivered to covered entities; and

(4) DEP shall calculate the metric tons CO₂e for which the supplier will be required to hold a compliance obligation based on the supplier's reported emissions less DEP's calculated emissions from deliveries to covered entities that are customers of the supplier. The Department shall provide this value to the supplier of natural gas within 30 days of the verification deadline in the MRR.

(d) Suppliers of RBOB and Distillate Fuel Oils. A supplier of petroleum products covered under sections 147.111(d) or 147.112(d) has a compliance obligation for every metric ton CO₂e of GHG emissions included in an emissions data report that has received a positive or qualified positive emissions data verification statement or for which emissions have been assigned that would result from full combustion or oxidation of the quantities of the following fuels that are removed from the rack in Pennsylvania, sold to entities not licensed in

Pennsylvania as a fuel supplier, or imported into Pennsylvania and not directly delivered to the bulk-transfer/terminal system, except for products for which a final destination outside Pennsylvania can be demonstrated:

- (1) RBOB;
 - (2) Distillate Fuel Oil No. 1; and
 - (3) Distillate Fuel Oil No. 2.
- (e) Suppliers of Liquefied Petroleum Gas:

(1) A producer of liquefied petroleum gas covered under sections 147.111(e) and 147.112(d) has a compliance obligation for every metric ton CO₂e of GHG emissions included in an emissions data report that has received a positive or qualified positive emissions data verification statement or for which emissions have been assigned that would result from full combustion or oxidation of all fuel sold, distributed, or otherwise transferred for consumption in Pennsylvania; and

(2) An importer of liquefied petroleum gas covered under section 147.111(e) has a compliance obligation for every metric ton CO₂e of GHG emissions included in an emissions data report that has received a positive or qualified positive emissions data verification statement or for which emissions have been assigned that would result from full combustion or oxidation of all fuel imported into Pennsylvania.

(f) Suppliers of Blended Fuels. An entity that supplies any of the fuels covered under sections 147.111(f) and 147.112(d) as blended fuels has an aggregated compliance obligation for every metric ton of CO₂e of GHG emissions based on the separate constituents of the blend included in an emissions data report that has received a positive or qualified positive emissions data verification statement or for which emissions have been assigned that would result from full combustion or oxidation of the fuel.

(g) Carbon Dioxide Suppliers. An entity that supplies carbon dioxide, “Carbon Dioxide Supplier” or “CO₂ Supplier”, covered under sections 147.111(h) and 147.112(c)(3), has an aggregated compliance obligation based on the sum of MT CO₂ included in an emissions data report that has received a positive or qualified positive emissions data verification statement or for which emissions have been assigned minus exported CO₂ that is not geologically sequestered,

and minus CO₂ verified to be geologically sequestered through use of a Department-approved carbon capture and geologic sequestration quantification methodology that ensures that the emissions reductions are real, permanent, quantifiable, verifiable, and enforceable. Emissions of CO₂ already covered with a compliance obligation upstream are not included.

(h) Petroleum and Natural Gas Systems. Operators of petroleum and natural gas production facilities, natural gas processing plants, natural gas transmissions compression facilities, underground natural gas storage facilities, and liquified natural gas storage, import and export facilities, and natural gas distribution facilities (collectively “Petroleum and Natural Gas Systems”) have a compliance obligation for every metric ton of CO_{2e} from CO₂, CH₄, and N₂O emissions from the following source types:

- (1) Metered natural gas pneumatic device and pump venting;
- (2) Non-metered natural gas pneumatic device venting;
- (3) Acid gas removal vents;
- (4) Dehydrator vents;
- (5) Well venting for liquids unloading;
- (6) Gas well venting during well completions and workovers;
- (7) Equipment and pipeline blowdowns;
- (8) Dump valves;
- (9) Well testing venting and flaring;
- (10) Associated gas venting and flaring;
- (11) Flare stack or other destruction device emissions;
- (12) Centrifugal compressor venting;
- (13) Reciprocating compressor venting;
- (14) EOR injection pump blowdown;
- (15) Crude oil, condensate and produced water CO₂ and CH₄;

(16) Equipment leaks from valves, connectors, open ended lines, pressure relief valves, pumps, flanges, and other equipment leak sources (such as instruments, loading arms, stuffing boxes, compressor seals, dump lever arms, and breather caps);

(17) Equipment leaks at below grade transmission-distribution transfer stations;

(18) Equipment leaks at above grade metering-regulating stations that are not above grade transmission-distribution transfer stations;

(19) Equipment leaks at below grade metering-regulating stations.

(20) Distribution main equipment leaks;

(21) Distribution services equipment leaks;

(22) Stationary fuel combustion sources;

(23) CO₂ and CH₄ emissions from customer meters (N₂O emissions excluded);

and

(24) CO₂ and CH₄ emissions from pipeline dig-ins (N₂O emissions excluded).

(i) The compliance obligation for sources specified in sections 147.152(a) through (h), and 147.152.1 is calculated based on the sum of the following, as applicable:

(1) Emissions of CO₂, CH₄, and N₂O which resulted from combustion of fossil fuel;

(2) Emissions of CH₄ and N₂O which resulted from combustion of all biomass-derived fuel;

(3) Emissions of CO₂ which resulted from combustion of biomass-derived fuels that do not meet the requirements in section 147.152.2(a);

(4) Emissions of CO₂ which resulted from combustion of biomass-derived fuels pursuant to section 147.152.1; and

(5) All process and vented emissions of CO₂, CH₄, and N₂O except for those listed in section 147.152.2(b).

(j) Suppliers of Liquefied Natural Gas and Compressed Natural Gas. A supplier of liquefied natural gas and/or compressed natural gas covered under sections 147.111(g) or

147.112(d) has a compliance obligation for every metric ton CO₂e of GHG emissions included in an emissions data report that has received a positive or qualified positive emissions data verification statement or for which emissions have been assigned that would result from full combustion or oxidation of the quantities of liquefied natural gas or compressed natural gas imported into Pennsylvania and/or produced in Pennsylvania from gas received from an interstate pipeline, excluding products for which a final destination outside Pennsylvania can be demonstrated, less the emissions from liquefied natural gas delivered to other covered entities as determined by DEP based on end-user delivery information reported by the supplier.

(k) Supplier of Coal. A supplier of coal covered under this chapter has a compliance obligation for every metric ton CO₂e of GHG emissions included in an emissions data report that has received a positive or qualified positive emissions data verification statement or for which emissions have been assigned that would result from full combustion or oxidation of the quantities of coal imported into Pennsylvania and/or produced in Pennsylvania, excluding products for which a final destination outside Pennsylvania can be demonstrated, less the emissions from coal to other covered entities as determined by DEP based on end-user delivery information reported by the supplier.

§ 147.152.1. Compliance Obligations for Biomass-Derived Fuels.

An entity that has emissions from combustion of biomass-derived fuels is required to report and verify its emissions and has a compliance obligation for every metric ton of CO₂e emissions:

- (a) From combustion of fuel types that are not listed under section 147.152.2; or
- (b) From combustion of fuels sourced from outside Pennsylvania that do not meet the requirements of section 147.152.1.1; or
- (c) That are reported as non-exempt biomass derived CO₂ under MRR.

§ 147.152.1.1. Eligibility Requirements for Biomass-Derived Fuels. An entity may not sell, trade, give away, claim, or otherwise dispose of any of the carbon credits, carbon benefits, carbon emissions reductions, carbon offsets or allowances, howsoever entitled, attributed to the fuel production that would, when combined with the CO₂ emissions from complete combustion of the fuel, result in more CO₂e emissions than would have occurred in the absence of the fuel

production. In the case of biomethane or biogas produced from digesters or landfills, the resulting credit for avoided methane emissions may not exceed the global warming potential plus 2.75 in metric tons of CO₂e per ton of captured methane. All calculations of CO₂e emissions are based on the 100-year global warming potentials included in MRR. Generation of Renewable Energy Credits is excluded from this analysis and will not prevent a biomass-derived fuel that meets the requirements in this section from being exempt from a compliance obligation.

§ 147.152.2. Emissions without a Compliance Obligation.

Emissions from the following source categories and from the combustion of the following fuel types count toward applicable reporting thresholds, but do not count toward a covered entity's compliance obligation set forth in this article unless those emissions are reported as non-exempt biomass-derived CO₂ under MRR. Emissions without a compliance obligation include:

- (a) CO₂ emissions from combustion of the following biomass-derived fuels:
 - (1) The biogenic fraction of solid waste materials as reported under MRR;
 - (2) Waste pallets, crates, dunnage, manufacturing and construction wood wastes, tree trimmings, mill residues, and range land maintenance residues;
 - (3) All agricultural crops or waste;
 - (4) Wood and wood wastes identified to follow all of the following practices:
 - (A) Harvested pursuant to an approved timber management plan prepared in accordance with a locally or nationally approved plan, or a plan consistent with the FSF or SFI certification program; and
 - (B) Harvested for the purpose of forest fire fuel reduction or forest stand improvement.
 - (5) Biodiesel:
 - (A) Agri-biodiesel derived solely from virgin oils, including esters derived from virgin vegetable oils from corn, soybeans, sunflower seeds, cottonseeds, canola, cramble, rapeseeds, safflowers, flaxseeds, rice bran, mustard seeds, and camelina, and from animal fats.

(B) Biodiesel is defined as monoalkyl esters of long chain fatty acids derived from the following plant or animal matter that meets the requirements of the American Society of Testing Materials (ASTM) D6751:

1. Waste oils;
2. Tallow; or
3. Virgin oils.

(6) Fuel ethanol (including denaturant):

(A) Cellulosic biofuel produced from lignocellulosic or hemicellulosic material that has a proof of at least 150 without regard to denaturants;

(B) Corn starch; or

(C) Sugar cane.

(7) The biogenic fraction of municipal solid waste as reported under MRR, including MSW directly combusted or converted to a cleaner-burning fuel;

(8) Biomethane and biogas from the following sources:

(A) All animal, plant and other organic waste; or

(B) Landfills and wastewater treatment plants;

(9) Renewable diesel.

(b) The following additional process, vented, and fugitive emissions:

(1) Vented and fugitive emissions from storage tanks used in petroleum and natural gas production and natural gas transmission;

(2) Vented and fugitive emissions reported the MRR by local distribution companies that report the MRR;

(3) Vented and fugitive emissions from natural gas transmission storage tanks used in petroleum and natural gas production and natural gas transmission, and from produced water;

- (4) Emissions reported by petroleum refineries from asphalt blowing operations, equipment leaks, storage tanks, and loading operations;
 - (5) Emissions from intermittent-bleed pneumatic devices;
 - (6) Vented emissions from well-site centrifugal and reciprocating compressors with a rated horsepower less than 250hp;
 - (7) Sources for which fugitive emissions are estimated using leak detection and leaker emission factors and sources for which vented and fugitive emissions are estimated using a population count and emissions factors;
 - (8) Carbon dioxide that is exported for purposes other than geologic sequestration or enhanced oil recovery;
 - (9) Carbon dioxide used in the carbonation process during sugar production in facilities with NAICS code 311313;
 - (10) Carbon dioxide from fermentation that occurs during the production of food and beverages; and
 - (11) For fuel cells powered by biomass-derived fuels as defined in section 147.152.1.1, process emissions from the oxidation of the biomass-derived fuel are exempt from a compliance obligation.
- (c) The exemptions provided under this section do not apply where the biomass or carbon dioxide originates from carbon dioxide emissions from fossil fuels or carbonate rock that has been captured and used where no allowances have been surrendered for the original emissions.

§ 147.153. Calculation of Covered Entity's Full Compliance Period Compliance Obligation.

- (a) A covered entity that exceeds the threshold in section 147.112 in any of the four data years preceding the start of a compliance period is a covered entity for the entire compliance period. The covered entity's full compliance period compliance obligation in this situation is calculated as the total of the emissions with a compliance obligation that received a positive or

qualified positive emissions data verification statement, or were assigned emissions to correct omissions or errors in their emissions data from all data years of the compliance period.

(b) A covered entity that initially exceeds the threshold in section 147.112 in the first year of a compliance period is a covered entity for the entire compliance period. The covered entity's full compliance period compliance obligation in this situation is calculated as the total of the emissions that received a positive or qualified positive emissions data verification statement, or were assigned emissions to correct omissions or errors in their emissions data from all data years of the compliance period.

(c) A covered entity that initially exceeds the threshold in section 147.112 in the second year of a compliance period is a covered entity for the second and any remaining years of this compliance period. The covered entity's full compliance period compliance obligation in this situation is calculated as the total of the emissions that received a positive or qualified positive emissions data verification statement or were assigned emissions to correct omissions or errors in their emissions data for the second and any remaining data years of the compliance period.

(d) A covered entity that initially exceeds the threshold in section 147.112 in the final year of a later compliance period has a compliance obligation for its emissions that received a positive or qualified positive emissions data verification statement or were assigned emissions to correct omissions or errors in their emissions data for that year, but the entity's full compliance period compliance obligation for the current compliance period is not due the following year. Instead the entity's reported and verified or assigned emissions for this year will be added to the entity's full compliance period obligation for the subsequent compliance period.

§ 147.154. Quantitative Usage Limit on Designated Compliance Instruments— Including Offset Credits.

(a) Compliance instruments identified in section 147.120(b) and sections 147.121(b), (c), and (d) are subject to a quantitative usage limit when used to meet a compliance obligation.

(b) The total number of compliance instruments identified in section 147.154(a) that each covered entity may surrender to fulfill the entity's compliance obligation for a compliance period must conform to the following limit:

Oo/S must be less than or equal to Lo

In which:

Oo = Total number of compliance instruments identified in section 147.154(a) submitted to fulfill the entity's compliance obligation for the compliance period.

S = Covered entity's compliance obligation.

Lo = Quantitative usage limit on compliance instruments identified in section 147.154(a), set at 0.08.

§ 147.155. Annual Compliance Obligation.

(a) An entity has an annual compliance obligation for any year when the entity is a covered entity except for the condition specified in section 147.153(d); and

(b) The annual compliance obligation for a covered entity equals 30 percent of emissions with a compliance obligation reported from the previous data year that received a positive or qualified positive emissions data verification statement or were assigned emissions to correct omissions or errors in their emissions data.

§ 147.156. Timely Surrender of Compliance Instruments by a Covered Entity.

(a) A covered entity must surrender one compliance instrument for each metric ton of CO₂e of GHG emissions for the annual and full compliance period compliance obligations calculated pursuant to this subchapter beginning with the emissions reported in the emissions data report for the first year in which this chapter becomes effective and each subsequent year in which the covered entity has a compliance obligation.

(b) Compliance Instruments Valid for Surrender.

(1) A compliance instrument listed in subchapter 4 may be used to satisfy a compliance obligation.

(2) To fulfill a compliance obligation, a compliance instrument issued pursuant to sections 147.120(a) and 147.121(a) must be issued from an allowance budget year within or before the year for which an annual compliance obligation is calculated or the last year of a compliance period for which a full compliance period compliance obligation is calculated, unless:

(A) The allowance was purchased from a Pennsylvania Allowance Price Containment Reserve sale, is any other Pennsylvania-issued non-vintage compliance instrument, or is an Allowance Price Containment Reserve Allowance or other non-vintage allowance issued by a program approved by DEP pursuant to section 147.241 as specified in section 147.121(a);

(B) The allowance is used to satisfy an excess emissions obligation; or

(C) The allowance is eligible for compliance use pursuant to sections 147.156(h)(1)(D) and 147.156(h)(2)(D).

(c) A covered entity must transfer from its holding account to its compliance account a sufficient number of valid compliance instruments to meet the compliance obligation set forth in sections 147.153 and 147.155.

(d) **Deadline for Surrender of Annual Compliance Obligations.** For any year in which a covered entity has an annual compliance obligation pursuant to section 147.155, it must fulfill that obligation: by November 1, 5 p.m. Eastern Standard Time of the calendar year following the year for which the obligation is calculated. Transfers to compliance accounts may be restricted during the time the tracking system is processing the surrender of the annual compliance obligation.

(e) **Determination of Full Compliance Period Compliance Obligation.**

(1) When a positive or qualified positive emissions data verification statement or assigned emissions for any year is received by DEP, then those emissions for the source categories in section 147.152 equal the full compliance period compliance obligation pursuant to section 147.153.

(2) If a positive or qualified positive emissions data verification statement for any year of the compliance period is not received by DEP by the applicable verification deadline, DEP will assign emissions based upon past reports or reasonable engineering judgment regarding the party's emissions. The assigned emissions value then equals the compliance obligation.

(f) **Surrender of Full Compliance Period Compliance Obligation.**

(1) The covered entity must transfer sufficient valid compliance instruments to its compliance account to fulfill its full compliance period compliance obligation by November 1, 5 p.m. Eastern Standard Time of the calendar year following the final year of the compliance

period. Transfers to compliance accounts may be restricted during the time the tracking system is processing the surrender of the full compliance period compliance obligation.

(2) The total number of compliance instruments submitted to fulfill the full compliance period compliance obligation is subject to the quantitative use limit pursuant to section 147.154.

(3) The surrender of compliance instruments must equal the full compliance period compliance obligation calculated pursuant to section 147.153 less compliance instruments surrendered to fulfill the annual compliance obligation for the years in the compliance period.

(g) In determining whether the covered entity has fulfilled its compliance obligations, the Department shall:

(1) In the case of annual and full compliance period compliance obligations, determine the status of compliance with the annual or full compliance period compliance obligation by evaluating the number and types of compliance instruments in the Compliance Account; and

(A) Retire the compliance instruments surrendered; and

(B) Inform programs to which Pennsylvania is linked or recognizes, pursuant to subchapters 12 and 14, of the retirements, including the serial numbers of the compliance instruments retired.

(h) Annual and Full Compliance Period Compliance Instrument Requirements.

(1) When a covered entity or opt-in covered entity surrenders compliance instruments to meet its annual compliance obligation pursuant to section 147.156(d), the Secretary will retire them from the Compliance Account in the following order:

(A) Offset credits specified in section 147.120(b) and sections 147.121(b) through (d), up to eight percent of the emissions with a compliance obligation pursuant to section 147.154;

(B) Allowances purchased from a Pennsylvania Allowance Price Containment Reserve sale followed by Allowance Price Containment Reserve Allowances and then other non-vintage allowances issued by a program approved by DEP pursuant to section 147.241 as specified in section 147.121(a);

(C) Allowances specified in section 147.120(a) and 147.121(a) with earlier vintage allowances retired first; and

(D) The current calendar year's vintage allowances and allowances allocated just before the annual surrender deadline up to the true-up allowance amount as determined in sections 147.191(b), 147.191(c)(2)(B), or 147.194(c) if an entity was eligible to receive true up allowances pursuant to section 147.191(b), 147.191(c)(2)(B), or 147.194(c).

(2) When a covered entity or opt-in covered entity surrenders compliance instruments to meet its full compliance period compliance obligation pursuant to section 147.156(f), the Secretary will retire them from the Compliance Account in the following order:

(A) Offset credits specified in section 147.120(b) and sections 147.121(c) and (d) with oldest credits retired first and subject to the quantitative usage limit set forth in section 147.154:

(B) Allowances purchased from a Pennsylvania Allowance Price Containment Reserve sale followed by Allowance Price Containment Reserve Allowances and then other non-vintage allowances issued by a program approved by DEP pursuant to section 147.241 as specified in section 147.121(a);

(C) Allowances specified in section 147.120(a) and 147.121(a) with earlier vintage allowances retired first; and

(D) The current calendar year's vintage allowances and allowances allocated just before the full compliance period surrender deadline up to the true-up allowance amount as determined in section 147.191(b), 147.191(c)(2)(B), or 147.194(c) if an entity was eligible to receive true up allowances pursuant to section 147.191(b), 147.191(c)(2)(B), or 147.194(c).

(3) An entity that is not eligible to receive true up allowances pursuant to section 147.191(b), 147.191(c)(2)(B), or 147.194(c) cannot use the current calendar year's vintage allowances or allowances allocated just before the current surrender deadline to meet the timely surrender of compliance instrument requirements in section 147.156.

(4) An electric distribution utility will not be in violation of section 147.192(d)(5) when the Secretary retires compliance instruments, if the electric distribution utility has a sufficient quantity of eligible compliance instruments not allocated pursuant to section 147.170(d) in its compliance account, at the time the timely surrender of compliance instruments

by a covered entity is due pursuant to section 147.156, that is at least equal to its compliance obligation for any transactions for which the use of allocated allowance value is prohibited under section 147.192(d)(5).

§ 147.157. Untimely Surrender of Compliance Instruments by a Covered Entity.

(a) Applicability.

(1) A covered entity or opt-in covered entity that does not meet the compliance deadline for surrendering its annual or full compliance period compliance obligation pursuant to section 147.156 is subject to the compliance obligation for untimely surrender as described in this section; and

(2) The compliance obligation for untimely surrender (“excess emissions”) will not apply to a covered entity or opt-in covered entity which is determined to have transferred insufficient instruments to meet the compliance obligations of section 147.156 solely because of the invalidation of a DEP offset credit by the Secretary pursuant to section 147.285 until six months after notice of invalidation.

(b) Calculation of the Untimely Surrender Obligation. The untimely surrender obligation is the number of compliance instruments that an entity must surrender if it does not meet its original annual or full compliance period compliance obligation. The untimely surrender obligation replaces any unfulfilled portion of an entity’s annual or full compliance period compliance obligation.

(1) The quantity of excess emissions is the difference between the compliance obligation calculated pursuant to this section and any compliance instruments timely surrendered by the entity;

(2) The entity’s compliance obligation for untimely surrender is calculated as four times the entity’s excess emissions;

(3) At least three-fourths of an entity’s compliance obligation for untimely surrender may only be fulfilled with PA GHG allowances or allowances issued by a GHG ETS pursuant to subchapter 12;

(4) Up to one-fourth of an entity's compliance obligation for untimely surrender may be fulfilled with DEP offset credits or compliance instruments listed in sections 147.121(b), (c), and (d);

(5) The sum of the offset credits submitted by the entity in a timely manner to fulfill its full compliance period compliance obligation plus any offset credits submitted as part of the untimely surrender obligation must be less than or equal to the number of offsets that the entity is allowed to submit when the quantitative usage limit on offset credits is applied to the entity's full compliance period obligation; and

(6) The untimely surrender obligation is due within five days of settlement of the first auction or reserve sale conducted by DEP following the applicable surrender date, whichever is the latter, and for which the registration deadline has not passed when the untimely surrender obligation is assessed. Future vintage allowances are eligible for complying with the untimely surrender obligation.

(c) If an entity with an untimely surrender obligation fails to satisfy this obligation pursuant to section 147.157(b)(6) then:

(1) DEP will determine the number of violations pursuant to section 147.314;

(2) If a portion of the untimely surrender obligation is not surrendered as required, the entity will have a new untimely surrender obligation equal to the amount of the previous untimely surrender obligation which was not satisfied by the deadline stated in section 147.157(b)(6) upon which the number of violations will be calculated pursuant to section 147.314. The new untimely surrender obligation is due immediately; and

(3) There will be no additional untimely surrender obligation amount assessed beyond the new untimely surrender obligation determined pursuant to section 147.157(c)(2).

(d) When the covered entity or opt-in covered entity meets its untimely surrender obligations pursuant to sections 147.157(a) through (c), DEP shall:

(1) Transfer the compliance instruments used to fulfill the untimely surrender obligation in the following manner:

(A) At least three fourths of the compliance instruments to the Auction Holding Account. The three fourths of the compliance instruments transferred to the Auction Holding Account shall only be comprised of allowances; and

(B) The remaining one fourth of compliance instruments to the Retirement Account.

(2) Inform programs to which Pennsylvania is linked or recognizes, pursuant to subchapters 12 and 14, of the retirements, including the serial numbers of the compliance instruments retired.

§ 147.158. Compliance Obligation for Under-Reporting in a Previous Compliance Period.

If, after an entity has surrendered its compliance instruments to fulfill a compliance obligation pursuant to sections 147.156 or 147.157, the Department determines, through an audit or other information, that the entity under-reported its emissions for any emissions sources that form the basis for the entity's compliance obligation, then the following shall apply:

(a) If the difference between the emissions used to calculate the compliance obligation and subsequently used to calculate the number of compliance instruments surrendered pursuant to sections 147.155 or 147.156 and the emissions determined by the Department to be under-reported for the sum of those emissions is less than five percent of the emissions number used to calculate the compliance obligation and subsequently used to calculate the number of compliance instruments surrendered pursuant to sections 147.155 or 147.156, then the entity is not required to take any further action.

(b) If the difference between the emissions used to calculate the compliance obligation and subsequently calculate the number of compliance instruments surrendered pursuant to sections 147.155 or 147.156 and the emissions determined by the Department to be under-reported for the sum of those emissions is more than five percent of the emissions number used to calculate the compliance obligation and subsequently used to calculate the number of compliance instruments surrendered pursuant to sections 147.155 or 147.156, then the entity must surrender compliance instruments in the following amount:

$$Cla = EMd - CO - (CO * 0.05)$$

Where:

“Cla” is the number of additional compliance instruments that must be surrendered to DEP to cover under-reported emissions;

“CO” is the emissions number used to determine the compliance obligation surrendered pursuant to sections 147.155 or 147.156; and

“EMd” is the number of the emissions determined by the Secretary for the sum of the emissions sources subject to a compliance obligation.

(c) The entity must surrender additional compliance instruments as determined pursuant to this section for under-reporting emissions under MRR at the next compliance event scheduled pursuant to section 147.156. The provisions of sections 147.157 and 147.314 shall not apply until after the date of that compliance event. The entity may use any compliance instruments acceptable for that compliance event to meet these requirements.

(d) Any determination that an entity under-reported its emissions shall be made by the Secretary no later than eight years from the applicable verification deadline for the emissions data report which contained the under-reporting of emissions.

Subchapter 8: Disposition of Allowances

§ 147.170. Disposition of Allowances.

(a) Allowance Price Containment Reserve. Upon creation of the Allowance Price Containment Reserve Account, the Department shall transfer four percent of each year's annual allowances to the Allowance Price Containment Reserve.

(b) Advance Auction. The Department may create an Advance Auction, in which case it shall create an Auction Holding Account, the Secretary and transfer 10 percent of the allowances from first five predicted budget years to the Auction Holding Account.

(1) These allowances will be eligible to be sold pursuant to section 147.213(f)(5).

(2) All Advance Auction allowances not sold pursuant to section 147.213(f)(5) will be auctioned pursuant to section 147.210.

(3) The proceeds from the sale of these allowances will be deposited in the General Fund unless otherwise directed by the General Assembly and except as provided in section 147.170(b)(3).

(4) If any municipality with an air program including this cap-and-trade program that has been approved by the Department wishes to have the Department conduct an auction of the allowances governed by the municipality's approved program, the Department shall distribute the proceeds from the sale of allowances to the municipality or as otherwise directed by the municipality.

(b) Allocation to Account for Distribution to Parties Approved for a Direct Allocation.

(1) Upon the Department's approval of a party's application for direct allocation of allowances, the Department shall transfer the next year's allocation of allowances for that party to the Approved Direct Allocation Account for that year.

(2) The Department shall transfer any allowances for which a party is entitled to a direct allocation from the Direct Allocation Account to the Party's account upon application by the party after transfer of the allowances into the Direct Allocation Account and upon payment

by the party of any price required by the terms of the Department's approval of the party's application. If any payment is required by the terms of the Department

(3) Allowances in the annual allocation holding account are transferred to the Holding Account on January 1 of the vintage year of the allowances.

(c) All allowances not transferred to the Cost Containment Reserve Allocation to Account for Distribution to Approved Parties shall be made available for auction.

(d) Auction Proceeds and Receipts from the Sale of Directly Allocated Allowances

(1) All proceeds from the sale of allowances shall be transferred to the General Fund, unless another disposition is approved by the General Assembly, or to a municipality with an approved program.

(2) If the General Assembly provides authorization for the transfer of proceeds from allowance sales to any party or fund other than the General Fund, those proceeds shall be transferred as authorized and the transfer of funds to the General Fund pursuant to § 147.170(d)(1) reduced accordingly.

Subchapter 9: Direct Allocations of Pennsylvania GHG Allowances

§ 147.190. Eligibility Requirements for Direct Allocations.

(a) In order to receive a direct allocation of Pennsylvania GHG allowances, an entity must (i) be required to submit allowances under this chapter, (ii) satisfy the eligibility requirements set forth in this section, (iii) have submitted a timely and complete application pursuant to section 147.190, (iv) have been approved or conditionally approved by the Department, and (v) not have changed circumstances by reducing production from the levels one year prior to the effective date of this regulation or closed or partially closed production.

(b) To receive a direct allocation from the Department, the party must demonstrate to the Department that (i) it is involved in the production of goods through industrial or agricultural processes, as determined by the Department; (ii) it is subject to competition from businesses in other states or nations that do not impose a price on CO_{2e} emissions, and (iii) unless the party receives a direct allocation, that competition could reasonably be anticipated to result in “Leakage” as defined herein.

(c) “Leakage” means increased emission of CO_{2e} that occurs as a result of a business activity subject to regulation under this chapter partially or wholly moving to jurisdictions subject to less stringent regulation of those emissions than occurs in Pennsylvania after reducing or ceasing those activities in Pennsylvania.

(d) The following activities shall be ineligible for a direct allocation of allowances:

(1) Generation of electricity for delivery to the grid other than where the process is engaged in the co-generation of electricity and steam for uses other than electricity generation (“Cogeneration”). Processes engaged in Cogeneration otherwise meeting the criteria for a direct allocation of allowances shall be entitled to a direct allocation only to the extent of the CO_{2e} emissions that would have occurred if no electricity generation had occurred, as determined by the Department. In determined the extent of eligibility for Cogeneration, the Department may rely upon the formulae developed by the State of California.

(2) Production, transportation, or distribution of any fossil fuel.

§ 147.191. Applications for Direct Allocation of Allowances.

(a) Applications for direct allocations of allowances shall be submitted to the Department's central office in Harrisburg, Pennsylvania, at least six (6) months before the first year in which the applicant wishes the direct allocation to take place.

(b) Each application shall contain, at a minimum, the following information:

(1) Identification of the activity or activities (e.g. process or processes) requiring the surrender of allowances.

(2) A demonstration, for each such activity (or process) that the applicant is subject to competition in jurisdictions that do not regulate the emissions of CO₂e in a manner that will impose a cost equivalent to that imposed by this chapter and that this can reasonably be anticipated to result in Leakage unless the applicant is granted a direct allocation of allowances.

(3) The most recent five (5) years of production data that is available for the activity (or process) for which the direct allocation is sought (or fewer if the activity commenced less than five years previously).

(4) The emissions of CO₂e that would require the surrender of allowances associated with each of those years of production.

(5) The applicant's agreement to supplement and update the information provided annually, even where not required to report.

(6) Such other information as the Department shall deem necessary or appropriate.

§ 147.192. Applications for Direct Allocation of Pennsylvania GHG Allowances for Activities Commencing or Increasing After the Effective Date of this Chapter.

(a) Entities wishing to commence or expand an activity that will require the surrender of allowances under this chapter must satisfy any pertinent eligibility requirements of section 147.191 and submit an application to the Department containing any the information set forth in section 147.192, to the extent available. The application must contain projected production and projected emissions data and must demonstrate that the proposed process employs the best

available system of control technology for the prevention or reduction of greenhouse gas emissions.

§ 147.194. Department Action on Applications for Direct Allocation of Pennsylvania GHG Allowances.

(a) Upon receipt of an application for direct allocation of Pennsylvania GHG Allowances, the Department shall publish notice of the application in the Pennsylvania Bulletin and provide a twenty day comment period.

(b) The Department will consult with the Department of Community and Economic Development in connection with any application under this section and consider these comments and any public comments before acting on any such application.

(c) If the Department has not acted on any application submitted at least 180 days before the date for the surrender of allowances, it shall make the direct allocation requested without a charge, subject to the requirement that the applicant surrender any excess allowances and pay all charges pursuant to section 147.196 following the Department's action on any application.

(d) The Department's final action under this section is appealable to the Pennsylvania Environmental Hearing Board.

§ 147.195. Conditions to and Limitations Upon the Direct Allocation of Pennsylvania GHA Allowances.

(a) No direct allocation of allowances may continue after [Insert date], the 20th anniversary of the effective date of this chapter.

(b) Every direct allocation shall be reduced by five percent (5%) of the original allocation per annum.

(c) The Department shall impose the maximum price per ton on the direct allocation, up to the greater of the reserve auction price or the average clearing price of the last two auction, to the extent feasible consistent with the prevention of Leakage. The Department shall reassess

the price each year and adjust it consistent with the objectives of preventing leakage and obtaining a reasonable income for the beneficiaries of the Article I, §27 trust.

(d) Except as provide in subsection (e), DEP shall not approve a direct allocation that is greater than that to which a “Best Sector Performer” would be entitled. The Best Sector Performer is the facility in Pennsylvania in the applicable category or subcategory set forth in 40 C.F.R. part 60 (standards of performance for new stationary sources established under section 111 of the Clean Air Act) that has achieved the lowest rate of GHG emissions per unit of production. The maximum allocation, other than an allocation under subsection (e) of this section would be calculated as follows:

$$A_n = BSR_R * P_n$$

Where A_n is the maximum direct allocation to which a given party “n” is entitled; $A_n = BSR_R$ is the rate of GHG emissions per unit of production in CO₂e that has been achieved by the Best Sector Performer and P_n is the annual production of the given party “n”.

(e) If DEP determines that a direct allocation based on subsection (d) would result in Leakage with respect to any facility (underperforming facility or “UPF”) it may provide for an additional direct allocation. If DEP provides any party with an additional direct allocation, then it shall provide all other Pennsylvania facilities in the same category or subcategory in 40 C.F.R. part 60 with an additional direct allocation according to the following formula:

$$A_n = (A_{UPF}/P_{UPF}) * P_n$$

Where A_n is the allocation to which other facilities in the category or subcategory are entitled; A_{UPF} is the direct allocation that is provided to the underperforming facility; P_{UPF} is the production upon which the underperforming facility’s direct allocation is based P_n is the production rate for the facility “n” receiving the increased allocation.

§147.196. Return of Allocation.

(a) If a covered entity or opt-in covered entity received a direct allocation of allowances for a year in which it ceased production or reduced production by more than five percent in the activity upon which its direct obligation is based, the entity must fulfill the following requirements. The entity must either (i) return N allowances by November 1 of the calendar year $t + 1$, where t is the year for which the entity received an allowance allocation but

reduced or ceased production or (ii) pay the difference between the price that it paid and the clearing price for allowances in the year in which the entity received a direct allocation.

(b) The entity's obligation to return or pay for allowances shall be based on the following formula:

$$N = n - p_1/p_0$$

Where n = the number of direct allowances awarded for the year in which production ceased or was reduced by more than five percent of the production in the year in which production was reduced or ceased and p_0 is the level of production on which the direct allocation is based.

(c) To return allowances to the Department, an entity must place the appropriate number of allowances into its compliance account and notify the Department. The allowances are considered to be returned only after they have been removed from the compliance account by the Department. To pay for allowances, the entity must make payment in the same manner as if it had purchased the allowances at auction. If an entity fails to return allowances or make additional payment, then DEP will determine the number of violations pursuant to section 147.314.

Subchapter 10: Auction and Sale of Pennsylvania Greenhouse Gas Allowances

§ 147.210 Auction of Pennsylvania GHG Allowances.

(a) **Timing of the Allowance Auctions.** Auctions shall be conducted on the schedule pursuant to Appendix C. The schedule may be adjusted by a maximum of 4 business days from the dates listed in Appendix C.

(b) **General Requirements.** An allowance may be designated for auction prior to or after its vintage year.

(c) Allowances from future vintages will be auctioned separately from allowances from current and previous vintages each quarter.

(1) **Auction of Allowances from the Current and Previous Budget Years.**

(A) This auction will be known as the Current Auction.

(B) One quarter of the allowances allocated for auction from the current calendar year's budget will be designated for sale at each Current Auction.

(C) The Current Auction may include allowances consigned to auction that have a vintage equal or prior to the current budget year.

(D) Allowances from the current budget year and fifty percent of Allowances from previous budget years which remained unsold at previous auctions and have not been transferred to the Cost Containment Reserve or retired will be designated for the Current Auction.

(E) Fifty percent of the Allowances from previous budget years that remained unsold shall be permanently retired.

(2) **Auction of Allowances from Future Budget Years.**

(A) This auction will be known as the Advance Auction.

(B) One quarter of the allowances allocated for Advance Auction from the budget year three years subsequent to the current calendar year will be designated for sale at each Advance Auction.

(C) The Advance Auction may include allowances which were returned to the Auction Holding Account following an Advance Auction which resulted in unsold allowances, and which are designated for auction pursuant to section 95911(f)(3).

(d) Auction of Consigned Allowances.

(1) When the Executive Officer withdraws compliance instruments from accounts containing allowances in excess of the holding limit, or from accounts suspended or revoked:

(A) Allowances shall be consigned to the next auction;

(B) If, after review, the Executive Officer determines that any offset credits, or offset credits issued from a GHG ETS to which Pennsylvania has linked pursuant to subchapter 12, remaining in the entity's accounts are valid, the Executive Officer will remove the offset credits from any holding or compliance account needed to fulfill the entity's compliance obligation. If offset credits remain in the entity's compliance account thereafter, the Executive Officer will return them to the entity's holding account.

(C) The Executive Officer will retire any withdrawn allowances issued by the Department or by a GHG ETS to which Pennsylvania has linked pursuant to subarticle 12 that have no vintage, offer an equal number of current budget year vintage allowances from the Auction Holding Account, and consign those allowances to the next Current Auction in place of the retired allowances that have no vintage.

(D) The Executive Officer will retain in the Auction Holding Account any withdrawn allowances that have a vintage that is later than the current budget year, offer an equal number of current budget year vintage allowances from the Auction Holding Account, and consign those allowances to the next Current Auction in place of the retained future vintage allowances.

(2) Each consigning entity agrees to accept the auction settlement price for allowances sold at auction.

(3) Deadline for Consignment. Allowances designated for consignment pursuant must be transferred to the Auction Holding Account at least 75 days before the auction as scheduled in Appendix C.

(e) Auction of Allowances Used to Fulfill an Untimely Surrender Obligation. When the Executive Officer transfers compliance instruments used to fulfill an untimely surrender obligation to the Auction Holding Account:

(1) Allowances with a vintage year corresponding to the current or previous budget years will be designated to the Current Auction;

(2) Allowances with a vintage year corresponding to a budget year three years subsequent to the current calendar year will be designated to the Advance Auction;

(3) Allowances with a vintage corresponding to a budget year one year or two years subsequent to the current year will remain in the Auction Holding Account until their vintage corresponds to the current calendar year. They will then be designated for the Current Auction.

(4) The Executive Officer will retire any allowances issued from the Department or a GHG ETS to which Pennsylvania has linked pursuant to subchapter 12 that have no vintage.

§ 147.211. Format for Auction of Pennsylvania GHG Allowances.

(a) Auction Bidding Format.

(1) The auction will consist of a single round of bidding.

(2) Bids will be sealed.

(3) Bid quantities must be submitted as multiples of 1,000 Pennsylvania GHG allowances.

(4) Entities registered into the Pennsylvania Cap-and-Trade Program must submit bids in whole U.S. dollars and whole cents.

(5) The allowances for auction in section 147.211(a)(3) will also include allowances from a jurisdiction operating an External GHG ETS system to which Pennsylvania has linked pursuant to subchapter 12.

(b) Auction Reserve Price Schedule.

(1) Each auction will be conducted with an auction reserve price.

- (2) No allowances will be sold at bids lower than the auction reserve price.
- (c) Method for Setting the Auction Reserve Price.

(1) The Auction Reserve Price shall be on a the greater of the reserve price using the method set forth in section 147.211(c)(2) and the highest reserve price established for any External GHG ETS system to which Pennsylvania has linked pursuant to subchapter 12.

(2) Unless the Auction Reserve Price is set equal to a higher price established for any External GHG ETS system linked to Pennsylvania pursuant to subchapter 12, the reserve price shall be based upon a reserve price for calendar year 2020 equal to ten dollars (\$10.00), and shall increase each calendar year by the rate of inflation plus 10 percent as provided in section 147.211(c), provided, however, that the auction reserve price established by this method shall not exceed the highest reserve price established for any of the programs identified in section 147.240(b) of this chapter. Beginning in 2020, and each year thereafter, the Auction Reserve Price for auctions to be conducted the following calendar year will be established and announced on the first day in December that is a business day in Pennsylvania. The Reserve Price shall be stated in U.S. dollars. The Auction Reserve Price will be calculated and announced by the Auction Administrator.

(3) The Auction Reserve Price shall be determined and announced using the following procedure.

(A) The Auction Reserve Price in U.S. dollars shall be the greater of (i) U.S. dollar Auction Reserve Price for the previous calendar year increased annually, beginning in 2021, by 10 percent plus the rate of inflation as measured by the most recently available twelve months of the Consumer Price Index for All Urban Consumers and (ii) the highest auction reserve price established by any External GHG ETS system linked to Pennsylvania pursuant to subchapter 12.

(B) Prior to the opening of the auction window on the day of the auction, the Auction Administrator shall announce the Auction Reserve Price.

(4) The Auction Reserve Price will be announced prior to the opening of the auction window at 10 a.m. Eastern Standard Time (or Eastern Daylight Time when in effect) on the day of the auction and will be in effect until the window closes at 1 p.m. Eastern Standard Time (or Eastern Daylight Time when in effect).

(5) The Auction Reserve Price will be announced on the first day in December that is a business day in Pennsylvania and in any jurisdiction operating an External GHG ETS to which Pennsylvania has linked pursuant to subchapter 12 and the Reserve Price shall also be stated in the currency (or currencies) used in an External GHG ETS to which Pennsylvania has linked pursuant to subchapter 12.

(d) Auction Purchase Limit.

(1) The auction purchase limit is the maximum number of allowances offered at each Current and Advance Auction which can be purchased by any entity or group of entities with a direct corporate association.

(2) Purchase Limit Values.

(A) The purchase limit for covered entities, electrical distribution utilities, opt-in covered entities, or direct corporate associations containing any of these types of entities will be 25 percent of the allowances offered for auction at both the Current and Advance Auctions.

(B) The purchase limit for voluntarily associated entities or direct corporate associations comprised entirely of these entities is four percent of the allowances offered for auction at the Current and Advance Auctions.

(3) Auction Purchase Limits for Members of a Direct Corporate Association.

(A) Entities that are part of a direct corporate association must allocate a specified percentage share of the association's purchase limit to each member of the direct corporate association. The sum of the percentage shares allocated among the entities must equal one hundred percent. The purchase limit for each associated entity is its allocated percentage share multiplied by the auction purchase limit assigned to the association.

(B) For voluntarily associated entities that are part of a corporate association containing covered entities, opt-in covered entities, or electrical distribution utilities, the total purchase limit assigned to voluntarily associated entities within the corporate association must be less than or equal to four percent of the allowances to be auctioned at Current and Advance Auctions.

(e) Determination of Winning Bidders and Settlement Price. The following process shall be used to determine winning bidders, amounts won, and a single auction settlement price:

(1) Each bid will consist of a price and the quantity of allowances, in multiples of 1,000 PA GHG Allowances, desired at that price.

(2) Each bidder may submit multiple bids.

(3) Beginning with the highest bid price, bids from each bidder will be considered in declining order by price, and the auction operator shall reject a bid for a bundle of 1,000 allowances:

(A) If acceptance of the bid would result in violation of the purchase limit pursuant to sections 147.211(d) and 147.214;

(B) If acceptance of the bid would result in violation of the holding limit pursuant to section 147.220(b); or

(C) If acceptance of the bid would result in a total value of accepted bids for an auction participant greater than the value of the bid guarantee submitted by the auction participant pursuant to section 147.212(j).

(4) Bids from all bidders will be ranked from highest to lowest by price. Beginning with the highest bid and proceeding to successively lower bids, entities submitting bids at each price will be sold allowances until:

(A) The next lower bid price is less than the auction reserve price, in which case the current price becomes the auction settlement price; or

(B) The total quantity of allowances contained in the bids at the next lower bid price is greater than or equal to the number of allowances yet to be sold, in which instance, the next lower bid price becomes the auction settlement price and the procedure for resolution of tie bids in section 147.211(e)(5) shall apply.

(5) Resolution of tie bids. If the quantity of allowances contained in the bids placed at the auction settlement price is greater than the quantity of allowances available to be sold at that price, then:

(A) The Auction Administrator will calculate the share of the remaining allowances to be distributed to each entity bidding at the auction settlement price by dividing the quantity bid

by that entity and accepted by the auction administrator by the total quantity of bids at the settlement price which were accepted by the Auction Administrator;

(B) The Auction Administrator will calculate the number of allowances distributed to each bidding entity by multiplying the bidding entity's share calculated in section 147.211(e)(5)(A) above by the number of allowances remaining, rounding the number down to the nearest whole number; and

(C) To distribute any remaining allowances, the Auction Administrator will assign a random number to each entity bidding at the auction settlement price. Beginning with the lowest random number, the Auction Administrator will assign one allowance to the last bundle purchased by each entity until the remaining allowances have been assigned.

(f) If the quantity of bids accepted by the Auction Administrator is less than the number of allowances offered for sale then some allowances will remain unsold.

(1) If allowances remain unsold at auction, the Auction Administrator will fulfill winning bids with allowances from consignment sources in the following order:

(A) Allowances consigned to auction pursuant to section 147.210(d)(2);

(B) Allowances redesignated to the auction pursuant to section 147.211(f)(3); and

(C) Allowances designated by DEP for auction pursuant to section 147.210(c)(1)(B) and (c)(2)(B) and (c)(2)(C).

(2) When there are insufficient winning bids to exhaust the allowances from a consignment source in section 147.211(f)(1), the auction administrator will sell an equal proportion of allowances from each consigning entity in that source as follows:

(A) The auction administrator will calculate the number of allowances sold on behalf of each consigning entity by multiplying the consigning entity's share of the total consigned allowances by the number of consigned allowances sold, rounding the number down to the nearest whole number; and

(B) To distribute any remaining allowances, the auction administrator will assign a random number to each entity consigning allowances. Beginning with the lowest random

number, the auction administrator will assign one allowance to each entity until the remaining allowances have been assigned.

(3) Disposition of Allowances Designated by DEP for Auction Which Remain Unsold.

(A) Allowances designated by DEP pursuant to section 147.210(c)(1)(B) and (c)(2)(B) and (c)(2)(C) for an auction which remain unsold shall be kept in the Auction Holding Account for later auction or retired as provided herein.

(B) Allowances designated by DEP for auction which remain unsold will be re-designated for auction after two consecutive auctions have resulted in an auction settlement price above the Auction Reserve Price. If future vintage allowances remain unsold at the end of the calendar year for which they were designated for sale at Advance Auction, they will remain in the Auction Holding Account until their vintage year. They will then be designated for the Current Auction.

(C) The number of allowances re-designated to a subsequent Current or Advance Auction will not exceed 25 percent of allowances already designated by DEP for that auction. Allowances which remain unsold above that level will be held in the Auction Account for later auction.

(D) Allowances designated for Advance Auction which remain unsold until their vintage year equals the current calendar year will be designated for Current Auction pursuant to section 147.210(c)(1)(B).

(4) Disposition of Consigned Allowances Remaining Unsold at Auction. Allowances consigned to auction pursuant to section 147.221(g)(3) that remain unsold at auction will be held in the Auction Holding Account and offered for sale at each auction until sold, transferred to the Allowance Price Containment Reserve (Reserve) or retired.

(g) Transfer of Unsold Allowances to the Allowance Price Containment Reserve or retirement. Current vintage allowances designated by DEP for auction pursuant to section 147.211(f)(3) that remain unsold in the Auction Holding Account for more than 24 months will be transferred to the Reserve or retired. At least fifty percent (50%) of allowances that remain unsold after the expiration of their vintage year shall be permanently retired. The remainder

shall be transferred to the Reserve. The number of allowances in the Reserve shall be limited to 25% of the annual allowance budget for the Pennsylvania GHG Cap-and-Trade program and shall decrease as that budget decreases. Any excess allowances in the Reserve or unsold allowances exceeding the limits in the Reserve shall be permanently retired. Current vintage allowances designated by DEP pursuant to this section do not include allowances consigned to auction pursuant to section 147.210(d).

(h) The auction bidding window may be delayed, rescheduled, or cancelled due to technical systems failures.

(1) The opening of the auction bidding window may be delayed or paused for no more than one hour by the Secretary due to technical systems failures.

(2) The bidding window may be rescheduled by the Secretary due to technical systems failures.

(3) Rescheduled Auctions.

(A) The auction bidding window must be rescheduled to ensure the financial services administrator can use any bid guarantees submitted pursuant to section 147.212 prior to the expiration date required by section 147.212.

(B) No additional auction applications may be accepted.

(C) The financial services administrator will keep all bid guarantees to complete financial settlement of the auction after the rescheduled bidding window.

(D) No bid guarantees provided pursuant to section 147.212 may be amended.

(E) If technical systems failures cannot be resolved and a bidding window cannot be rescheduled to meet the requirements of this section, then the Secretary will cancel the auction bidding window.

§ 147.212. Auction Administration and Participant Application.

(a) Administration of the Auctions.

(1) The Secretary or a designated DEP Deputy Secretary may serve as Auction Administrator or the Secretary may designate an entity to serve as Auction Administrator.

(2) The Secretary or a designated DEP Deputy Secretary may serve as financial services administrator or the Secretary may designate a qualified financial services administrator to conduct all financial transactions required by this article.

(b) Other Jurisdictions.

(1) The Department may direct that the Pennsylvania GHG allowances designated for auction be offered through an auction conducted jointly with other jurisdictions to which Pennsylvania links pursuant to subchapter 12, provided the joint auction conforms to this article.

(2) Where the Department has approved a municipal program for the Pa GHG cap-and-trade program pursuant to 25 Pa. Code Chapter 133, that program may administer its own program for allowances attributable to that program or the local program may elect to have the Auction Administrator administer an auction of the allowances attributable to that program and distribute the auction revenues to the municipality or as otherwise provided under the approved municipal program.

(c) Auction Notification. At least 60 days prior to each auction, the Auction administrator shall publish the following information:

- (1) The date and time of the auction;
- (2) Auction application requirements and instructions;
- (3) The form and manner for submitting bids;
- (4) The procedures for conducting the auction;
- (5) The administrative requirements for participation; and
- (6) The number of allowances from Pennsylvania that will be available at the auction.

(7) For the announcement of the first quarter auction, the number of allowances to be available for sale during the calendar year and the Auction Reserve Price in effect for the calendar year pursuant to section 147.211(c).

(8) If Pennsylvania has linked to a jurisdiction operating an External GHG ETS pursuant to subchapter 12, the number of allowances in section 147.212(c)(6) will also include

the allowances made available by the linked jurisdiction, if any, as well as any allowances made available by approved municipal Pa GHG cap-and-trade programs.

(d) Auction Participation Application Requirements.

(1) The Department must approve an entity's auction participant application before that entity may participate in an auction.

(2) An entity applying for approval as an auction participant must be registered into the Cap-and-Trade Program as provided in section 147.130.

(3) An entity whose holding account has been revoked or is currently suspended pursuant to section 147.311 cannot participate in an auction. An individual associated pursuant to section 147.130, 147.132, and 147.133 with an entity whose holding account has been revoked or is currently suspended pursuant to section 147.311 cannot participate in an auction.

(4) An entity will be required to complete an auction participant application at least 30 days prior to an auction in which it intends to participate. The entity must provide information and documentation including:

(A) Information and documentation regarding the corporate identity, ownership, and capital structure of the applicant;

(B) The existence of any direct or indirect corporate associations pursuant to sections 147.133 and 147.214(d);

(C) An allocation of the purchase limit among associated entities as defined in section 147.133, or a change in the existing allocation of the purchase limit among associated entities, if applicable;

(D) An allocation of the holding limit among associated entities as defined in section 147.133, or a change in the existing allocation of the holding limit among associated entities, if applicable; and

(E) An attestation disclosing the existence and status of any ongoing investigation or an investigation that has occurred within the last ten years with respect to any alleged violation of any rule, regulation, or law associated with any commodity, securities, environmental, or financial market for the entity participating in the auction, and all other entities with whom the

entity has a direct corporate association pursuant to section 147.133 that participate in a GHG, carbon, fuel, or electricity market. The attestation must be updated to reflect any change in the status of an investigation that has occurred since the most recent auction application attestation was submitted.

(5) An entity with any changes to the auction application information listed in subsection 147.212(d)(4) within 30 days prior to an auction may be denied participation in the auction. For the purposes of changes to indirect and direct corporate associations, this section only applies to those corporate associates with entities registered in the tracking system.

(6) Prior to participating in an auction, any primary or alternate account representative that will be submitting bids on behalf of entities eligible to participate in an auction must have already:

(A) Complied with the Know-Your-Customer requirements of section 147.134; and

(B) Submitted the additional information required by the financial services administrator contained in Appendix A of this subchapter.

(e) Maintenance and Modification of Auction Participation Approval.

(1) Once the Department has approved an entity's auction participant application, the entity need not complete another application for subsequent auctions unless there is a material change to the information contained in the approved application pursuant to section 147.212(d)(4) there is a material change in the entity's Cap-and-Trade Program registration pursuant to section 147.130, or the Department has made a determination restricting an entity's auction participation pursuant to section 147.214.

(2) An entity approved for auction participation must inform the Auction Administrator at least 30 days prior to an auction when reporting a change to the information disclosed, otherwise the entity may not participate in that auction. The change should be reported by 5 p.m. Eastern Standard Time (or Eastern Daylight Time, when in effect) on the 30th day before an auction.

(f) Auction Intent to Bid Notification Requirements. An entity that intends to participate in an auction must inform the Auction Administrator at least 30 days prior to an auction of its intent to bid in an auction, otherwise the entity may not participate in that auction.

(g) An entity approved for auction participation may not communicate information on auction participation with any entity that is not part of an association disclosed pursuant to section 147.214, except as requested by the Auction Administrator to remediate an auction application.

(h) Protection of Confidential Information. To the extent permitted by state law, the Department, the Auction Administrator, and the financial services administrator will treat the information contained in the auction application and not listed for release pursuant to section 147.212(k)(5) as confidential business information.

(i) All bids will be considered binding offers for the purchase of allowances under the rules of the auction.

(j) Auction participants must provide a bid guarantee to the financial services administrator at least 12 days prior to the auction.

(1) The bid guarantee must be in one or a combination of the following forms:

(A) Cash in the form of a wire transfer; or

(B) An irrevocable letter of credit; or

(C) A bond.

(D) All forms of bid guarantee must be in a form that may be accepted by the financial services administrator consistent with U.S. banking laws and bank practices.

(2) The bid guarantee submitted by any entity registered with Pennsylvania will be in U.S. dollars.

(3) A bid guarantee submitted in any form other than cash must be payable within three business days of payment request.

(4) The bid guarantee will be in the currency used by the jurisdiction with which the entity has registered.

(5) The amount of the bid guarantee must be greater than or equal to the maximum value of the bids to be submitted.

(A) The value of a set of bids equals the cumulative quantity of bids submitted at or above a price times that price. The value of the set of bids is calculated at each price at which the bidder will submit a bid.

(B) The maximum value of a set of bids is the highest value of a set of bids calculated at each price at which the bidder will submit a bid.

(C) The auction participant submits a single bid guarantee to cover bids in both the Current and Advance Auctions and the amount of the single bid guarantee must be greater than or equal to the combined maximum value of the Current and Advance Auction bids to be submitted.

(6) The bid guarantee will be made payable to the financial services administrator.

(7) The bid guarantee will expire no sooner than 26 days after the auction date.

(8) The financial services administrator will evaluate the bid guarantee and inform the auction administrator of the value of the bid guarantee once it is found to conform to this section and is accepted by the Department.

(9) If an entity has submitted more than one form of bid guarantee then the financial services administrator will apply the instruments to the unpaid balance in the order the instruments are listed in section 147.212(j)(1).

(10) The auction administrator will apply the value of the bid guarantee to the Current Auction first when accepting bids pursuant to section 147.211(e)(3). The remaining value of the bid guarantee will be used to determine acceptance of bids into the Advance Auction.

(k) After the Auction Administrator has notified the Department of the results of the auction the Department will:

(1) Review the conduct of the auction by the Auction Administrator, then certify whether the auction met the requirements of this article;

(2) After certification, direct the auction administrator to notify each winning bidder of the auction settlement price, the number of allowances that the bidder purchased, the bidder's total purchase cost, and the deadline and method for submitting payment.

(3) After certification, direct the financial services administrator to:

(A) Collect cash payments from winning bidders within seven days of notifying them of the auction results;

(B) Use the bid guarantee to cover payment for allowance purchases by any entity that fails to make cash payment within seven days after bidders are notified of results and place the proceeds into the Pennsylvania Treasury, such other fund as the General Assembly may hereafter designate consistent with its duty as a trustee under Article I, §27 of the Pennsylvania Constitution, or the accounts designated by a municipalities with delegated programs;

(C) Deposit auction proceeds from sales of DEP allowances sold at auction into the Pennsylvania Treasury, such other fund as the General Assembly may hereafter designate consistent with its duty as a trustee under Article I, §27 of the Pennsylvania Constitution, or the accounts designated by municipalities with delegated programs;

(D) Distribute auction proceeds to entities that consigned allowances for auction pursuant to section 147.210(d) ;

(E) Return any unused cash bid guarantee; and

(F) Return any bid guarantee form other than cash after receipt of payment for allowances awarded.

(G) A bid guarantee in a form other than cash may be held by the financial services administrator for multiple auctions or reserve sales upon agreement by the financial services administrator and bidder.

(4) Upon determining that the payment for allowances has been deposited into the Treasury, or transferred to entities or local governments with approved programs that consigned allowances, transfer the allowances purchased into each winning bidder's Holding Account, or to its Compliance Account if needed to comply with the holding limit;

(5) Inform each approved external GHG emissions trading system and the associated tracking system of the serial numbers of allowances purchased at auction; and

(6) Following the auction, the Department will publish at www._____ the following information:

(A) The names of the bidders;

(B) Auction settlement price; and

(C) Aggregated or distributional information on purchases with the names of the entities withheld.

§ 147.213. Sale of Allowances from the Allowance Price Containment Reserve.

(a) The Secretary or a Deputy Secretary may serve as reserve sale administrator to conduct sales from the Allowance Price Containment Reserve (Reserve) or designate an entity to serve as reserve sale administrator. The financial services administrator designated by the Secretary pursuant to section 147.212(a) will conduct the financial transactions required to operate sales from the Reserve.

(b) Entities registered in an External GHG ETS to which Pennsylvania has linked pursuant to subchapter 12 are not eligible to purchase from the Pennsylvania Reserve.

(c) Only entities registered into the Pennsylvania GHG Cap-and-Trade Program as provided in sections 147.111 or 147.113 shall be eligible to purchase allowances from the Reserve. Prior to participating in a Reserve sale, any primary or alternate account representative that will be submitting bids on behalf of entities eligible to participate in Reserve sales must have already submitted any additional information required by the financial services administrator.

(d) Timing of Reserve Sales.

(1) Reserve sales shall be conducted pursuant to the schedule in Appendix C.

(A) Except for the Reserve sale immediately preceding the compliance obligation instrument surrender deadline on November 1, a Reserve sale will only be offered if the Current Auction held in the preceding quarter results in an auction settlement price greater than or equal to 60% of the Reserve Sale Price.

(B) The Reserve sale immediately preceding the compliance obligation instrument surrender on November 1 of each year will always be offered.

(C) A Reserve sale will be conducted only if at least one entity that intends to participate in the Reserve sale informs the Reserve Sale Administrator at least 20 days prior to the scheduled Reserve sale and submits a bid guarantee to the financial services administrator at least 12 days before the scheduled Reserve sale.

(2) For any Reserve sale that will be offered, the Reserve sale administrator shall provide all eligible participants with notice of the number of allowances available for sale and the terms of the sale at least 30 days prior to the sale.

(e) Reserve Sale Intent to Bid Notification Requirements. An entity that intends to participate in a reserve sale must inform the Reserve Sale Administrator at least 20 days prior to a reserve sale of its intent to bid in that reserve sale, otherwise the entity may not participate in that reserve sale.

(f) Operation of the Reserve.

(1) Determination of the Reserve Sale Price.

(A) Beginning in 2021, each year DEP will set a U.S. dollar Base Reserve Sale Price equal to the annual auction reserve price determined for that year pursuant to section 147.211(c)(3)(A), plus a fixed dollar amount. In 2021 the fixed dollar amount will equal the difference between the highest Reserve tier price for the California cap-and-trade program determined in 2020 and the Annual Auction Reserve Price for the California program determined in 2020, increased by the rate of inflation for 2020 as measured by the most recently available twelve months of the Consumer Price Index for all Urban Consumers. In each subsequent year the fixed dollar amount will be the previous year's fixed dollar amount adjusted for the rate of inflation as measured by the most recently available twelve months of the Consumer Price Index for all Urban Consumers.

(B) The Reserve Sale Price used each year will be the larger of the U.S. dollar Base Reserve Sale Price as provided in subsection (A) and the highest Reserve Sale Price (converted into U.S. dollars) in any ETS trading system to with the Pennsylvania cap-and-trade program is linked.

(2) This provision only applies to the Reserve sale immediately preceding the compliance obligation instrument surrender deadline on November 1. Pursuant to sections 147.170(i)(1) and 147.171(h)(1), allowances will be made available at the Reserve Sale Price if the amount of accepted bids exceeds the number of allowances available in the Reserve.

(A) If the quantity of allowances from sections 147.170(a) and 147.171(a) is equal to or greater than the quantity of accepted bids then all accepted bids will be filled.

(B) If the quantity of accepted bids exceeds the allowances from sections 147.170(a) and 147.171(a) allowances in the Reserve through the procedure outlined in this section.

(C) The accepted bids will be filled first with allowances from sections 147.170(a) and 147.171(a) if available.

(3) The allowances in the Reserve will be sold until all accepted bids are filled or until all the allowances in the Reserve have been sold.

(4) Allowances sold pursuant to this section are immediately eligible to satisfy any compliance obligation, regardless of the vintage of the allowance.

(g) At least 12 days before the scheduled sale, an entity intending to participate in a Reserve sale must submit to the financial services administrator a bid guarantee, payable to the financial services administrator, in an amount greater than or equal to the sum of the maximum value of the bids to be submitted by the entity.

(1) The maximum value of a set of bids is the quantity bid times the Reserve Sale Price.

(2) The bid guarantee must be in one or a combination of the following forms:

(A) Cash in the form of a wire transfer; or

(B) An irrevocable letter of credit; or

(C) A bond.

(D) All forms of bid guarantee must be in a form that may be accepted by the financial services administrator consistent with U.S. banking laws and bank practices.

(3) A bid guarantee submitted in any form other than cash must be payable within three business days of payment request.

(4) The bid guarantee will be made payable to the financial services administrator.

(5) The bid guarantee will expire no sooner than 26 days after the Reserve sale.

(6) The financial services administrator will evaluate the bid guarantee and inform the Reserve sale administrator of the value of the bid guarantee once it is found to conform to this section and is accepted by the Secretary.

(7) The Department may revise the timing of reserve sales intent to bid notification requirements and bid guarantee submittal requirements to ensure a minimum of four business days is available between the intent to bid notification and bid guarantee submittal due dates.

(h) Sale Operations.

(1) The Reserve sales window will open at 10 a.m. Eastern Standard Time (or Eastern Daylight Time, when in effect) on the day of the sale, and bids may be submitted until the window closes at 1 p.m. Eastern Standard Time (or Eastern Daylight Time, when in effect).

(A) Each bid will consist of a quantity of allowances in multiples of 1,000 allowances.

(B) An entity may submit multiple bids.

(2) The reserve sale administrator will only accept a bid for a bundle of 1,000 allowances:

(A) If acceptance of the bid would not result in violation of the holding limit pursuant to section 147.220(b); or

(B) If acceptance of the bid would not result in a total value of accepted bids for an entity greater than the value of the bid guarantee submitted by the entity pursuant to section 147.213(g).

(3) Filling Accepted Bids.

(A) For a Reserve sale not occurring immediately preceding the compliance instrument surrender on November 1, the Reserve sale will continue until either all allowances are sold from the Reserve or all the accepted bids are filled.

(B) If the sum of bids accepted by the Reserve Sale Administrator is greater than the number of allowances in the Reserve, the Reserve Sale Administrator will calculate the number of allowances distributed to each bidding entity by multiplying the bidding entity's share of the total number of accepted bids by the number of allowances in the Reserve, rounding the number to the nearest whole number. To distribute any remaining allowances, the Reserve Sale Administrator will assign a random number to each entity bidding in the Reserve sale. Beginning with the lowest random number, the Reserve Sale Administrator will assign one allowance to the last bundle purchased by each entity until the remaining allowances have been assigned.

(i) Resolution of Sales.

(1) After reviewing the conduct of the sale by the Reserve sale administrator, the Department will certify whether the Reserve sale met the requirements of this article.

(2) After certification of the sale results, the Department will direct the reserve sale administrator to notify Reserve sale participants of their purchases and total purchase cost.

(3) After certification of the sale results, the Department will direct the financial services administrator to:

(A) Process cash payments from participants and deposit proceeds into the Treasury up to seven days after bidders are notified of results;

(B) Use the bid guarantee to cover payment for allowance purchases by any entity that fails to make payment within seven days after bidders are notified of results and place the proceeds into the Treasury;

(C) Return any unused cash bid guarantee; and

(D) Return any bid guarantee in a form other than cash after receipt of payment for allowances awarded.

(E) A bid guarantee in a form other than cash may be held by the financial services administrator for multiple auctions or reserve sales upon agreement by the financial services administrator and bidder.

(4) Upon determining that the financial services administrator has deposited the payment for allowances into the Treasury, the Department shall transfer the allowances purchased from the Allowance Price Containment Reserve sale into each winning bidder's compliance account.

(5) The Department shall inform each approved external GHG emissions trading system and the associated tracking system of the serial numbers of allowances sold; and

(6) The Department shall publish the sale results at www._____.

(j) Entities registered in an External GHG ETS to which Pennsylvania has linked pursuant to subchapter 12 are not eligible to purchase from the Reserve.

§ 147.214. Auction Participation and Limitations.

(a) The Department may cancel or restrict a previously approved auction participation application or reject a new application if the Department determines that an entity has:

(1) Provided false or misleading facts;

(2) Withheld material information from its application or account application information listed in section 147.130, with material meaning information that could influence a decision by the Department;

(3) Violated any part of the auction rules pursuant to subchapter 10;

(4) Violated the registration requirements pursuant to subchapter 5; or

(5) Violated the rules governing trading pursuant to subchapter 11.

(b) If the Department determines an entity has committed any of the violations listed in section 147.214(a), then:

(1) The Department may instruct the Auction Administrator to cancel a previously approved auction application or to not accept auction applications from the entity;

(2) The Department may instruct the Auction Administrator to restrict the auction application approval for any corporate associate of the entity to prevent the purchase of allowances at auction for subsequent transfer to the violator;

(3) Any cancellation or restriction imposed by the Department may be permanent or for a specified number of auctions; and

(4) The cancellation or restriction imposed by the Department shall be in addition to any other penalties, fines, and additional remedies available at law.

(c) Disclosure of Auction Participation Information.

(1) Except as provided in section 147.214(c)(2), all entities registered into the Cap-and-Trade Program pursuant to section 147.130, their direct and indirect corporate associations, and consultants and advisors as identified in section 147.223 shall not release any of the following information regarding auction participation or reserve sale participation, as applicable:

- (A) Intent to participate, or not participate, at auction, and auction approval status;
- (B) Bidding strategy at any auctions, including the specification of an auction settlement price or range of potential auction settlement prices at which an entity is willing to buy or sell allowances;
- (C) Bid price or bid quantity information at past or future auctions; and
- (D) Information on the amount of any bid guarantee provided to the financial services administrator.

(2) Auction participation information listed in section 147.214(c)(1) may be released under the following conditions:

(A) When the release is to other members of a direct corporate association not subject to auction participation restriction or cancellation pursuant to section 147.214(b),

(B) When the release is to a Cap-and-Trade Consultant or Advisor who has been disclosed to the Department pursuant to section 147.214(c)(3).

(C) When the release is made by a publicly-owned utility only as required by public accountability rules, statute, or rules governing publicly-owned utilities.

(D) When the release is to an agency that has regulatory jurisdiction over privately owned utilities in the Commonwealth of Pennsylvania of information regarding compliance instrument cost and acquisition strategy and other disclosures specifically required or authorized by the regulatory agency pursuant to any of its applicable rules, orders, or decisions. In the event of a disclosure pursuant to this section, and upon the request of the Secretary, the entity must provide within 10 business days the statutory or regulatory reference or the general order, decision, or ruling to DEP that requires the disclosure of the specific information related to bidding strategy.

(E) When the release is to PJM, subject to PJM's requirements regarding confidential business information.

(3) If an entity participating in an auction has retained the services of a Cap-and-Trade Consultant or Advisor, as defined in section 147.223, regarding auction bidding strategy, then:

(A) The entity must ensure against the Consultant or Advisor transferring the entity's information to other auction participants or coordinating the bidding strategy among participants;

(B) The entity will inform the Consultant or Advisor of the prohibition of sharing information to other auction participants and ensure the Consultant or Advisor has read and acknowledged the prohibition under penalty of perjury;

(C) The Consultant or Advisor must provide the Secretary the following information:

1. Names of the entities participating in the Cap-and-Trade Program that are being advised;
2. Description of advisory services being performed; and
3. Assurance under penalty of perjury that advisor is not transferring to or otherwise sharing information with other auction participants.

(D) The information must be received by the Secretary at least 15 days prior to an auction.

Subchapter 11: Trading and Banking

§ 147.220. Trading.

(a) The holding limit is the maximum number of Pennsylvania GHG allowances that may be held by an entity or jointly held by a group of entities with a direct corporate association, as defined in section 147.133 at any point in time.

(b) Application of the Holding Limit.

(1) The holding limit will apply to each entity registered as a covered, opt-in covered, or voluntarily associated entity pursuant to section 147.130.

(2) The holding limit calculation will not include allowances contained in exchange clearing holding accounts created pursuant to section 147.131.

(3) The holding limit calculation will not include allowances contained in Annual Allocation Holding Accounts.

(4) If the Department determines that a reported transfer request not yet recorded into the tracking system would result in an entity's holdings exceeding the applicable holding limit, then the Department shall not approve the transfer request pursuant to section 147.221(a)(1).

(5) If an entity is in compliance with the current vintage holding limit on December 31 of any year and the reclassification of future vintage allowances as current vintage allowances pursuant to section 147.220(c)(1)(C) causes it to exceed the holding limit on January 1 of the next compliance year, then:

(A) The accounts administrator will inform the entity; and

(B) The entity will have five business days to bring its account balances within the holding limit. After that, the Secretary may transfer allowances in excess of the holding limit to the Auction Holding Account for consignment to auction pursuant to section 147.210(d)(2).

(C) Allowances transferred to the Auction Holding Account for consignment will be drawn first from the entity's Holding Account and, if necessary, from the entity's Compliance Account. The order for removing allowances for consignment will be the opposite of the retirement order in section 147.156(h)(1).

(6) Penalties for Holding Limit Violations.

(A) For an entity that is out of compliance with the holding limit only as a result of the circumstances described in section 147.220(b)(5), penalties may be applied if the entity fails to bring its account balances under the holding limit within the five business day period allowed pursuant to section 147.220(b)(5)(B). Otherwise, penalties may be applied whenever the holding limit is exceeded.

(B) Penalties may be applied if the violation of the holding limit is not discovered until after a transfer that would exceed the holding limit is registered into the tracking system.

(c) The holding limit will be separately calculated to holdings of:

(1) Current Vintage Allowances. This category of allowances consists of:

(A) Allowances with a vintage year corresponding to the current or previous calendar years;

(B) Allowances from any vintage purchased from the Allowance Price Containment Reserve pursuant to section 147.213;

(C) Allowances originally purchased at the Advance Auction but of a vintage year equal or prior to the current calendar year; and

(D) Allowances issued by a GHG ETS program approved by DEP pursuant to section 147.241 that have no vintage;

(2) Future Vintage Allowances. This category of allowances consists of:

(A) Allowances that were purchased at the Advance Auction and still have a vintage year greater than the current calendar year; and

(B) Allowances with a vintage year greater than the current calendar year that were obtained through true-up allocation.

(d) The holding limit will be calculated for allowances qualifying pursuant to section 147.220(c)(1) as the sum of:

(1) The number given by the following formula:

$$\text{Holding Limit} = 0.1 \times \text{Base} + 0.025 \times (\text{Annual Allowance Budget} - \text{Base})$$

In which:

“Base” equals 25 million metric tons of CO₂e.

“Annual Allowance Budget” is the number of allowances issued for the current budget year.

(2) Limited Exemption from the Holding Limit.

(A) The limited exemption from the holding limit (limited exemption) is the maximum number of allowances that will not be included in the holding limit calculated pursuant to section 147.220(c)(1). To qualify for inclusion within the limited exemption, allowances must be placed in the entity’s Compliance Account. The limited exemption is available to covered entities and opt-in covered entities but not to voluntarily associated entities.

(B) Calculation of the limited exemption. The limited exemption for an entity that registers as a covered entity or opt-in covered entity after the effective date of this Chapter will be calculated as twice the annual emissions contained in the emissions report for the first year that the entity has a compliance obligation, provided that the emissions data report has received a positive or qualified positive emissions data verification statement for emissions that generate a compliance obligation pursuant to section 147.151.

(C) The limited exemption will be increased on November 2 of each year by the amount of emissions that generate a compliance obligation pursuant to section 147.151 that are included in the emissions data report received that year that have received a positive or qualified positive emissions data verification statement.

(D) If DEP has assigned emissions to an entity, for any year, in the absence of a positive or qualified positive emissions data verification statement, the limited exemption will be calculated using the assigned emissions. If the emission reports scheduled to be used to increase the limited exemption are not available at the time of a scheduled increase and DEP has not assigned emissions to the entity, the limited exemption will be increased by the amount of the most recently received report that has received a positive or qualified positive emissions data verification statement. If this procedure is used, the limited exemption will not be adjusted using data in the reports scheduled to be received that year until the next scheduled change in the limited exemption.

(E) After DEP has evaluated an entity's surrender of compliance instruments pursuant to section 147.156, an entity's limited exemption will be reduced to reflect any emissions obligation due during that calendar year. Following an annual surrender deadline, the limited exemption will be reduced by the amount of the annual surrender obligation due that calendar year. Following a compliance period surrender deadline, the limited exemption is reduced, starting with the oldest emissions report used to calculate the limited exemption, by the amount of emissions contained in the number of years for which a compliance obligation was due that calendar year, including emissions carried over from a previous compliance period pursuant to section 147.153(d), but not including any emissions already removed from the limited exemption following an annual surrender deadline.

(3) Petition to Adjust the Limited Exemption.

(A) Prior to October 1 of any year, a covered entity may submit to the Department evidence demonstrating an increase in emissions for that year over the previous year and request a temporary increase in the limited exemption until verified data for that year are available.

(B) The amount of the increase must be at least 250,000 metric tons CO₂e on an annualized basis.

(C) The Department will review the evidence and determine whether an adjustment is needed.

(D) If an adjustment is granted, then the limited exemption for that covered entity will be increased immediately by the amount determined by the Department.

(E) When the verified emissions data are received for the year for which an adjustment was granted, the Department will use the verified emissions value when calculating the limited exemption.

(e) The holding limit will be calculated separately for each vintage year for allowances qualifying pursuant to section 147.220(c)(2) as the number given by the following formula:

$$\text{Holding Limit} = 0.1 \times \text{Base} + 0.025 \times (\text{Annual Allowance Budget} - \text{Base})$$

In which:

“Base” equals 25 million metric tons of CO₂e.

“Annual Allowance Budget” is the number of Pennsylvania GHG allowances issued for a budget year.

(f) Application of Corporate Association Provisions to the Holding Limit.

(1) The total number of allowances held by a group of entities with a direct corporate association pursuant to section 147.133 must sum to less than or equal to the holding limits pursuant to sections 147.220(d) and (e).

(2) Calculation of the Limited Exemption for a Direct Corporate Association.

(A) An entity with a direct corporate association that is not part of a consolidated account will calculate its limited exemption as described in section 147.220(d).

(B) The limited exemption for a consolidated account is the sum of the limited exemption calculation for the entities consolidated into the account.

(3) Entities that are part of a direct corporate association that choose to opt out of account consolidation pursuant to sections 147.130(c)(1)(I) or 147.135(a) or (b) must allocate shares of the holding limit among themselves. This holding limit allocation results in each entity having a specified percentage share of the group’s holding limit. The sum of the percentage shares allocated among the entities must sum to one hundred percent.

(A) The primary account representatives or alternate account representatives of each of the associated entities must inform the accounts administrator of the allocation of the holding limit when registering pursuant to section 147.133.

(B) The holding limit allocation will remain in effect until the primary account representatives or alternate account representatives of each of the associated entities informs the accounts administrator of subsequent changes to the allocation of the holding limit.

(g) The holding limit in section 147.220(a) shall include holdings of any allowances issued by a jurisdiction operating an External GHG ETS to which Pennsylvania has linked pursuant to subchapter 12.

(h) The “Annual Allowance Budget” in section 147.220(d) is calculated as the sum for the current budget year of the annual compliance budgets of Pennsylvania and all External

GHG ETS programs to which Pennsylvania has linked pursuant to subchapter 12. The “Annual Allowance Budget” in section 147.220(e) is calculated as the sum for a budget year of the annual compliance budgets of Pennsylvania and all External GHG ETS programs to which Pennsylvania has linked pursuant to subchapter 12.

§ 147.221. Conduct of Trade.

(a) Transfers of Compliance Instruments Between Accounts.

(1) Except when a transfer is undertaken by the Department, the accounts administrator will not register a transfer of compliance instruments between accounts into the tracking system until the administrator receives a transfer request that the Department has determined meets the requirements of this article.

(A) To initiate the process, the primary account representative or an alternate account representative of the source account for the transfer must submit a transfer request to the accounts administrator.

(B) The primary account representative or another alternate account representative for the same entity must confirm the transfer request to the accounts administrator within two days of the initial submission of the transfer request.

(C) The primary account representative or an alternate account representative for the destination account must confirm the transfer request to the accounts administrator within the time remaining in the three days following the initial submission of the transfer request in section 147.221(a)(1)(A).

(D) The Department must determine whether the transfer request and the transaction for which the transfer request was submitted meet the requirements of this chapter based on the information available at the time of approval.

(2) The following transfers do not require confirmation by an account representative of the destination account pursuant to section 147.221(a)(1)(C).

(A) Transfers initiated by the Department.

(B) Transfers between a single entity’s holding and compliance accounts.

(3) The parties to a transfer will be in violation and penalties may apply if the above process is completed:

(A) More than three days after the initial submission of the transfer request; or

(B) More than three days after the expected termination date of the transaction agreement for which the transfer request is submitted.

(4) Except for transfers between direct corporate associates disclosed pursuant to section 147.133, an entity may not submit a transfer request to another registered entity without an existing written or recorded oral transaction agreement between the registered entities authorizing a transfer.

(b) Information Requirements for Transfer Requests. The following information must be reported to the accounts administrator as part of a transfer request before any transfer of allowances can be recorded on the tracking system:

(1) The following information must be entered into the tracking system for all transfer requests:

(A) Holding account number of the source account and identification of two individuals who are the primary account representative and/or alternate account representatives initiating the transfer request.

(B) Account number of destination account.

(C) Type, quantity, and vintage of compliance instrument.

(2) The transfer request must identify the type of transaction agreement for which the transfer request is being submitted, selecting one of the following three types:

(A) Over-the-counter agreement for the sale of compliance instruments for which delivery will take place no more than three days from the date the parties enter into the transaction agreement.

(B) Over-the counter agreement for the sale of compliance instruments for which delivery is to take place more than three days from the date the parties enter into the transaction agreement or that involve multiple transfers of compliance instruments over time or the bundled sale of compliance instruments with other products.

(C) Exchange agreements for the sale of compliance instruments through any contract arranged through an exchange or Board of Trade.

(3) A transfer request submitted for an over-the-counter agreement for the sale of compliance instruments for which delivery will take place no more than three days from the date the parties enter into the transaction agreement must provide the following information:

(A) Date the entity entered into the transaction agreement.

(B) Expected Termination Date of the transaction agreement. If completion of the transfer request process is the last term of the transaction agreement to be completed, the date the transfer request is submitted should be entered as the Expected Termination Date. If there are financial, contingency, or other terms to be settled after the transfer request is completed, the date those terms are expected to be settled should be entered as the Expected Termination Date. If the transaction agreement does not specify a date for the settlement of financial, contingency, or other terms that would be completed after the transfer request is completed, the entity may enter the Expected Termination Date as “Not Specified”.

(C) Price of the compliance instrument in U.S. dollars or Canadian dollars.

(4) A transfer request submitted for an over-the-counter agreement for the sale of compliance instruments for which delivery is to take place more than three days from the date the parties enter into the transaction agreement or that involves multiple transfers of compliance instruments over time or incorporates compliance instrument requirements with other product sales or purchases, must provide the following information:

(A) Date the entity entered into the transaction agreement.

(B) Expected Termination Date of the transaction agreement. If completion of the transfer request process is the last term of the transaction agreement to be completed, the date the transfer request is submitted should be entered as the Expected Termination Date. If there are financial, contingency, or other terms to be settled after the transfer request is completed, the date those terms are expected to be settled should be entered as the Expected Termination Date. If the transaction agreement does not specify a date for the settlement of financial, contingency, or other terms that would be completed after the transfer request is completed, the entity may enter the Expected Termination Date as “Not Specified”.

(C) Whether the transaction agreement provides for further compliance instrument transfers after the current transfer request is completed.

(D) Whether the transaction agreement provides for transfers of other products.

(E) If the transaction agreement specifies a fixed price for the compliance instruments, provide the price in U.S. dollars or Canadian dollars.

(F) If the transaction agreement sets the price as a cost base plus a margin, then provide the cost base and the margin.

(G) If the transaction agreement does not determine the price using one of the above formats, provide a brief description of the pricing method as well as the price resulting from the pricing method for the specific transfer.

(5) A transfer request submitted for an Exchange Agreement must provide the following information:

(A) Identify the exchange where the transaction is conducted.

(B) Identify the contract description code assigned by the exchange to the contract.

(C) Date of close of trading for the contract.

(D) Price at close of trading for the contract.

(6) If the transaction agreements do not contain a price for compliance instruments, entities may enter a price of zero into the transfer request if the transfer request is submitted to fulfill one of the following transaction agreement types and the entity discloses the agreement type in the transfer request.

(A) The proposed transfer is between entities with a direct corporate association.

(B) The proposed transfer is from an entity's holding account to its compliance account.

(C) The proposed transfer results from a transaction agreement that incorporates compliance instrument requirements with other product sales or purchases, and specifies a total cost or cost basis for the transaction but does not specify a price or cost basis for the sale of the compliance instruments alone.

(D) The proposed transfer is from an electricity user to an entity operating a generation facility from which the utility obtains electricity pursuant to a long term power purchase agreement.

(E) The proposed transfer is to satisfy a transaction agreement that requires the production of a new DEP-issued offset credit and the transaction agreement does not specify a price for the DEP-issued offset credit.

(c) Parties to the transfer request agree to provide documentation about the transaction agreement for which the transfer request was submitted within five days of a request of the Department.

(1) The request for documentation may include the transaction agreement and related transaction confirmations that resulted in the transfer and must be sufficient to verify the information entered by the account representative into the fields required for the transfer request.

(2) The Department will treat the documentation as confidential business information to the extent permitted by law.

(d) Transfers Involving Exchange Clearing Holding Accounts.

(1) A request to transfer compliance instruments to an exchange clearing holding account will list the exchange clearing holding account as the destination account.

(2) All of the compliance instruments received by an exchange clearing holding account must be transferred to one or more destination accounts within five days of receiving them.

(3) A request to transfer compliance instruments to or from an exchange clearing holding account does not require confirmation by an account representative of the destination account pursuant to section 147.221(a)(1)(C).

(4) The entity receiving a transfer from an exchange clearing holding account is solely responsible for violations of the holding limit. If a transfer from an exchange clearing holding account results in a violation of the holding limit, then the Department will prevent the receiving entity from transferring allowances to another entity until the Department has investigated and determined the cause of the violation. The accounts administrator will allow the entity to transfer allowances to its compliance account if the entity can accommodate them

within its limited exemption. If the exchange clearing holding account cannot complete a transfer to a destination account, the operator of the exchange clearing holding account will notify DEP of the circumstances of the transfer within 3 calendar days of the failure to complete the transfer.

(e) Protection of Confidential Information. The Department will protect confidential information to the extent permitted by law by ensuring that the accounts administrator:

(1) Releases information on the transfer price and quantity of compliance instruments in a manner that is timely and maintains the confidentiality of the parties to a transfer;

(2) Except as needed for market oversight and investigation by the Department, protects as confidential all other information obtained through transfer requests;

(3) Protects as confidential the quantity and serial numbers of compliance instruments contained in individual entity holding accounts; and

(4) Releases information on the quantity of compliance instruments contained in compliance accounts in a timely manner that maintains the confidentiality of the identity of account holders.

(f) General Prohibitions on Trading.

(1) An entity may purchase and hold compliance instruments for later transfer to members of a direct corporate association. However, an entity cannot acquire allowances and hold them in its own holding account on behalf of another entity, including the following restrictions:

(A) An entity may not hold allowances in which a second entity has any ownership interest.

(B) An entity may not hold allowances pursuant to an agreement that gives a second entity control over the holding or planned disposition of allowances while the instruments reside in the first entity's accounts, or control over the acquisition of allowances by the first entity. Provisions specifying a date to deliver a specified quantity of compliance instruments, or specifying a procedure to determine a quantity of compliance instruments for delivery and/or a delivery date, do not violate the prohibition.

(2) A trade involving, related to, or associated with any of the following are prohibited:

(A) Any manipulative or deceptive device in violation of this chapter;

(B) A corner or an attempt to corner the market for a compliance instrument;

(C) Fraud, or an attempt to defraud any other entity;

(D) A false, misleading or inaccurate report concerning information or conditions that affects or tends to affect the price of a compliance instrument;

(E) An application, report, statement, or document required to be filed pursuant to this chapter which is false or misleading with respect to a material fact, or which omits to state a material fact necessary to make the contents therein not misleading; or

(F) Any trick, scheme, or artifice to falsify or conceal a material fact, including use of any false statements or representations, written or oral, or documents made by or provided to an entity on or through which transactions in compliance instruments occur, are settled, or are cleared.

(G) A fact is material if it could probably influence a decision by the Department.

(g) Restrictions on Registered Entities. If an entity registered pursuant to section 147.130 violates any provision specified in this article the Department may:

(1) Reduce the number of compliance instruments a covered entity or opt-in covered entity may have in its holding account below the amount allowed by the holding limit pursuant to section 147.220;

(2) Increase the annual surrender obligation for a covered entity or an opt-in covered entity to a percentage of its reported and verified or assigned emissions above the 30% obligation pursuant to section 147.155;

(3) Suspend or revoke the registration of opt-in covered entities, voluntarily associated entities, and other entities registered pursuant to section 147.130;

(A) A registered entity that has had its holding account revoked or suspended may not hold compliance instruments or register with the accounts administrator for another set of accounts in any capacity. If registration is revoked or suspended the entity must sell or

voluntarily retire all compliance instruments in its holding account within 30 days of revocation; and

(B) If registration is revoked or suspended and the entity fails to sell or voluntarily retire all compliance instruments in its holding account within 30 days of revocation, the accounts administrator will transfer the remaining instruments into the Auction Holding Account for sale at auction on behalf of the entity pursuant to section 147.210(d);

(4) Limit or prohibit transfers in or out of the holding account; or

(5) All of the above.

(h) Information Reporting by Holders of Exchange Clearing Holding Accounts.

(1) Holders of exchange clearing holding accounts must make the exchange's transaction records underlying the submission of a transfer request on CITSS available to the Department within 10 calendar days of the Department's request.

(2) Holders of exchange clearing holding accounts must retain transaction records containing the information listed in 147.221(b) for 10 years.

(3) Holders of exchange clearing holding accounts are not required to include the information listed in 147.221(b)(3), (4), and (6) in transfer requests to the accounts administrator.

(i) Transfer Request Deficiencies

(1) If the accounts administrator detects a deficiency in a transfer request before it is recorded into the tracking system:

(A) The accounts administrator will inform the entities submitting the request that the transfer request is deficient and inform the Department of the deficiency;

(B) The accounts administrator will inform the entity responsible for the deficiency of the specific problem to be remedied.

(C) The entities submitting the transfer request may resubmit the request with the deficiency corrected within the time limit set pursuant to sections 147.221(a)(1)(C), 147.221(a)(3), or 147.221(a)(4); and

(D) If the entities fail to submit an acceptable transfer request within the time limit, then they must either withdraw the transfer request or submit a new transfer request. Penalties may still apply pursuant to sections 147.221(a)(3) or (a)(4).

(2) If the accounts administrator detects a deficiency in a transfer request after it is recorded into the tracking system:

(A) The accounts administrator will inform the entities submitting the request that the transfer request is deficient and inform the Department of the deficiency;

(B) If the deficiency is based on the information submitted by the representative of the source account, the Department will inform the submitting representative of the specific deficiency;

(C) If the deficiency is a violation of the holding limit, the Department will inform the primary account representative for the account listed on the transfer request as the destination account of the deficiency; and

(D) If the entities that submitted the transfer request cannot correct the deficiency within five business days after notification by the accounts administrator, the Department may instruct the accounts administrator to reverse the transfer. The correction of the deficiency within five business days ensures the Secretary will not immediately reverse the transfer, but does not prevent the Department from applying penalties for the underlying violations.

§ 147.222. Banking, Expiration, and Voluntary Retirement.

(a) Allowances Issued for a Current or Previous Compliance Period. A PA GHG allowance or an allowance issued by an approved GHG ETS pursuant to subchapter 12 may be held (“banked”) by an entity registered pursuant to section 147.130.

(b) Allowances Issued for a Future Compliance Period. A PA GHG Allowance or an allowance approved pursuant to subchapter 12 issued from an allowance budget year within a future compliance period may be held by an entity registered pursuant to section 147.130.

(c) Expiration of Compliance Instruments. A Pennsylvania compliance instrument does not expire and is not retired in the tracking system until:

- (1) It is surrendered by a covered entity or opt-in covered entity and retired by the Secretary;
- (2) An entity voluntarily submits the instrument to the Secretary for retirement;
- (3) The instrument is retired by an approved external GHG emissions trading system to which the Cap-and-Trade Program is linked pursuant to subchapter 12; or
- (4) It is a compliance instrument that has not been sold at auction or otherwise distributed and is retired as otherwise provided in this chapter.

(d) Voluntary Retirement of Compliance Instruments.

(1) An entity registered pursuant to section 147.130 may voluntarily submit any compliance instrument for retirement.

(2) To voluntarily retire a compliance instrument, the registered entity submits a transfer request naming the DEP Retirement Account as the destination account.

(A) For the sole purpose of a voluntary transfer to the Retirement Account, a transfer request may be based on a transaction agreement with an unregistered entity as long as that entity is not registered into an external GHG program or ETS, regardless of whether the external GHG program or ETS has a Retirement-Only Agreement with DEP.

(B) An entity may not transfer more than 10,000 allowances per year to the Retirement Account based on transaction agreements with a single entity without the prior approval of the Department. This limitation shall not apply to any transfer occurring pursuant to a supplemental environmental project approved by a court, the Department, the United States Environmental Protection Agency, or any other state or province or other regulatory authority with an ETS program linked to the Pennsylvania cap-and-trade program and such transfers shall be deemed approved without further Department approval.

(C) A transfer request that is based on a transaction agreement with an unregistered entity that requires immediate delivery to the Retirement Account does not violate the prohibitions contained in section 147.221(f)(1).

§ 147.223. Disclosure of Cap-and-Trade Consultants and Advisors.

(a) A “Cap-and-Trade Consultant or Advisor” is a person or entity that is not an employee of an entity registered in the Cap-and-Trade Program, but is providing the services listed in section 147.279(b)(2) of the Cap-and-Trade Regulation or section 95133(b)(2) of the Mandatory Reporting Regulation in relation to the Cap-and-Trade Program or MRR and specifically for the entity registered in the Cap-and-Trade Program, regardless if the Consultant or Advisor is acting in the capacity of an offset or MRR verifier.

(b) An entity employing Cap-and-Trade Consultants or Advisors defined pursuant to 147.223(a) must disclose the following information for each Cap-and-Trade Consultant or Advisor:

(1) Information to identify the Cap-and-Trade Consultant or Advisor, including:

(A) Name;

(B) Contact information;

(C) Physical work address of the Cap-and-Trade Consultant or Advisor; and

(D) Employer, if applicable.

(c) The entity must disclose the information pursuant to section 147.223(b) to the Secretary:

(1) When registering pursuant to section 147.130;

(2) Within 30 days of entering into a contract with a Cap-and-Trade Consultant or Advisor pursuant to section 147.223(a);

(3) Within 30 days of a change to the information disclosed on Consultants or Advisors.

Subchapter 12: Linkage to External Greenhouse Gas Emissions Trading Systems

§ 147.240. General Requirements.

(a) A compliance instrument issued by an external greenhouse gas emissions trading system (GHG ETS) may be used to meet the requirements of this Article if the external GHG ETS and the compliance instrument have been approved pursuant to this section, including approval by rule, or section 147.241.

(b) Compliance instruments issued by the following authorities or jurisdictions may be used to meet the requirements of this Article without further action under section 147.241 provided those authorities or jurisdictions agree to accept PA GHG allowances to satisfy compliance obligations under their respective programs (subject to section 147.240(d)), as long as the Department determines that these programs continue to reduce their respective emissions caps on a trajectory to achieve a balance of GHG emissions and natural uptake of GHGs or sequestration in long term sinks (i.e. net zero emissions) by the fifth decade of the Twenty-first Century and the requirements of the programs do not change in a way that would promote leakage:

(1) The states participating in the Regional Greenhouse Gas Initiative (“RGGI”);

(2) The State of California and linked programs, including, without limitation the Canadian Provinces of Quebec and Ontario, so long as they remain linked with the California cap-and-trade program;

(3) The State of Virginia’s cap-and-trade program, so long as it is adopted in a form that permits trading with entities subject to the RGGI program; and

(4) Any authority or jurisdiction with an ETS program that has been accepted by California, RGGI or Virginia as a linked or equivalent program such that the ETS compliance instruments issued by that authority or jurisdiction may be used to satisfy the requirements of the California, RGGI or Virginia programs.

(c) The Department shall make a finding that the programs identified under this section continue to meet the requirements of section 147.240(b) and have not changed in a way that the findings under section 147.241(a) could not be satisfied six months before the commencement of each compliance period. The Department shall publish the finding in the

Pennsylvania Bulletin. If the Department finds that any external GHG ETS program no longer meets said requirements, compliance instruments issued by said external GHG ETS program after said finding may no longer be used to satisfy the requirements of this Chapter.

(d) The Department shall, until the end of the first full three-year compliance period following the effective date of this chapter, accept compliance instruments issued by any authority or jurisdiction identified in section 147.240(b), without a requirement that that authority or jurisdiction accept Pennsylvania compliance instruments, if the compliance instruments of the other jurisdiction or authority may satisfy requirements for the surrender of compliance instruments applicable to electricity generating units supplying electricity within PJM. The compliance instruments governed by this subsection shall be limited to compliance instruments with a vintage year after the effective date of this chapter and before the end of the first full compliance period. Any compliance instruments accepted pursuant to this subsection shall be permanently retired in accordance with the requirements of the program that issued those compliance instruments.

§ 147.241. Procedures for Approval of Other External GHG ETS.

(a) The Department may approve a linkage with an external GHG ETS in addition to those set forth in section 147.240(b) after making the following findings and publishing the findings in the Pennsylvania Bulletin:

(1) The external GHG ETS includes an emissions cap that is reduced on a trajectory to achieve a balance of GHG emissions and natural uptake of GHGs or sequestration in long term sinks (i.e. net zero emissions) by the fifth decade of the Twenty-first Century;

(2) At a minimum, the external GHG ETS requires the surrender of compliance instruments from all fossil-fuel-fired electricity generating units in the jurisdiction;

(3) The external GHG ETS does not authorize the creation and use of emissions offsets from sectors that are not subject to the requirement for surrender of compliance instruments under the external program but are subject to the requirements of this chapter unless the external program's emissions cap for covered sectors is reduced commensurately with the provision for the creation and use of offsets;

(4) The external GHG ETS will accept Pennsylvania allowances to satisfy its requirements;

(5) Linkage with the external GHG ETS will not result in leakage that will undermine the effectiveness of the Pennsylvania program;

(6) The external GHG ETS includes controls on issuance, transfers and holding of compliance instruments consistent with those in this Chapter, so that linkage will not undermine the effectiveness of the Pennsylvania program.

(b) Compliance instruments issued by a linked GHG ETS may be used to meet a compliance obligation under this chapter subject to any conditions or limitations established by the Department in its approval.

(c) The Department shall make a finding that the programs identified under this section continue to meet the requirements of section 147.240(b) and have not changed in a way that the findings under section 147.241(a) could not be satisfied six months before the commencement of each compliance period. The Department shall publish the finding in the Pennsylvania Bulletin. If the Department finds that any external GHG ETS program no longer meets said requirements, compliance instruments issued by said external GHG ETS program after said finding may no longer be used to satisfy the requirements of this Chapter.

§ 147.242. Interchange of Compliance Instruments with Linked External Greenhouse Gas Emissions Trading Systems.

(a) Once a linkage is approved (including automatic approval by rule), a compliance instrument issued by the approved external GHG ETS, as specified in this section, may be used to meet a compliance obligation under this Chapter.

(b) An allowance issued by an approved external GHG ETS and specified in this section is not subject to the quantitative usage limit specified in section 147.154.

(c) An offset credit or sector-based credit issued by an external GHG ETS is subject to the quantitative usage limit specified in section 147.154, when used to meet a compliance obligation under this Article.

(d) Once a linkage is approved, a compliance instrument issued by Pennsylvania may be used to meet a compliance obligation within the approved External GHG ETS.

(e) Once a linkage is approved, a compliance instrument issued by the linked jurisdiction may be used to meet a compliance obligation in Pennsylvania.

(f) The administrator of the approved External GHG ETS must agree to inform the Department of any of the serial numbers of Pennsylvania compliance instruments that the External GHG ETS accepts for compliance.

(g) The Department will agree to inform the appropriate official in the approved External GHG ETS of any of the serial numbers of compliance instruments accepted by Pennsylvania for compliance.

(h) The Department will register into the Retirement Account compliance instruments issued by Pennsylvania that are used for compliance within the approved External GHG ETS, along with information identifying the External GHG ETS actually retiring the compliance instruments.

§ 147.243. Linked External GHG ETS or External GHG Program.

(a) Covered or opt-in covered entities may use compliance instruments issued by an external GHG ETS to which the Department has approved a Retirement-Only Limited Linkage pursuant to section 147.244 to meet their compliance obligation under this chapter.

(b) Entities registered in an external GHG Program may arrange to retire Pennsylvania compliance instruments for purposes of compliance in their own external GHG program if DEP has approved a Retirement-Only Agreement with the external GHG Program pursuant to section 147.245.

§ 147.244. Retirement-Only Limited Linkage.

(a) The Department may approve a Retirement-Only Limited Linkage with an external GHG ETS pursuant to the procedure in section 147.241.

(1) A Retirement-Only Limited Linkage allows Pennsylvania covered or opt-in covered entities to arrange for the retirement of compliance instruments in the linked GHG ETS and to obtain approval from the Department for credit towards their compliance obligation.

(2) The Department approval will specify the types of compliance instruments from the linked GHG ETS that may be used to meet a compliance obligation under this chapter.

(3) The Department approval may specify limitations on the use of compliance instruments from the linked GHG ETS, such as quantitative use restrictions.

(b) Administration.

(1) The linkage agreement will ensure that purchases, transfers, and retirements of compliance instruments by Pennsylvania registered entities in the linked GHG ETS will follow the rules of that system.

(2) The linkage agreement will require the external GHG ETS to provide the accounts administrator with documentation on the compliance instruments retired by Pennsylvania entities on the linked GHG ETS at the time of each Pennsylvania compliance event.

§ 147.245. Retirement-Only Agreements With External GHG Program.

(a) The Department may approve a Retirement-Only Agreement with an external GHG program.

(1) A Retirement-Only Agreement allows entities registered with an external GHG program to arrange retirement of Pennsylvania compliance instruments for credit towards their compliance obligation in the external GHG program.

(2) The Retirement-Only Agreement will specify the types of compliance instruments eligible for retirement.

(3) The Retirement-Only Agreement may contain limitations on the retirement of Pennsylvania compliance instruments by entities registered with the external GHG program.

(b) Administration.

(1) The Accounts Administrator will create an External GHG Program Holding Account under the control of the Department pursuant to section 147.131(b)(7).

(2) Entities registered with an external GHG program may not register with Pennsylvania for the purpose of retiring Pennsylvania compliance instruments for compliance credit with their own GHG program, regardless of whether that program has a Retirement-Only Agreement or other linkage agreement with Pennsylvania.

(c) Conduct of Transactions Agreements and Transfer Requests Under a Retirement-Only Agreement.

(1) An entity registered with an external GHG program with a Retirement-Only Agreement may enter into a purchase transaction agreement with an entity registered in Pennsylvania requiring the Pennsylvania entity to transfer a number of eligible Pennsylvania compliance instruments to the External GHG Program Holding Account.

(2) The Pennsylvania entity will file a transfer request identifying the External GHG Program Holding Account as the destination account. The transfer request will include a field containing the purchasing entity's ID code as specified by the entity's external GHG program.

(3) Upon receipt and verification that the transfer has met the requirements of this Article, the Department will transfer the compliance instruments to the Retirement Account. This transfer request will include the purchasing entity's ID code as specified by the entity's external GHG program.

(4) The accounts administrator will provide the administrator of the external GHG program with documentation on the compliance instruments retired in Pennsylvania's tracking system by entities registered into the external GHG program when the administrator of the external GHG program needs the information to conduct a compliance event.

Subchapter 13: DEP Offset Credits and Registry Offset Credits

§ 147.270. General Requirements for DEP Offset Credits and Registry Offset Credits.

An Offset Project Operator or Authorized Project Designee must ensure the requirements for DEP offset credits and registry offset credits are met as follows:

- (a) A registry offset credit must:
 - (1) Represent a GHG emission reduction or GHG removal enhancement that is real, additional, quantifiable, permanent, verifiable, and enforceable;
 - (2) Result from the use of a Compliance Offset Protocol that meets the requirements of section 147.272 and is either approved by the Department pursuant to section 147.271 approved by any ETS trading system to with the Pennsylvania cap-and-trade program is linked;
 - (3) Result from an offset project that meets the requirements specified in section 147.273;
 - (4) Result from an offset project that is listed pursuant to section 147.275;
 - (5) Result from an offset project that follows the monitoring, reporting and record retention requirements pursuant to section 147.276;
 - (6) Result from an offset project that is verified pursuant to sections 147.277 through 147.278; and
 - (7) Be issued pursuant to section 147.280.1 by an Offset Project Registry approved pursuant to section 147.286.
- (b) A DEP offset credit must meet the requirements in sections 147.270(a)(1) through (a)(6) and:
 - (1) Be issued pursuant to section 147.281.1;
 - (2) Be registered pursuant to section 147.282; and
 - (3) When used for compliance under this article, be subject to the quantitative usage limit pursuant to section 147.154.

§ 147.271. Procedures for Approval of Compliance Offset Protocols.

(a) The Department shall provide public notice of and opportunity for public comment prior to approving any Compliance Offset Protocols, including updates or modifications to existing Compliance Offset Protocols.

(b) All Compliance Offset Protocols shall be reviewed and periodically revised, if needed, in compliance with the Pennsylvania Administrative Procedure Act, if applicable.

§ 147.272. Requirements for Compliance Offset Protocols.

(a) To be approved by the Department, a Compliance Offset Protocol must:

(1) Accurately determine the extent to which GHG emission reductions and GHG removal enhancements are achieved by the offset project type;

(2) Establish data collection and monitoring procedures relevant to the type of GHG emissions sources, GHG sinks, and GHG reservoirs for that offset project type;

(3) Establish a project baseline that reflects a conservative estimate of business-as-usual performance or practices for the offset project type;

(4) Account for activity-shifting leakage and market-shifting leakage for the offset project type, unless the Compliance Offset Protocol stipulates eligibility conditions for use of the Compliance Offset Protocol that eliminate the risk of activity-shifting and/or market-shifting leakage;

(5) Account for any uncertainty in quantification factors for the offset project type;

(6) Ensure GHG emission reductions and GHG removal enhancements are permanent;

(7) Include a mechanism to ensure permanence of GHG removal enhancements for sequestration offset project types;

(8) Establish the length of the crediting period pursuant to section 147.272(b) for the relevant offset project type;

(9) Demonstrate that the emissions reductions created by the project will not otherwise reduce demand for allowances; and

(10) Establish the eligibility and additionality of projects using standard criteria, and quantify GHG reductions and GHG removal enhancements using standardized baseline assumptions, emission factors, and monitoring methods.

(b) Crediting Periods. The crediting period for a non-sequestration offset project must be no less than 7 years and no greater than 10 years, unless specified otherwise in a Compliance Offset Protocol. The crediting period for a sequestration offset project must be no less than 10 years and no greater than 30 years.

(c) Geographic Applicability. A Compliance Offset Protocol must specify where the protocol is applicable. The geographic boundary must be within the United States or United States Territories.

§ 147.273. Requirements for Offset Projects Using DEP Compliance Offset Protocols.

(a) General Requirements for Offset Projects. To qualify under the provisions set forth in this article, an Offset Project Operator or Authorized Project Designee must ensure that an offset project:

(1) Meets all the requirements in a Compliance Offset Protocol approved by the Board pursuant to section 147.271;

(2) Meets the following additionality requirements, as well as any additionality requirements in the applicable Compliance Offset Protocol, as of the date of Offset Project Commencement:

(A) The activities that result in GHG reductions and GHG removal enhancements are not required by law, regulation, or any legally binding mandate applicable in the offset project's jurisdiction, will not reduce demand for allowances in any other respect, and would not otherwise occur in a business-as-usual scenario;

(B) The Offset Project Commencement date occurs after the effective date of this chapter, unless otherwise specified in the applicable Compliance Offset Protocol, except as provided in section 147.273(c); and

(C) The GHG reductions and GHG removal enhancements resulting from the offset project exceed the project baseline calculated by the applicable version of the Compliance Offset

Protocol under which the offset project has been listed pursuant to section 147.275 as set forth in the following:

1. California Compliance Offset Protocol Ozone Depleting Substances Projects, October 20, 2011, and Compliance Offset Protocol Ozone Depleting Substances Projects, November 14, 2014, which are hereby incorporated by reference;
2. California Compliance Offset Protocol Livestock Projects, October 20, 2011, and Compliance Offset Protocol Livestock Projects, November 14, 2014, which are hereby incorporated by reference;
3. California Compliance Offset Protocol Urban Forest Projects, October 20, 2011, which is hereby incorporated by reference;
4. California Compliance Offset Protocol U.S. Forest Projects, October 20, 2011, Compliance Offset Protocol U.S. Forest Projects, November 14, 2014, and Compliance Offset Protocol U.S. Forest Projects, June 25, 2015, which are hereby incorporated by reference;
5. California Compliance Offset Protocol Mine Methane Capture Projects, April 25, 2014, which is hereby incorporated by reference;
6. Offset Projects approved by the RGGI program to the extent that they relate to projects that they relate to projects' whose emissions are not covered by this regulation and will not otherwise reduce demand for allowances, including those for landfill methane capture, sulfur hexafluoride, forestry or afforestation, end-use efficiency in a jurisdiction that does not require the surrender of allowances for fossil fuel distribution, and avoided agricultural methane;
7. A compliance offset protocol that DEP shall develop before the effective date of this regulation for offsets created by abandoned minelands reclamation, including the control of mine fires and the control and prevention of fires in abandoned gob and culm piles, which may include the credit for projects initiated before the effective date of this chapter;
8. A compliance offset protocol that DEP shall develop within two years of the proposal of this regulation for offsets created by the capture and geologic sequestration of emissions from the combustion of biomass;
9. All Offset Project hereafter approved by any ETS trading system to with the Pennsylvania cap-and-trade program is linked, provided that the project does not result in double

counting by providing an allowance for a project whose implementation will otherwise reduce demand for that allowance.

(D) The Offset Project Operator or Authorized Project Designee may transition an offset project to the most recently incorporated version of the Compliance Offset Protocol by updating the listing information in an Offset Project Data Report pursuant to section 147.276. Projects may only transition at the initial submission of the Offset Project Data Report for a reporting period to DEP or the Offset Project Registry. An offset project that transitions to a new version of the Compliance Offset Protocol during a crediting period will continue in the same crediting period and not start a new crediting period.

(E) The offset project must meet all the requirements in this Regulation for the applicable version of the Compliance Offset Protocol under which the offset project has been listed pursuant to 147.275 or under which the offset project has been transitioned to pursuant section 147.273(a)(2)(D).

(F) The applicable version of the Compliance Offset Protocol is the version under which the offset project has been listed pursuant to section 147.275 or transitioned to pursuant section 147.273(a)(2)(D).

(G) If any law, regulation, or legally binding mandate requiring GHG emission reductions or GHG removal enhancements comes into effect in Pennsylvania, in a linked jurisdiction pursuant to section 147.243, or in a jurisdiction outside Pennsylvania, affecting the offset project, during an offset project's crediting period, then the offset project is eligible to continue to receive DEP offset credits for those GHG emission reductions and GHG removal enhancements for the remainder of the offset project's crediting period, but the offset project may not renew that crediting period. If an offset project has not been listed prior to the law, regulation, or legally binding mandate going into effect, or the law, regulation, or legally binding mandate goes into effect before the offset project's crediting period renews, then only emission reductions or removal enhancements that are in excess of what is required to comply with those laws, regulations, and/or legally binding mandates are eligible for DEP offset credits.

(3) Is located in the United States or United States Territories.

(b) Local, Regional, State, and National Regulatory Compliance and Environmental Impact Assessment Requirements. An Offset Project Operator or Authorized Project Designee must fulfill all local, regional, state, and national requirements on environmental impact assessments that apply based on the offset project location. In addition, an offset project must also fulfill all local, regional, state, and national environmental and health and safety and land use laws and regulations that apply based on the offset project location and that directly apply to the offset project, including as specified in a Compliance Offset Protocol. The project is considered out of regulatory compliance if the project activities were subject to enforcement action by a regulatory oversight body during the Reporting Period, although whether such enforcement action has occurred is not the only consideration DEP may use in determining whether a project is out of regulatory compliance.

(1) An offset project using a protocol from sections 147.273(a)(2)(C)1., 2., or 5. that is out of regulatory compliance is not eligible to receive DEP or registry offset credits for GHG reductions or GHG removal enhancements that occurred during the period that the offset project is out of regulatory compliance. The Offset Project Operator or Authorized Project Designee must provide documentation indicating the beginning and end of the time period that the offset project is out of regulatory compliance to the satisfaction of DEP.

(A) The time period that the offset project is out of regulatory compliance begins on the date that the activity which led to the offset project being out of regulatory compliance actually began and not necessarily the date that the regulatory oversight body first became aware of the issue. For determining the initial date of the offset project being out of regulatory compliance the Offsets Project Operator or Authorized Project Designee must provide one or more of the following to DEP:

1. Documentation from the relevant local, state, or federal regulatory oversight body that expressly identifies the precise start date of the offset project being out of regulatory compliance. Documentation must include evidence of the start date such as CEMS or other monitoring data, engineering estimates, satellite imagery, witness statements, or other reasonable method to aid in the identification of the precise start date; or

2. Documentation of the date of the last inspection by the relevant local, state, or federal regulatory oversight body that did not indicate the offset project was out of regulatory

compliance for the activity in question. The project will be considered out of regulatory compliance beginning the day after the inspection.

3. If the last inspection described in section 147.273(b)(1)(A)2. above was prior to the beginning of the Reporting Period, or if documentation regarding the date the project was out of regulatory compliance is not provided as set forth in sections 147.273(b)(1)(A)(1) or (2) above to the satisfaction of DEP, then the time period that the offset project is out of regulatory compliance, for purposes of the Reporting Period, commences at the beginning of the Reporting Period.

(B) For determining the end date when the offset project returned to regulatory compliance, the Offset Project Operator or Authorized Project Designee must provide documentation from the relevant local, state, or federal regulatory oversight body stating that the offset project is back in regulatory compliance. The date when the offset project is deemed to have returned to regulatory compliance is the date that the relevant local, state, or federal regulatory oversight body determines that the project is back in regulatory compliance. This date is not necessarily the date that the activity ends or the device is repaired, and may include time for the payment of fines or completion of any additional requirements placed on the offset project by the regulatory oversight body, as determined by the regulatory oversight body. If the relevant regulatory oversight body does not provide a written determination regarding the date when the project returned to regulatory compliance to the satisfaction of DEP, then for purposes of the applicable Reporting Period, the Offset Project Operator or Authorized Project Designee must use the end of the Reporting Period for the end date when the offset project returned to regulatory compliance.

(C) Nothing in this section precludes the invalidation of DEP offset credits issued for previous or subsequent Reporting Periods if DEP determines that the offset project was out of regulatory compliance in previous or subsequent Reporting Periods. The offset project will continue to be deemed out of regulatory compliance in subsequent Reporting Periods until the Offset Project Operator or Authorized Project Designee provides the documentation demonstrating regulatory compliance identified in section 147.273(b)(1)(B) to DEP.

(D) DEP's written determination and any supporting documents from the regulatory oversight body relating to the offset project being out of regulatory compliance and the timeframe identified for removal from the Reporting Period will be made public.

(E) For determining GHG emission reductions or GHG removal enhancements for the Reporting Period as modified to reflect any period the offset project was out of regulatory compliance, the Offset Project Operator or Authorized Project Designee must remove the days when the project was out of regulatory compliance from the modeled or measured project baselines for projects using a protocol in sections 147.273(a)(2)(C)2. or 5. The entire calendar day during which any portion of the project was not in regulatory compliance must be removed from the project baseline. For projects using a protocol in section 147.273(a)(2)(C)1., the entire destruction(s) under a Certificate of Destruction that contains any time the project is out of regulatory compliance must be removed.

(2) An offset project using a protocol from sections 147.273(a)(2)(C)3., 4., or 6., is not eligible to receive DEP or registry offset credits for GHG reductions or GHG removal enhancements for the entire Reporting Period if the offset project is not in compliance with regulatory requirements directly applicable to the offset project during the Reporting Period.

§ 147.274. Authorized Project Designee.

(a) General Requirements for Designation of Authorized Project Designee. An Offset Project Operator may designate an entity as an Authorized Project Designee at the time of offset project listing or any time after offset project listing as long as it meets the requirements of section 147.274(b).

(1) The Offset Project Operator may assign ownership rights of DEP offset credits or registry offset credits to the following entities at the time of registry offset credit or DEP offset credit issuance pursuant to sections 147.280.1 and 147.281, respectively:

- (A) Authorized Project Designee; or
- (B) Any other third party not otherwise prohibited by this article.

(2) The director or officer, as identified in section 147.130(c)(1)(B), of the Offset Project Operator may delegate responsibility to the Authorized Project Designee for performing or meeting all the requirements of sections 147.275, 147.276, 147.277, 147.277.1, 147.277.2,

147.280, 147.280.1, 147.281, 147.281.1, and, where the Authorized Project Designee is specifically identified, the requirements in sections 147.283, 147.285, on behalf of the Offset Project Operator.

(A) If an Authorized Project Designee is designated, the Authorized Project Designee will be responsible for performing all activities to meet the requirements in section 147.274(a)(2) and will be the main point of contact with regard to the offset project for the Offset Project Registry and DEP. The Offset Project Operator, however, is ultimately responsible for ensuring compliance with the requirements of this article and the applicable Compliance Offset Protocol. In addition, the Offset Project Operator retains its ability to perform any activities required under this article, including signing documents and attestations.

(B) If an Authorized Project Designee is designated, the Offset Project Operator must designate an individual of the Authorized Project Designee as a Primary Account Representative or Alternate Account Representative on the Offset Project Operator's tracking system account before the Authorized Project Designee may act on behalf of the Offset Project Operator or submit any documentation to the Offset Project Registry and DEP. Only an individual authorized on the Offset Project Operator's tracking system account may sign any documents or attestations to DEP on behalf of the Offset Project Operator for an offset project.

(C) Consultants. An Offset Project Operator or Authorized Project Designee may use a consultant to prepare documents for submittal by the Offset Project Operator or Authorized Project Designee to the Offset Project Registry or DEP. However, a consultant may not sign any documents or attestations on behalf of the Offset Project Operator or Authorized Project Designee. A consultant may only communicate with DEP or the Offset Project Registry in conjunction with the Offset Project Operator or Authorized Project Designee, and the Offset Project Operator or Authorized Project Designee must be included in all communications, whether written or verbal, between DEP or the Offset Project Registry and the consultant regarding the offset project.

(b) Modifications to Authorized Project Designee and Activities. An Offset Project Operator may modify or change an Authorized Project Designee, or any other third party authorized pursuant to section 147.274(a)(1) for a listed offset project once within each calendar

year after the offset project has been listed by DEP or an Offset Project Registry by submitting a request, in writing, to DEP or an Offset Project Registry.

§ 147.275. Listing of Offset Projects Using DEP Compliance Offset Protocols.

(a) General Requirements for Offset Project Operators or Authorized Project Designees Who Are Submitting an Offset Project for Listing. Before an offset project can be listed by DEP or an Offset Project Registry the Offset Project Operator and its Authorized Project Designee, if applicable, must:

- (1) Register with DEP pursuant to section 147.130; and
- (2) Not be subject to any Holding Account restrictions imposed pursuant to section 147.311.

(b) If the offset project is not listed by DEP, it must be listed by an Offset Project Registry approved pursuant to section 147.286.

(c) General Requirements for Offset Project Listing. For offset projects being listed by DEP or an Offset Project Registry in an initial or renewed crediting period, the Offset Project Operator and any Authorized Project Designees approved pursuant to section 147.274 must:

- (1) Attest, in writing, to DEP as follows:

“I certify under penalty of perjury under the laws of the Commonwealth of Pennsylvania the GHG reductions and/or GHG removal enhancements for [project] from [date] to [date] will be measured in accordance with the [appropriate DEP Compliance Offset Protocol] and all information required to be submitted to DEP is true, accurate, and complete.”;

- (2) Attest, in writing, to DEP as follows:

“I understand I am voluntarily participating in the Pennsylvania Greenhouse Gas Cap-and-Trade Program under 25 Pa. Code Chapter 147, and by doing so, I am now subject to all regulatory requirements and enforcement mechanisms of this program and subject myself to the jurisdiction of Pennsylvania as the exclusive venue to resolve any and all disputes arising from the enforcement of provisions in this chapter.”;

- (3) Attest in writing to DEP as follows:

“I understand that the offset project activity and implementation of the offset project must be in accordance with all applicable local, regional, and national environmental and health and safety laws and regulations that apply to the offset project location. I understand that offset projects are not eligible to receive DEP or registry offset credits for GHG reductions and GHG removal enhancements that are not in compliance with the requirements of the Cap-and-Trade Program.”;

(4) Provide all documentation required pursuant to section 147.275(e) to DEP or an Offset Project Registry; and

(5) Disclose GHG reductions and GHG removal enhancements issued credit by any voluntary or mandatory programs for the same offset project being listed or any GHG reductions and GHG removal enhancements used for any GHG mitigation requirement.

(d) The attestations in section 147.275(c)(1), 147.275(c)(2), and 147.275(c)(3) must be provided to an Offset Project Registry with the listing information, if being listed with an Offset Project Registry, or to DEP if being listed with DEP.

(e) Offset Project Listing Information Requirements. Before an offset project is publicly listed for an initial or renewed crediting period the Offset Project Operator or Authorized Project Designee must provide the listing information in the most recent version of a Compliance Offset Protocol for that offset project type as set forth in and incorporated by reference. The following constitute the currently approved and future required offset protocols:

(1) California Compliance Offset Protocol Ozone Depleting Substances Projects, November 14, 2014;

(2) California Compliance Offset Protocol Livestock Projects, November 14, 2014;

(3) California Compliance Offset Protocol Urban Forest Projects, October 20, 2011;

(4) California Compliance Offset Protocol U.S. Forest Projects, June 25, 2015;

(5) California Compliance Offset Protocol Mine Methane Capture Projects, April 25, 2014;

(6) Offset Projects approved by the RGGI program to the extent that they relate to projects that they relate to projects' whose emissions are not covered by this regulation and will

not otherwise reduce demand for allowances, including those for landfill methane capture, sulfur hexafluoride, forestry or afforestation, end-use efficiency in a jurisdiction that does not require the surrender of allowances for fossil fuel distribution, and avoided agricultural methane;

(7) A compliance offset protocol that DEP shall develop before the effective date of this regulation for offsets created by abandoned minelands reclamation, including the control of mine fires and the control and prevention of fires in abandoned gob and culm piles, which may include the credit for projects initiated before the effective date of this chapter; and

(8) A compliance offset protocol that DEP shall develop within two years of the proposal of this regulation for offsets created by the capture and geologic sequestration of emissions from the combustion of biomass.

(9) All Offset Project hereafter approved by any ETS trading system to with the Pennsylvania cap-and-trade program is linked

(f) Review of Offset Project Listing Information. DEP and/or the Offset Project Registry will review the offset project listing information submitted pursuant to section 147.275(e) for completeness.

(g) Notice of Completeness for Offset Project Listing Information. The Offset Project Operator or Authorized Project Designee will be notified after review by DEP or the Offset Project Registry, within 30 calendar days of receiving the complete and accurate listing information, that the offset project may be listed. If DEP or the Offset Project Registry determine that the information submitted pursuant to section 147.275(e) is incomplete or that a denial of the listing information is required, DEP or the Offset Project Registry will notify the Offset Project Operator or Authorized Project Designee of this determination within 30 calendar days of receiving the listing information from the Offset Project Operator or Authorized Project Designee.

(h) Timing for Offset Project Listing in an Initial Crediting Period. The Offset Project Operator or Authorized Project Designee must submit the information in section 147.275(e) to DEP or an Offset Project Registry no later than the date at which the Offset Project Operator or Authorized Project Designee submits its required Offset Project Data Report for its first Reporting Period under a Compliance Offset Protocol to DEP or an Offset Project Registry

pursuant to section 147.276. The Offset Project Operator or Authorized Project Designee must submit the listing information in section 147.275(e) to DEP or an Offset Project Registry no later than one year after Offset Project Commencement. If the Offset Project Operator or Authorized Project Designee does not submit the listing information in section 147.275(e) for the offset project to DEP or an Offset Project Registry within one year of Offset Project Commencement, it will be ineligible to be listed under a Compliance Offset Protocol and will not be issued registry offset credits and DEP offset credits pursuant to sections 147.280 and 147.281.

(i) Listing Status of Offset Projects in an Initial Crediting Period. After the Offset Project Operator or Authorized Project Designee submits the offset project for listing in an initial crediting period and the required documentation pursuant to section 147.275(e), and DEP or the Offset Project Registry has reviewed the offset project listing information for completeness, the offset project listing status will be “Proposed Project.” If the offset project is not accepted for listing by an Offset Project Registry, the Offset Project Operator or Authorized Project Designee may request DEP to make a final determination if the offset project meets the requirements in section 147.275 to be listed for an initial crediting period by the Offset Project Registry. In making this determination, DEP may consult with the Offset Project Registry before making the final determination.

(j) Timing for Offset Project Listing in a Renewed Crediting Period. The Offset Project Operator or Authorized Project Designee must submit the information in section 147.275(e) for a renewed crediting period to DEP or an Offset Project Registry no earlier than 18 months and no later than 9 months before conclusion of the initial crediting period or a previous renewed crediting period.

(k) Listing Status of Offset Projects in a Renewed Crediting Period. After the Offset Project Operator or Authorized Project Designee submits the offset project for listing in a renewed crediting period and the required documentation pursuant to section 147.275(e), and DEP or the Offset Project Registry has reviewed the offset project listing information for completeness, the offset project listing status will be “Proposed Renewal.” The verification body must assess that the offset project meets the additionality requirements in section 147.273(a)(2)(A) and 147.273(a)(2)(C) as of the date of the commencement of the renewed crediting period when conducting offset verification services for the first Reporting Period of a

renewed crediting period. If the offset project is not accepted for listing by an Offset Project Registry, the Offset Project Operator or Authorized Project Designee may request DEP to make a final determination if the project meets the requirements in section 147.275 to be listed for a renewed crediting period by the Offset Project Registry. In making this determination, DEP may consult with the Offset Project Registry before making the final determination.

(l) Once DEP or an Offset Project Registry approves an offset project for listing, the listing information is considered final, and may not be changed unless the Offset Project Operator changes during the crediting period.

(1) If the Offset Project Operator changes during the crediting period the new Offset Project Operator or Authorized Project Designee must submit updated listing information for the information that pertains to the Offset Project Operator and Authorized Project Designee, if applicable, to DEP or the Offset Project Registry within 30 calendar days of the change.

(2) If the Offset Project Operator changes during the crediting period the new Offset Project Operator or Authorized Project Designee must submit the information required pursuant to section 147.275(c) to DEP or the Offset Project Registry within 30 calendar days of the change.

(m) Limitations for Crediting Period Renewals. A crediting period may be renewed if the offset project meets the requirements for additionality pursuant to section 147.273(a)(2) and in the applicable Compliance Offset Protocol.

(1) The crediting period for non-sequestration offset projects may be renewed twice for the length of time identified by the Compliance Offset Protocol.

(2) Sequestration offset projects are not subject to any renewal limits.

(n) Transferring an Offset Project. If the Offset Project Operator or Authorized Project Designee transfers an offset project listed with DEP or an Offset Project Registry to DEP or another Offset Project Registry:

(1) DEP or the Offset Project Registry that originally listed the offset project must change the offset project listing status on its registry system to “Transferred DEP Project.”

(A) If the only action taken by the Offset Project Operator or the Authorized Project Designee was to have the listing documentation for the offset project approved by DEP or the

original Offset Project Registry, DEP or the original Offset Project Registry must retain the information related to the offset project on its website for the duration of one year before it is removed from the registry system. If the listing documentation was only submitted by the Offset Project Operator or Authorized Project Designee, but not approved by DEP or the original Offset Project Registry, DEP or the original Offset Project Registry does not need to retain the submitted listing documentation.

(B) If a verification body submitted an Offset Verification Statement, DEP or the original Offset Project Registry must retain the information related to the offset project on its website for the duration of the offset project life.

(C) DEP or the new Offset Project Registry must retain the listing date and all listing information as approved by DEP or the original Offset Project Registry. If the offset project has not undergone initial verification, the Offset Project Commencement date may change as a result of verification activities only.

(2) The Offset Project Operator or Authorized Project Designee must submit the original listing documentation reviewed and accepted by DEP or the original Offset Project Registry pursuant to this section to the new Offset Project Registry. The Offset Project Operator or Authorized Project Designee may only make changes to the listing documentation pursuant to section 147.275(1).

(3) The Offset Project Operator or Authorized Project Designee may not transfer an offset project to DEP or another Offset Project Registry once a Notice of Offset Verification Services has been submitted for a Reporting Period(s) pursuant to section 147.277.1(b)(1) or during the course of offset verification services for a Reporting Period(s). Once a Notice of Offset Verification Services has been submitted, the offset verification services must be completed for the applicable Reporting Period(s) before the Offset Project Operator or Authorized Project Designee may transfer the offset project to DEP or another Offset Project Registry. Once the offset verification services are completed for the applicable Reporting Period(s), the Offset Project Operator or Authorized Project Designee may transfer the offset project to DEP or another Offset Project Registry.

(n) Limitations for Listing Forest Offset Projects. Once a forest offset project has been issued registry offset credits pursuant to sections 147.280 and 147.280.1 or DEP offset

credits pursuant to sections 147.281 and 147.281.1, no other offset project may be listed with a Project Area including any land within the previously listed geographic boundary of the previous offset project unless the previous offset project was terminated due to an unintentional reversal or unless otherwise specified in a Compliance Offset Protocol.

§ 147.276. Monitoring, Reporting, and Record Retention Requirements for Offset Projects.

(a) General Requirements for Monitoring Equipment for Offset Projects. The Offset Project Operator or Authorized Project Designee must employ the procedures in the Compliance Offset Protocol for monitoring measurements and project performance for offset projects. All required monitoring equipment must be maintained and calibrated in a manner and at a frequency required by the equipment manufacturer, unless otherwise specified in the applicable Compliance Offset Protocol. All modeling, monitoring, sampling, or testing procedures must be conducted in a manner consistent with the applicable procedure.

(b) The Offset Project Operator or Authorized Project Designee must use the missing data methods as provided in a Compliance Offset Protocol for that offset project type, if provided and applicable.

(c) An Offset Project Operator or Authorized Project Designee must put in place all monitoring equipment or mechanisms required by the applicable version of the Compliance Offset Protocol for that offset project type as set forth in:

(1) California Compliance Offset Protocol Ozone Depleting Substances Projects, October 20, 2011 and Compliance Offset Protocol Ozone Depleting Substances Projects, November 14, 2014;

(2) California Compliance Offset Protocol Livestock Projects, October 20, 2011 and Compliance Offset Protocol Livestock Projects, November 14, 2014;

(3) California Compliance Offset Protocol Urban Forest Projects, October 20, 2011;

(4) California Compliance Offset Protocol U.S. Forest Projects, October 20, 2011, Compliance Offset Protocol U.S. Forest Projects, November 14, 2014 and Compliance Offset Protocol U.S. Forest Projects, June 25, 2015;

(5) California Compliance Offset Protocol Mine Methane Capture Projects, April 25, 2014; and

(6) Offset Projects approved by the RGGI program to the extent that they relate to projects that they relate to projects' whose emissions are not covered by this regulation and will not otherwise reduce demand for allowances, including those for landfill methane capture, sulfur hexafluoride, forestry or afforestation, end-use efficiency in a jurisdiction that does not require the surrender of allowances for fossil fuel distribution, and avoided agricultural methane.

(7) A compliance offset protocol that DEP shall develop before the effective date of this regulation for offsets created by abandoned minelands reclamation, including the control of mine fires and the control and prevention of fires in abandoned gob and culm piles, which may include the credit for projects initiated before the effective date of this chapter.

(8) A compliance offset protocol that DEP shall develop within two years of the proposal of this regulation for offsets created by the capture and geologic sequestration of emissions from the combustion of biomass.

(9) All Offset Project hereafter approved by any ETS trading system to with the Pennsylvania cap-and-trade program is linked, provided that the project does not result in double counting by providing an allowance for a project whose implementation will otherwise reduce demand for that allowance.

(d) Offset Project Reporting Requirements. An Offset Project Operator or Authorized Project Designee shall submit an Offset Project Data Report to DEP or an Offset Project Registry for each Reporting Period as defined in section 147.002. Each Offset Project Data Report must cover a single Reporting Period. Reporting Periods must be contiguous; there must be no gaps in reporting once the first Reporting Period has commenced. If the Offset Project Operator or Authorized Project Designee fails to submit an Offset Project Data Report, then the Offset Project will be considered terminated and not eligible for DEP offset credits. An Offset Project Data Report may be submitted after the deadline identified in section 147.276(d)(8), but before the end of the next Reporting Period, to maintain continuous reporting; however, no DEP offset credits will be issued for the GHG emission reduction or removal enhancements quantified and reported in the Offset Project Data Report pursuant to section 147.276(d)(9). For projects developed under the Compliance Offset Protocol in section 147.273(a)(2)(C)1., there may be one

Offset Project Data Report submitted for each offset project and the Offset Project Data Report may cover up to a maximum of 12 months of data. The Offset Project Operator or Authorized Project Designee must submit an Offset Project Data Report to DEP or an Offset Project Registry within 28 months of listing their offset project pursuant to section 147.275 and must also meet all other applicable deadlines pertaining to submittal of the Offset Project Data Report. If the Offset Project Operator or Authorized Project Designee does not submit an Offset Project Data Report to DEP or an Offset Project Registry within 28 months of listing an offset project, then the Offset Project Operator or Authorized Project Designee must update the listing information in the Offset Project Data Report to reflect the most recent version of the Compliance Offset Protocol for that project type in order to remain eligible to be issued DEP offset credits. If an Offset Project Data Report that does not meet the 28 month deadline also fails to meet the deadline in section 147.276(d)(8), an Offset Project Data Report covering the Reporting Period must be submitted using the most recent version of the Compliance Offset Protocol; however, no DEP offset credits will be issued for the GHG emission reductions or removal enhancements, pursuant to section 147.276(d)(9). For forestry offset projects, when an Offset Project Data Report is not filed within the deadline specified in section 147.276(d)(8), the values used for $AC_{\text{onsite},y-1}$ and $BC_{\text{onsite},y-1}$ in the Offset Project Data Report for the following Reporting Period will be the $AC_{\text{onsite},y}$ and $BC_{\text{onsite},y}$ values reported in the untimely Offset Project Data Report for the preceding Reporting Period. The Offset Project Data Report shall contain the information required by the applicable version of the Compliance Offset Protocol for that offset project type as set forth in:

- (1) California Compliance Offset Protocol Ozone Depleting Substances Projects, October 20, 2011 and Compliance Offset Protocol Ozone Depleting Substances Projects, November 14, 2014;
- (2) California Compliance Offset Protocol Livestock Projects, October 20, 2011 and Compliance Offset Protocol Livestock Projects, November 14, 2014;
- (3) California Compliance Offset Protocol Urban Forest Projects, October 20, 2011;
- (4) California Compliance Offset Protocol U.S. Forest Projects, October 20, 2011, Compliance Offset Protocol U.S. Forest Projects, November 14, 2014, and Compliance Offset Protocol U.S. Forest Projects, June 25, 2015;

(5) California Compliance Offset Protocol Mine Methane Capture Projects, April 25, 2014;

(6) Offset Projects approved by the RGGI program to the extent that they relate to projects that they relate to projects' whose emissions are not covered by this regulation and will not otherwise reduce demand for allowances, including those for landfill methane capture, sulfur hexafluoride, forestry or afforestation, end-use efficiency in a jurisdiction that does not require the surrender of allowances for fossil fuel distribution, and avoided agricultural methane;

(7) A compliance offset protocol that DEP shall develop before the effective date of this regulation for offsets created by abandoned minelands reclamation, including the control of mine fires and the control and prevention of fires in abandoned gob and culm piles, which may include the credit for projects initiated before the effective date of this chapter; and

(8) A compliance offset protocol that DEP shall develop within two years of the proposal of this regulation for offsets created by the capture and geologic sequestration of emissions from the combustion of biomass.

(9) All Offset Project hereafter approved by any ETS trading system to with the Pennsylvania cap-and-trade program is linked, provided that the project does not result in double counting by providing an allowance for a project whose implementation will otherwise reduce demand for that allowance.

(10) The Offset Project Operator or Authorized Project Designee must attest, in writing, to DEP as follows:

“I certify under penalty of perjury under the laws of the Commonwealth of Pennsylvania the GHG reductions and/or GHG removal enhancements for [project] from [date] to [date] are measured in accordance with the [appropriate DEP Compliance Offset Protocol] and all information required to be submitted to DEP in the Offset Project Data Report is true, accurate, and complete.”

This attestation must be provided with each version of the Offset Project Data Report to an Offset Project Registry if the offset project is listed with an Offset Project Registry, or to DEP if the offset project is listed with DEP.

(11) All Offset Project Data Reports must be submitted within four months after the conclusion of each Reporting Period.

(12) If an Offset Project Data Report is not submitted to DEP or an Offset Project Registry by the applicable reporting deadline, the GHG reductions and GHG removal enhancements quantified and reported in the Offset Project Data Report are not eligible to be issued DEP offset credits pursuant to section 147.281.

(13) Each version of an Offset Project Data Report submitted to DEP or an Offset Project Registry must specify the version number and the date submitted.

(e) Requirements for Record Retention for Offset Projects. An Offset Project Operator or Authorized Project Designee must meet the following requirements:

(1) The Offset Project Operator or Authorized Project Designee must retain the following documents:

(A) All information submitted as part of the Offset Project Data Report;

(B) Documentation of the offset project boundary, including a list of all GHG emissions sources, GHG sinks, and GHG reservoirs included in the offset project boundary and the project baseline, and the calculation of the project baseline, project emissions, GHG emission reductions, and GHG removal enhancements;

(C) Fuel use and any other underlying measured or sampled data used to calculate project baseline emissions, GHG emission reductions, and GHG removal enhancements for each source, categorized by process and fuel, or material type;

(D) Documentation of the process for collecting fuel use or any other underlying measured or sampled data for the offset project and its GHG emissions sources, GHG sinks, and GHG reservoirs for quantifying project baseline emissions, project emissions, GHG emission reductions, and GHG removal enhancements;

(E) Documentation of all project baseline emissions, project emissions, GHG emission reductions, and GHG removal enhancements;

(F) All point of origin and chain of custody documents required by a Compliance Offset Protocol, if applicable;

(G) All chemical analyses, results, and testing-related documentation for material and sources used for inputs to project baseline emissions, project emissions, GHG emission reductions, and GHG removal enhancements;

(H) All model inputs or assumptions used for quantifying project baseline emissions, project emissions, GHG emission reductions, and GHG removal enhancements;

(I) Any data used to assess the accuracy of project baseline emissions, GHG emission reductions, and GHG removal enhancements from each offset project GHG emissions source, GHG sink, and GHG reservoir, categorized by process;

(J) Quality assurance and quality control information including information regarding any measurement gaps, missing data substitution, calibrations or maintenance records for monitoring equipment, or models providing data for calculating project baseline emissions, project emissions, GHG emission reductions, and GHG removal enhancements;

(K) A detailed technical description of any offset project continuous measurement/monitoring system, including documentation of any findings and approvals by federal, state, and local agencies;

(L) Raw and aggregated data from any measurement system;

(M) Documentation of any changes over time and the log book on tests, down-times, calibrations, servicing, and maintenance for any measurement/monitoring equipment providing data for project baseline calculations, project emissions, GHG emission reductions, and GHG removal enhancements;

(N) For sequestration offset projects, documentation of inventory methodologies and sampling procedures including all calculation methodologies and equations used, and any data related to plot sampling; and

(O) Any other documentation or data required to be retained by a Compliance Offset Protocol, if applicable.

(2) Documents listed in section 147.276(e)(1) associated with the preparation of an Offset Project Data Report shall be retained in paper, electronic, or other usable format for a minimum of 15 years following the issuance of DEP offset credits related to that Offset Project

Data Report. All other documents shall be retained in paper, electronic, or other usable format for a minimum of 15 years.

(3) The documents retained pursuant to this section must be sufficient to allow for the verification of each Offset Project Data Report.

(4) Upon request by DEP or an Offset Project Registry, the Offset Project Operator or Authorized Project Designee must provide to DEP or an Offset Project Registry all documents pursuant to this section, including data used to develop an Offset Project Data Report within 10 calendar days of the request.

(f) General Procedure for Interim Data Collection. This section only applies if a Compliance Offset Protocol does not already include methods, or does not include a specific method for the data in question, for collecting or accounting for data in the event of missing data due to an unforeseen breakdown of gas or fuel analytical monitoring equipment or other data collection systems.

(1) In the event of an unforeseen breakdown of offset project data monitoring equipment and gas or fuel flow monitoring devices required for the GHG emission reductions and GHG removal enhancement estimation, DEP may authorize an Offset Project Operator or Authorized Project Designee to use an interim data collection procedure if DEP determines that the Offset Project Operator or Authorized Project Designee has satisfactorily demonstrated that:

(A) The breakdown may result in a loss of more than 20 percent of the source's data for the year covered by an Offset Project Data Report;

(B) The data monitoring equipment cannot be promptly repaired or replaced without shutting down a process unit significantly affecting the offset project operations, or that the monitoring equipment must be replaced and replacement equipment is not immediately available;

(C) The interim procedure will not remain in effect longer than is reasonably necessary for repair or replacement of the malfunctioning data monitoring equipment; and

(D) The request was submitted within 30 calendar days of the breakdown of the data monitoring equipment.

(2) An Offset Project Operator or Authorized Project Designee seeking approval of an interim data collection procedure must, within 30 calendar days of the monitoring equipment breakdown, submit a written request to DEP that includes all of the following:

(A) The proposed start date and end date of the interim procedure;

(B) A detailed description of what data are affected by the breakdown;

(C) A discussion of the accuracy of data collected during the interim procedure compared with the data collected under the Offset Project Operator's or Authorized Project Designee's usual equipment-based method; and

(D) A demonstration that no feasible alternative procedure exists that would provide more accurate emissions data.

(3) DEP may limit the duration of the interim data collection procedure or include other conditions for approval.

(4) Data collected pursuant to an approved interim data collection procedure shall be considered captured data for purposes of compliance with a Compliance Offset Protocol. When approving an interim data collection procedure, DEP shall determine whether the accuracy of data collected under the procedure is reasonably equivalent to data collected from properly functioning monitoring equipment, and if it is not, the relative accuracy to assign for purposes of assessing possible offset material misstatement under section 147.277.1(b)(3)(Q) of this article.

§ 147.277. Verification of GHG Emission Reductions and GHG Removal Enhancements from Offset Projects.

(a) General Requirements. An Offset Project Operator or Authorized Project Designee must obtain the services of an DEP-accredited verification body for the purposes of verifying Offset Project Data Reports submitted under this article.

(b) Schedule for Verification of Non-Sequestration Offset Projects. The verification of GHG emission reductions for non-sequestration offset projects that produce greater than or equal to 25,000 metric tons of GHG reductions must be performed on a Reporting Period basis and cover the Reporting Period for which the most recent Offset Project Data Report was submitted unless otherwise specified in a Compliance Offset Protocol. For Reporting Periods in which an Offset Project Data Report for a non-sequestration offset project shows that the offset

project produced fewer than 25,000 metric tons of GHG reductions in a Reporting Period, the Offset Project Operator or Authorized Project Designee may choose to perform verification that covers two consecutive Reporting Periods, even if for the subsequent Reporting Period the offset project produced greater than or equal to 25,000 metric tons of GHG reductions. If an Offset Project Data Report results in zero GHG emission reductions, the Offset Project Operator or Authorized Project Designee may defer verification until the offset project produces an Offset Project Data Report that no longer results in zero GHG emission reductions.

(c) Schedule for Verification of Sequestration Offset Projects. An initial verification of GHG emission reductions and GHG removal enhancements for all sequestration offset projects must be performed following the first Reporting Period and cover one Reporting Period. After the first Reporting Period, verification must be conducted at least once every six years and may cover up to six Reporting Periods for which Offset Project Data Reports were submitted. After an initial verification with a Positive Offset Verification Statement, reforestation offset projects and urban forest offset projects that meet the requirements of the applicable Compliance Offset Protocol may defer the second verification for twelve years, but verification of Offset Project Data Reports must be performed at least once every six years thereafter. For offset projects that do not renew their crediting period, verification must still be conducted at least once every six years for the remainder of the project life. However, after a successful full offset verification of an Offset Project Data Report indicating that Actual Onsite Carbon Stocks (in MTCO₂e) are at least 10% greater than the Actual Onsite Carbon Stocks reported in the final Offset Project Data Report of the final crediting period that received a positive Offset Verification Statement, the next full offset verification service may be deferred for twelve years. An offset project that has deferred verification for twelve years must resume conducting a full verification at least once every six years if it receives an Adverse Offset Verification Statement.

(d) Timing for Submittal of Offset Verification Statements to DEP or an Offset Project Registry. Any Offset Verification Statement must be received by DEP or an Offset Project Registry within eleven months after the conclusion of the Reporting Period for which offset verification services were performed, except for Reporting Periods for which verification is deferred in accordance with this section. If the Offset Verification Statement is not submitted to DEP or an Offset Project Registry by the verification deadline, the GHG reductions and GHG removal enhancements quantified and reported in the Offset Project Data Report are not eligible

to be issued DEP offset credits or registry offset credits. The verification body must issue one Offset Verification Statement for each Offset Project Data Report that it verifies for the Offset Project Operator or Authorized Project Designee.

§ 147.277.1. Requirements for Offset Verification Services.

(a) Rotation of Verification Bodies. An offset project shall not have more than any six out of nine consecutive Reporting Periods verified by the same verification body or offset verification team member(s), unless otherwise specified in section 147.277.1(a)(1) or (a)(2). The rotation requirements in this section are applied between the Offset Project Operator, Authorized Project Designee, if applicable, and any technical consultant(s) used by the Offset Project Operator or Authorized Project Designee, if applicable, and the verification body and offset verification team member(s) on an offset project basis.

(1) For offset projects developed under the Compliance Offset Protocol in section 147.273(a)(2)(C)(1), the following shall apply: Neither a verification body nor offset verification team member may conduct offset verification services for more than any six out of nine consecutive offset projects developed by any given Offset Project Operator, or developed on behalf of that Offset Project Operator by any Authorized Project Designee, or any technical consultant(s) used by the Offset Project Operator or Authorized Project Designee. For offset projects developed under the Compliance Offset Protocol in section 147.273(a)(2)(C)(1), the order of consecutive projects is determined by the project commencement dates. For this provision an offset project is defined by any activities reported in an Offset Project Data Report, and is applied to offset projects listed by the Offset Project Operator and Authorized Project Designee, if applicable.

(2) For reforestation offset projects developed under, and that meet the requirements of, the Compliance Offset Protocol in section 147.273(a)(2)(C)(4), and urban forest offset projects developed under, and that meet the requirements of, the Compliance Offset Protocol in section 147.273(a)(2)(C)(3), the following shall apply: An Offset Project Operator or Authorized Project Designee that has deferred the second verification for 6 to 12 years may have up to 13 Offset Project Data Reports verified by the same verification body and offset verification team member(s). If an Offset Project Operator or Authorized Project Designee has not deferred the second verification for more than 6 years, the requirements in section 147.277.1(a) for rotation of

verification bodies and offset verification team member(s) shall apply. An Offset Project Operator or Authorized Project Designee may contract with a previous verification body or offset verification team member(s) only if at least three consecutive Offset Project Data Reports for the offset project have been verified by a different verification body(ies) and offset verification team member(s) before the previous verification body and offset verification team member(s) is selected again. When rotating verification bodies and offset verification team members under this provision, the rotation requirements must also apply to any technical consultant(s) used by the Offset Project Operator or Authorized Project Designee, if applicable.

(b) Offset Verification Services. Offset Verification Services shall be subject to the following requirements.

(1) Notice of Offset Verification Services for Offset Projects. Before offset verification services, as defined in section 147.277.1(b)(3), may begin, the Offset Project Operator or Authorized Project Designee must submit the Offset Project Data Report to DEP or an Offset Project Registry, and the verification body must submit a Notice of Offset Verification Services to DEP and an Offset Project Registry, if applicable. The verification body may begin offset verification services for the Offset Project Operator or Authorized Project Designee 10 calendar days after the Notice for Offset Verification Services is received by DEP and the Offset Project Registry. The verification body may not conduct the site visit until at least 30 calendar days after the Notice for Offset Verification Services is received by DEP and the Offset Project Registry, or earlier, if the earlier site visit date is approved by DEP in writing. The Notice of Offset Verification Services must include the following information:

(A) The name of the offset project type, including the length of the offset project crediting period, and title of the Compliance Offset Protocol used to implement the offset project;

(B) A list of staff who will be designated to provide offset verification services as part of an offset verification team, including the names of each designated staff member, the lead verifier, independent reviewer, all subcontractors, and a description of the roles and responsibilities each team member will have during the offset verification process;

(C) Documentation that the offset verification team has the skills required to provide offset verification services for the Offset Project Operator or Authorized Project Designee. At

least one offset verification team member must be accredited by DEP as an offset project specific verifier for an offset project of that type; and

(D) General information on the Offset Project Operator or Authorized Project Designee, including:

1. The name of the Offset Project Operator or Authorized Project Designee, including contact information, address, telephone number, and email address;
2. The locations that will be subject to offset verification services;
3. The date(s) of on-site visits, with address and contact information; and
4. A brief description of expected offset verification services to be performed, including expected completion date.

(2) If any information submitted pursuant to sections 147.277.1(b)(1)(B) and 147.277.1(b)(1)(D) changes after the Notice for Offset Verification Services is submitted to DEP and the Offset Project Registry, if applicable, and before offset verification services begin, the verification body must notify DEP and the Offset Project Registry by submitting an updated Notice of Offset Verification Services as soon as the change is made, but, at least five working days prior to the start of offset verification services, unless otherwise approved by DEP in writing. If any information submitted pursuant to sections 147.277.1(b)(1)(B) and 147.277.1(b)(1)(D) changes during offset verification services, the verification body must notify DEP and the Offset Project Registry, if applicable, within 10 working days. In either instance, the Notice of Offset Verification Services must be resubmitted to DEP and the Offset Project Registry, as applicable. If DEP and the Offset Project Registry, if applicable, request revisions to the Notice of Offset Verification Services, the verification body must resubmit the revised Notice of Offset Verification Services within 10 working days of such request, or if there is a reason the verification body cannot submit the revisions within 10 working days, the verification body must communicate to DEP and the Offset Project Registry in writing as to the reasons why and get approval from the Offset Project Registry or DEP for an extension.

(3) Offset verification services must include the following:

(A) Offset Verification Plan. The Offset Project Operator or Authorized Project Designee must submit the following information necessary to develop an Offset Verification Plan to the offset verification team:

1. Information to allow the offset verification team to develop a general understanding of offset project boundaries, operations, project baseline emissions, and Reporting Period GHG reductions and GHG removal enhancements;
2. Information regarding the training or qualifications of personnel involved in developing the Offset Project Data Report;
3. The name and date of the Compliance Offset Protocol used to quantify and report project baselines, GHG reductions, GHG removal enhancements, and other required data as applicable in the Compliance Offset Protocol; and
4. Information about any data management system, offset project monitoring system, and models used to track project baselines, GHG reductions, GHG removal enhancements, and other required data as applicable in the Compliance Offset Protocol.

(B) Timing of Offset Verification Services. The Offset Verification Plan submitted pursuant to section 147.277.1(b)(3)(A) shall also include the following information:

1. Dates of proposed meetings and interviews with personnel related to the offset project;
2. Dates of proposed site visits;
3. Types of proposed document and data reviews; and
4. Expected date for completing offset verification services.

(C) Planning Meetings with the Offset Project Operator or Authorized Project Designee. The offset verification team must discuss with the Offset Project Operator or Authorized Project Designee the scope of the offset verification services and request any information and documents needed for initiating offset verification services. The offset verification team must review the documents submitted and plan and conduct a review of original documents and supporting data for the Offset Project Data Report. Information regarding planning meetings may be included in the offset verification plan, but is not required.

Any discussions or meetings to secure an offset verification services contract or collect preliminary project documents to bid the offset verification services may occur prior to submitting the Notice of Offset Verification Services pursuant to section 147.277.1(b)(1).

(D) Site Visits for Offset Projects. For a non-sequestration offset project, at least one accredited offset verifier in the offset verification team, including the offset project specific verifier, must make at least one site visit for each Reporting Period that an Offset Project Data Report is submitted, except for those non-sequestration offset projects for which the Offset Project Data Reports qualify for a two-year offset verification period pursuant to section 147.277(b). In this case, at least one offset verifier in the offset verification team, including the offset project specific verifier, must make a site visit each time offset verification services are performed; offset verification services for non-sequestration offset projects would include one or two Reporting Periods, depending on whether verification is eligible to be deferred pursuant to section 147.277(b). For projects using protocols in section 147.273(a)(2)(C)1, 2, or 3, if the project is no longer in operation and all destruction devices, metering and monitoring equipment has been removed, the site visit can occur at the offices of the Offset Project Operator, or Authorized Project Designee. Such a site visit cannot be used for reducing the invalidation timeframe in section 147.285. For a forest or urban forest offset project, at least one accredited offset verifier in the offset verification team, including the offset project specific verifier, must make a site visit every year that offset verification services are provided, except for those offset projects approved for less intensive verification, for which a site visit must be performed at least once every six years. A site visit is also required after the first Reporting Period of an offset project under a Compliance Offset Protocol and after the first Reporting Period for each renewed crediting period under a Compliance Offset Protocol. Any site visit performed under this section must be conducted after the Offset Project Operator or Authorized Project Designee submits its Offset Project Data Report to DEP or an Offset Project Registry. During the required verification, the offset verification team member(s) must conduct the following, and document or explain how each requirement was checked and fulfilled in the detailed verification report:

1. During the initial verification conducted following the first Reporting Period of the crediting period the offset verification team members must complete all of the following requirements, either during the required site visit or as part of a desk review:

- a. Assess offset project eligibility and that the offset project meets the requirements for additionality according to section 147.273 and the applicable Compliance Offset Protocol;
- b. Review the information submitted for listing pursuant to section 147.275 and determine if it is complete and accurate;
- c. Confirm that the offset project boundary is appropriately defined;
- d. Review project baseline calculations and modeling;
- e. Assess the operations, functionality, data control systems, and review GHG measurement and monitoring techniques; and
- f. Confirm that all applicable eligibility criteria to design, measure, establish the chain of custody, and monitor the offset project conforms to the requirements of the applicable Compliance Offset Protocol.
- g. All criteria pertaining to the eligibility of the offset project must be assessed during the first site visit in the first Reporting Period of each crediting period. All eligibility criteria must be met and are not subject to sampling. If any of the eligibility criteria are not met, the project would be ineligible for crediting and receive an Adverse Offset Verification Statement.

2. During the initial verification conducted following the first Reporting Period of the crediting period and each subsequent verification the offset verification team must complete all of the following requirements, either during the required site visit or as part of a desk review:

- a. Check that all offset project boundaries, GHG emissions sources, GHG sinks, and GHG reservoirs in the applicable Compliance Offset Protocol are identified appropriately;
- b. Review and understand the data management systems used by the Offset Project Operator or Authorized Project Designee to track, quantify, and report GHG reductions, GHG removal enhancements, or other data required as applicable in the Compliance Offset Protocol. This includes reviewing data collection processes and procedures, sampling techniques and metering accuracy, quality assurance/quality control processes and procedures, and missing data procedures. The offset verification team member(s) must evaluate the uncertainty and effectiveness of these systems;

- c. Interview key personnel involved in collecting offset project data and preparing the Offset Project Data Report;
- d. Make direct observations of equipment for data sources and equipment supplying data for GHG emission sources in the sampling plan determined to be high risk;
- e. Collect and review other information that, in the professional judgment of the team, is needed in the offset verification process;
- f. Confirm the offset project conforms with all local, state, or federal environmental regulatory requirements pursuant to section 147.273(b), including health and safety regulations; and
- g. Review all chain of custody documents as required in the Compliance Offset Protocol, if applicable.
- h. If the offset project is found by the offset verification team to not meet the requirements of section 147.277.1(b)(3)(D)(2)f, the offset project is ineligible to receive DEP offset credits or registry offset credits for some or all GHG reductions and GHG removal enhancements quantified and reported in the Offset Project Data Report.

(E) The offset verification team must review offset project operations to identify applicable GHG emissions sources, project emissions, GHG sinks, and GHG reservoirs required to be included and quantified in the Offset Project Data Report as required by the applicable Compliance Offset Protocol. This must include a review of each type of GHG emissions source, GHG sink, and GHG reservoir to ensure that all GHG emissions sources, GHG sinks, and GHG reservoirs required to be reported for the offset project are properly included in the Offset Project Data Report.

(F) An Offset Project Operator or Authorized Project Designee must make available to the offset verification team all information and documentation used to calculate and report project baseline and project GHG emissions, GHG reductions, and GHG removal enhancements and other information required by the applicable Compliance Offset Protocol.

(G) Sampling Plan for Offset Project Data Reports. As part of confirming the Offset Project Data Report, the offset verification team must develop a sampling plan that meets the following requirements:

1. The offset verification team must develop a sampling plan based on a strategic analysis developed from document reviews and interviews to assess the likely nature, scale, and complexity of the offset verification services for an Offset Project Operator or Authorized Project Designee. The analysis must review the inputs for the development of the submitted Offset Project Data Report, the rigor and appropriateness of the GHG data management systems, and the coordination within an Offset Project Operator's or Authorized Project Designee's organization to manage the operation and maintenance of equipment and systems used to develop the Offset Project Data Reports;

2. The offset verification team must include a ranking of GHG emissions sources, GHG sinks, and GHG reservoirs within the offset project boundary by amount of contribution to total CO_{2e} emissions, GHG reductions, and GHG removal enhancements, and a ranking of GHG emissions sources, GHG sinks, or GHG reservoirs with the largest calculation uncertainty; and

3. The offset verification team must include a qualitative narrative of uncertainty risk assessment in the following areas as applicable to the Compliance Offset Protocol:

- a. Data acquisition equipment;
- b. Data sampling and frequency;
- c. Data processing and tracking;
- d. Project baseline and project GHG emissions, GHG reductions, and GHG removal enhancement calculations;
- e. Data reporting; and
- f. Management policies or practices in developing Offset Project Data Reports.

(H) After completing the analysis in section 147.277.1(b)(3)(G), the offset verification team must include in the sampling plan a list which includes the following:

1. GHG emissions sources, GHG sinks, and GHG reservoirs that will be targeted for document reviews to ensure conformance with the Compliance Offset Protocol and data checks as specified in section 147.277.1(b)(3)(L) and an explanation of why they were chosen;

2. Methods used to conduct data checks for each GHG emissions source, GHG sink, and GHG reservoir; and

3. A summary of the information analyzed in the data checks and document reviews conducted for each GHG emissions source, GHG sink, and GHG reservoir.

(I) The sampling plan list, prepared pursuant to section 147.277.1(b)(3)(H), must be updated and finalized prior to the completion of offset verification services. The final sampling plan must describe in detail how the GHG emissions sources, GHG sinks, and GHG reservoirs with identified risk, subject to data checks, were reviewed for accuracy.

(J) The offset verification team must revise the sampling plan to describe tasks completed or needed to be completed by the offset verification team as relevant information becomes available and potential issues emerge of offset material misstatement or nonconformance with the requirements of the Compliance Offset Protocol and this article.

(K) The verification body must retain the sampling plan in paper, electronic, or other format for a period of not less than 15 years following the submission of each Offset Verification Statement. The sampling plan must be made available at any time during offset verification services to DEP or the Offset Project Registry within 10 calendar days upon request. The verification body must also retain all material received, reviewed, or generated to render an Offset Verification Statement for an Offset Project Operator or Authorized Project Designee for 15 years following the submittal of each Offset Verification Statement. The documentation must allow for a transparent review of how a verification body reached its conclusion in the detailed verification report and Offset Verification Statement.

(L) Data Checks for Offset Project Data Reports. To determine the reliability of the submitted Offset Project Data Report, the offset verification team must use data checks. Such data checks must focus first on the largest and most uncertain estimates of project baseline GHG emissions, project emissions, GHG reductions, and GHG removal enhancements, and the offset verification team must:

1. Use data checks to ensure that the appropriate methodologies and GHG emission factors have been applied in calculating the project baseline and Reporting Period GHG emissions, project emissions, GHG reductions, and GHG removal enhancements calculations in the Compliance Offset Protocol;

2. Choose GHG emissions sources, project emissions, GHG sinks, and GHG reservoirs for data checks based on their relative sizes and risks of offset material misstatement or nonconformance as indicated in the sampling plan;

3. Use professional judgment in the number of data checks required for the offset verification team to conclude with reasonable assurance whether the Offset Project Operator's or Authorized Project Designee's total reported GHG reductions and GHG removal enhancements are free of offset material misstatement and the Offset Project Data Report otherwise conforms to the requirements of the Compliance Offset Protocol and this article. At a minimum a data check must include the following:

- a. Tracing data in the Offset Project Data Report to its origin;
- b. Looking at the process for data compilation and collection;
- c. Reviewing all GHG inventory designs for GHG sources, GHG sinks, and GHG reservoirs, and sampling procedures, if applicable;
- d. Recalculating baseline GHG emissions, project emissions, GHG reductions, and GHG removal enhancements estimates to check original calculations;
- e. Reviewing calculation methodologies used by the Offset Project Operator or Authorized Project Designee for conformance with the Compliance Offset Protocol and this article;
- f. Reviewing meter and fuel analytical instrumentation calibration, if applicable; and
- g. Reviewing the quantification from models approved for use in the Compliance Offset Protocol, if applicable; and

4. Compare its own calculated results for the data checks conducted with the reported offset project data in order to confirm the extent and impact of any omissions and errors. Any discrepancies must be identified in the issues log. The comparison of data checks must also include a narrative to indicate which GHG emissions sources, GHG sinks, and GHG reservoirs were checked, the types and quantity of data that were evaluated for each GHG emissions source, GHG sink, and GHG reservoir, how the data checks were conducted including calculations, and any discrepancies that were identified.

(M) Offset Project Data Report Modifications. As a result of review by the offset verification team and prior to completion of an Offset Verification Statement, the Offset Project Operator or Authorized Project Designee must make any possible improvements and fix any correctable errors to the submitted Offset Project Data Report, and a revised Offset Project Data Report must be submitted to DEP or the Offset Project Registry. The revised Offset Project Data Report must include all components required in section 147.276(d). If the Offset Project Operator or Authorized Project Designee does not make all possible improvements and fix any correctable errors to the Offset Project Data Report, the verification body must issue an Adverse Offset Verification Statement. The offset verification team shall use professional judgment in the determination of correctable errors, including whether differences are not errors but result from truncation or rounding. The offset verification team must document in the issues log the source of any difference identified, including whether the difference results in a correctable error. Documentation for all Offset Project Data Report submittals must be retained by the Offset Project Operator or Authorized Project Designee for the length of time specified in section 147.276(e)(2).

(N) To verify that the Offset Project Data Report is free of offset material misstatement, the offset verification team must make its own determination of GHG reductions or GHG removal enhancements relative to the project baseline using the data check conducted pursuant to section 147.277.1(b)(3)(L), and must determine whether there is reasonable assurance that the Offset Project Data Report does not contain an offset material misstatement for the Offset Project Operator or Authorized Project Designee, on a CO₂e basis. To assess conformance with this article and the Compliance Offset Protocol the offset verification team must review the methods and factors used to develop the Offset Project Data Report for adherence to the requirements of this article and the Compliance Offset Protocol and ensure that other requirements of this article are met.

(O) Issues Log. The offset verification team must keep a log of any issues identified in the course of offset verification services that may affect determinations of offset material misstatement and nonconformance. The issues log must identify the section of this article or Compliance Offset Protocol related to the nonconformance, if applicable, and indicate whether the issues were corrected by the Offset Project Operator or Authorized Project Designee prior to completing the offset verification services. Any other concerns that the offset verification team

has with the preparation of the Offset Project Data Report must be documented in the issues log. The issues log must indicate whether the issues could have any bearing on offset material misstatement or conformance.

(P) An assessment of offset material misstatement is conducted for net GHG reductions and GHG removal enhancements achieved in a given Reporting Period relative to the project baseline in that Reporting Period in metric tons of CO₂e.

(Q) The offset verification team must determine whether the GHG reductions and GHG removal enhancements quantified and reported in the Offset Project Data Report contain an offset material misstatement using the following equation:

$$\text{Percent error} = \frac{[\sum \text{Discrepancies} + \sum \text{Omissions} + \sum \text{Misreporting}] \times 100\%}{\text{Total Reported Emission Reductions and Removal Enhancements}}$$

Where:

“Discrepancies” means any differences between the reported GHG value for sources, sinks, and reservoirs for the project baseline or project, and the verifier calculated GHG value for a data source subject to data checks in 147.277.1(b)(3)(L) calculated by the offset verification team. Any discrepancies identified must include the positive or negative impact of the GHG source, sink, or reservoir on the total reported GHG emission reductions and removal enhancements when input into the offset material misstatement equation.

“Omissions” means any GHG emissions or removal enhancements associated with required sources, sinks, and reservoirs for the project baseline or project emissions, that the offset verification team concludes must be part of the Offset Project Data Report, but were not included by the Offset Project Operator or Authorized Project Designee in the Offset Project Data Report. Any omissions found by the offset verification team must include the positive or negative impact of the omission on the total reported GHG emission reductions and removal enhancements when input into the offset material misstatement equation.

“Misreporting” means duplicative, incomplete, or other GHG emissions or removal enhancements for required sources, sinks, and reservoirs in the project baseline or project emissions, the offset verification team concludes should, or should not, be part of the Offset Project Data Report. Any misreporting found by the offset verification team must include the

positive or negative impact of the misreporting on the total reported GHG emission reductions and removal enhancements when input into the offset material misstatement equation.

“Total reported emission reductions and removal enhancements” means net GHG reductions and GHG removal enhancements reported by the Offset Project Operator or Authorized Project Designee for an Offset Project Data Report relative to the project baseline for that Offset Project Data Report in metric tons CO_{2e}.

(R) Offset verification services are not complete until DEP offset credits are issued for the GHG emission reductions and GHG removal enhancements reported in an Offset Project Data Report. Offset verification services must include:

1. Offset Verification Statement. Prior to completion of the offset verification services conducted pursuant to section 147.277.1(b)(3), the verification body must complete an Offset Verification Statement for each Offset Project Data Report for which offset verification services were conducted and provide it to the Offset Project Operator or Authorized Project Designee and DEP or the Offset Project Registry by the verification deadline pursuant to section 147.277(d). Before the Offset Verification Statement is completed, the verification body must have the offset verification services and findings of the offset verification team independently reviewed within the verification body by an independent reviewer not involved in offset verification services for that offset project. The independent reviewer may not be the offset project specific verifier, and may not accompany the offset verification team on a site visit. The independent reviewer may conduct a separate site visit, if necessary.

2. The independent reviewer shall serve as the final check of the offset verification team’s work to identify any significant concerns, including:

- a. Errors in planning;
- b. Errors in data sampling; and
- c. Errors in judgment by the offset verification team that are related to the draft offset verification statement.

3. The independent reviewer must maintain independence from the offset verification services by not making specific recommendations about how the offset verification services should be conducted. The independent reviewer will review documents applicable to the

offset verification services provided and identify any failure to comply with the requirements of this article or with the verification body's internal policies and procedures for providing offset verification services. The independent reviewer must concur with the offset verification findings before the Offset Verification Statement can be issued.

4. When the offset verification team completes its findings:

a. The verification body must provide to the Offset Project Operator or Authorized Project Designee a detailed verification report for each Offset Project Data Report for which offset verification services were conducted. The detailed verification report must at a minimum include the Offset Verification Plan, the detailed comparison of the data checks conducted during offset verification services pursuant to section 147.277.1(b)(3)(L), including the required narrative, the issues log identified in the course of offset verification activities and the issue resolutions, and any qualifying comments on findings during offset verification services. The detailed verification report must also include the calculations performed in 147.277.1(b)(3)(Q) with enough detail to understand the relationships between the data checks and the offset material misstatement evaluation, and be made available to DEP within 10 calendar days upon request. If the Offset Verification Statement is being submitted to an Offset Project Registry, then the verification body must submit the detailed verification report to the Offset Project Registry with the Offset Verification Statement. The detailed verification report must be submitted to the Offset Project Operator or Authorized Project Designee at the same time or before the Offset Verification Statement is submitted to DEP or the Offset Project Registry.

b. The verification body must provide the Offset Verification Statement to the Offset Project Operator or Authorized Project Designee and DEP or the Offset Project Registry, attesting to DEP whether the verification body has found the submitted Offset Project Data Report to be free of offset material misstatement, and whether the Offset Project Data Report is in conformance with the requirements of this article and the Compliance Offset Protocol.

c. A Compliance Offset Protocol may restrict the use of a Qualified Positive Offset Verification Statement for certain project types, in which case the verification body must submit either a Positive Offset Verification Statement or an Adverse Offset Verification Statement. In the case of a Qualified Positive Offset Verification Statement, when not restricted by a Compliance Offset Protocol, the verification body will qualify the Offset Verification Statement

to indicate any nonconformances allowed for a qualified Positive Offset Verification Statement as defined in section 147.002 contained within the Offset Project Data Report and that these nonconformances do not result in an offset material misstatement.

d. The offset verification team must have a final discussion with the Offset Project Operator or Authorized Project Designee explaining their findings and notifying the Offset Project Operator or Authorized Project Designee of any unresolved issues noted in the issues log before the Offset Verification Statement is finalized and submitted to the Offset Project Registry or DEP.

e. The lead verifier in the offset verification team must attest to DEP in the Offset Verification Statement that the offset verification team has carried out all offset verification services as required by this article, and the lead verifier who has conducted the independent review of offset verification services and findings must attest to his or her independent review on behalf of the verification body and his or her concurrence with the offset verification findings.

f. The lead verifier must attest in the Offset Verification Statement, in writing, to DEP as follows:

“I certify under penalty of perjury under the laws of the Commonwealth of Pennsylvania that the offset verification team has carried out all offset verification services as required by sections 147.277.1, 147.277.2, and the applicable Compliance Offset Protocol and the findings are true, accurate, and complete and have been independently reviewed by an independent reviewer as required under sections 147.277.1(b)(3)(R)(1.) through 147.277.1(b)(3)(R)(3.).”

5. Prior to the verification body providing an Adverse Offset Verification Statement to DEP or the Offset Project Registry, the Offset Project Operator or Authorized Project Designee must be provided at least 10 working days to modify the Offset Project Data Report to correct any offset material misstatement or nonconformance found by the offset verification team. The modified Offset Project Data Report and Offset Verification Statement must be submitted to DEP or the Offset Project Registry by the applicable verification deadline, unless the Offset Project Operator or Authorized Project Designee makes a request to DEP pursuant to section 147.277.1(b)(3)(R)(6.).

6. If the Offset Project Operator or Authorized Project Designee and the verification body cannot reach agreement on modifications to the Offset Project Data Report that result in a Positive Offset or Qualified Positive Offset Verification Statement due to a disagreement on the requirements of this article or Compliance Offset Protocol, the Offset Project Operator or Authorized Project Designee may petition DEP to make a decision as to the verifiability of the submitted Offset Project Data Report.

7. If DEP determines that the Offset Project Data Report does not meet the standards and requirements specified in this article, the Offset Project Operator or Authorized Project Designee must provide any additional information within 30 calendar days of the DEP determination. DEP will review the new information and notify the Offset Project Operator or Authorized Project Designee and verification body of its final decision. In re-verifying a revised Offset Project Data Report, the verification body and offset verification team shall be subject to the requirements in sections 147.277.1(b)(3)(R)1. through 147.277.1(b)(3)(R)4. and must submit the revised Offset Verification Statement to DEP or the Offset Project Registry within 15 calendar days.

8. If DEP or the Offset Project Registry determines that the detailed verification report required pursuant to 147.277.1(b)(3)(R)4.a does not contain sufficient information to substantiate the attestations in the Offset Verification Statement, then the verification body must submit a revised verification report and a revised Offset Verification Statement to DEP or the Offset Project Registry within 15 calendar days of the determination.

(S) Upon submission of the Offset Verification Statement to DEP or the Offset Project Registry, the Offset Project Data Report must be considered final and no further changes may be made by the Offset Project Operator or Authorized Project Designee unless the Offset Project Registry or DEP requests any changes as part of their review. Once DEP offset credits are issued for the Offset Project Data Report, all offset verification requirements of this article shall be considered complete for the applicable Offset Project Data Report.

(T) If the Department finds a high level of conflict of interest existed between a verification body and an Offset Project Operator or Authorized Project Designee pursuant to section 147.279(b)(4) and section 147.279(b)(5), or an Offset Project Data Report that received a Positive Offset or Qualified Positive Offset Verification Statement fails an DEP audit, the

Secretary may set aside the Positive Offset or Qualified Positive Offset Verification Statement submitted by the verification body and require the Offset Project Operator or Authorized Project designee to have the Offset Project Data Report re-verified by a different verification body within 90 calendar days of this finding.

(U) Upon request by DEP or the Offset Project Registry, the Offset Project Operator or Authorized Project Designee must provide the data used to generate an Offset Project Data Report, including all data available to the offset verification team in the conduct of offset verification services, within 10 working days of the request.

(V) Upon request by DEP or the Offset Project Registry the verification body must provide DEP or the Offset Project Registry the detailed verification report given to the Offset Project Operator or Authorized Project Designee, as well as the sampling plan, contracts for offset verification services, and any other supporting documentation. All documentation must be provided by the verification body to DEP or the Offset Project Registry within 10 working days of the request.

(W) Upon written notification by DEP the verification body and its staff must be available for an offset verification services audit when providing offset verification services for an offset project listed with DEP or an Offset Project Registry using a Compliance Offset Protocol.

§ 147.277.2. Additional Project Specific Requirements for Offset Verification Services.

In addition to meeting the offset verification requirements in sections 147.277 and 147.277.1, Offset Project Operators or Authorized Project Designees must ensure the GHG emission reductions and GHG removal enhancements resulting from an offset project meet any additional verification requirements in the Compliance Offset Protocol, if applicable, for an offset project of that type.

§ 147.278. Offset Verifier and Verification Body Accreditation.

(a) An offset verifier or verification body must meet the accreditation requirements of the MRR to provide offset verification services to verify GHG emission reductions and GHG removal enhancements for offset projects listed pursuant to this article. Accreditation of

verification bodies and offset verifiers for verifying Offset Project Data Reports under this article must be achieved separately from accreditation for verifying reports submitted under the MRR.

(b) For purposes of this article, the subcontractor requirements of the MRR must be applied to the Offset Project Operator and/or Authorized Project Designee and not a reporting entity.

(c) A DEP accredited verification body must make itself and its personnel available for a DEP audit.

(d) A DEP-accredited offset verification body may employ or contract with technical experts not accredited by DEP to assist with offset verification services.

(1) All technical experts must be listed on the Notice of Offset Verification Services as required in section 147.277.1(b) and must be included in the evaluation for conflict of interest as required in section 147.279.

(2) Technical experts must be under the direct supervision of a DEP-accredited offset verifier while performing verification activities.

(3) Technical experts may assist in underlying offset verification tasks but may not be responsible for completing any offset verification services as defined in 147.002(a).

(e) “Direct supervision,” for purposes of this section, means daily, on-site, close contact with an DEP-accredited verifier acting as a supervisor to a technical expert during a site visit, who is able to respond to the needs of the technical expert. During a site visit, the supervisor must be physically present, or within 4 hours travel time and available to respond to the needs of the technical expert.

(f) “Technical expert,” for purposes of this section, means a person, who is not an DEP-accredited verifier, and has demonstrated expertise in a particular technical area for which the person hired by the verification body to assist with underlying offset verification task(s) that require a particular expertise. A technical expert may be an employee of the verification body working to get the required experience to become an DEP-accredited verifier.

§ 147.279. Conflict of Interest Requirements for Verification Bodies and Offset Verifiers for Verification of Offset Project Data Reports.

(a) The conflict of interest provisions of this section shall apply to verification bodies, lead verifiers, and offset verifiers accredited by DEP to perform offset verification services for Offset Project Operators, and Authorized Project Designees, if applicable, as well as any other member of the offset verification team and any technical consultant(s) used by the Offset Project Operator or Authorized Project Designee, if applicable.

(b) “Member” for the purposes of this section means any employee or subcontractor of the verification body or related entities of the verification body. “Member” also includes any individual with majority equity share in the verification body or its related entities. “Related entity” for the purposes of this section means any direct parent company, direct subsidiary, or sister company. The potential for a conflict of interest must be deemed to be high where:

(1) The verification body and Offset Project Operator, Authorized Project Designee, if applicable, and their technical consultant(s) share any senior management staff or board of directors membership, or any of the senior management staff of the Offset Project Operator, Authorized Project Designee, if applicable, and their technical consultant(s) have been employed by the verification body, or vice versa, within the previous three years; or

(2) Within the previous five years, any staff member of the verification body or any related entity or any member of the offset verification team has provided to the Offset Project Operator, Authorized Project Designee, if applicable, and their technical consultant(s) any of the following non-offset verification services:

(A) Designing, developing, implementing, reviewing, or maintaining an inventory or offset project information or data management system for air emissions, unless the review was part of providing GHG offset verification services;

(B) Developing GHG emission factors or other GHG-related engineering analysis;

(C) Designing energy efficiency, renewable power, or other projects which explicitly identify GHG reductions and GHG removal enhancements as a benefit;

(D) Designing, developing, implementing, internally auditing, consulting, or maintaining an offset project resulting in GHG emission reductions and GHG removal enhancements;

(E) Owning, buying, selling, trading, or retiring shares, stocks, or DEP offset credits or registry offset credits from the offset project;

(F) Dealing in or being a promoter of DEP offset credits or registry offset credits on behalf of an Offset Project Operator, Authorized Project Designee, if applicable, and their technical consultant(s);

(G) Preparing or producing GHG-related manuals, handbooks, or procedures specifically for the Offset Project Operator, Authorized Project Designee, if applicable, and their technical consultant(s);

(H) Appraisal services of carbon or GHG liabilities or assets;

(I) Brokering in, advising on, or assisting in any way in carbon or GHG-related markets;

(J) Directly managing any health, environment or safety functions for the Offset Project Operator, Authorized Project Designee, if applicable, and their technical consultant(s);

(K) Bookkeeping or other services related to the accounting records or financial statements;

(L) Any service related to information systems, including International Organization for Standardization 14001 Certification for Environmental Management (ISO 14001 Certification), unless those systems will not be reviewed as part of the offset verification process;

(M) Appraisal and valuation services, both tangible and intangible;

(N) Fairness opinions and contribution-in-kind reports in which the verification body has provided its opinion on the adequacy of consideration in a transaction, unless the information reviewed in formulating the Offset Verification Statement will not be reviewed as part of the offset verification services;

(O) Any actuarially oriented advisory service involving the determination of amounts recorded in financial statements and related accounts;

(P) Any internal audit service that has been outsourced by the Offset Project Operator, Authorized Project Designee, if applicable, and their technical consultant(s) that relates to the Offset Project Operator's, Authorized Project Designee's, if applicable, and their technical

consultant(s) internal accounting controls, financial systems, or financial statements, unless the systems and data reviewed during those services, as well as the result of those services will not be part of the offset verification process;

(Q) Acting as a broker-dealer (registered or unregistered), promoter, or underwriter on behalf of the Offset Project Operator, Authorized Project Designee, if applicable, and their technical consultant(s);

(R) Any legal or expert services to the Offset Project Operator, Authorized Project Designee, if applicable, and their technical consultant(s) or a legal representative for the purpose of a financing involving the Offset Project or advocating the Offset Project Operator's, Authorized Project Designee's, if applicable, and their technical consultant(s) interests in litigation or in a regulatory or administrative proceeding or investigation, unless providing factual testimony.

(3) Within the previous three years, any staff member of the verification body or any related entity or any member of the offset verification team has provided to the ozone depleting substances destruction facility a third-party certification of a facility to meet the requirements set forth by the United Nations Environment Programme Ozone Secretariat's Technology and Assessment Panel (TEAP) for ozone depleting substances destruction.

(4) The potential for conflict of interest will be deemed to be high when any member of the verification body provides any type of incentive to an Offset Project Operator, Authorized Project Designee, if applicable, and their technical consultant(s) to secure an offset verification services contract.

(5) The potential for a conflict of interest will also be deemed to be high where any member of the verification body has provided offset verification services for the Offset Project Operator, Authorized Project Designee, if applicable, and their technical consultant(s) except within the time periods in which the Offset Project Operator, Authorized Project Designee, if applicable, and their technical consultant(s) is allowed to use the same verification body as specified in section 147.277.1(a).

(c) The potential for a conflict of interest must be deemed to be low where no potential for a conflict of interest is found under section 147.279(b) and any non-offset

verification services provided by any member of the verification body to the Offset Project Operator, Authorized Project Designee, if applicable, and any technical consultant(s) used by the Offset Project Operator or Authorized Project Designee within the last five years are valued at less than 20 percent of the fee for the proposed offset verification, except where medium conflict of interest related to personal, employment, or family relationships is identified pursuant to section 147.279(d).

(d) The potential for a conflict of interest must be deemed to be medium where the potential for a conflict of interest is not deemed to be either high or low as specified in sections 147.279(b) and 147.279(c), or where there are any instances of personal, employment, or familial relationships between the verification body and management or employees of the Offset Project Operator or Authorized Project Designee, if applicable, and any technical consultant(s) used by the Offset Project Operator or Authorized Project Designee and when a conflict of interest self-evaluation is submitted pursuant to section 147.279(g). For purposes of section 147.279 only, “employment” means the condition of having paid work documented in a W-2 form. If a verification body identifies a medium potential for conflict of interest and intends to provide offset verification services for the Offset Project Operator, Authorized Project Designee, if applicable, and any technical consultant(s) used by the Offset Project Operator or Authorized Project Designee for an offset project listed with DEP or an Offset Project Registry, the verification body must submit, in addition to the submittal requirements specified in section 147.279(e), a plan to avoid, neutralize, or mitigate the potential conflict of interest situation. At a minimum, the conflict of interest mitigation plan must include:

(1) A demonstration that any members with potential conflicts have been removed and insulated from the project;

(2) An explanation of any changes to the organizational structure or verification body to remove the potential conflict of interest. A demonstration that any unit with potential conflicts has been divested or moved into an independent entity or any subcontractor with potential conflicts has been removed; and

(3) Any other circumstance that specifically addresses other sources for potential conflict of interest.

(e) Conflict of Interest Submittal Requirements for Accredited Verification Bodies. Before providing any offset verification services, the verification body must submit to the Offset Project Operator, and Authorized Project Designee, if applicable, DEP and the Offset Project Registry, a self-evaluation of the potential for any conflict of interest that the verification body, its staff, its related entities, or any subcontractors performing offset verification services may have with the Offset Project Operator, Authorized Project Designee, if applicable, and their technical consultant(s) for which it will perform offset verification services. Offset verification services shall not commence prior to approval of the conflict of interest self-evaluation by DEP or the Offset Project Registry pursuant to section 147.279(f). The submittal must include the following:

(1) Identification of whether the potential for conflict of interest is high, low, or medium based on factors specified in sections 147.279(b), (c), and (d);

(2) Identification of whether any member of the offset verification team has previously provided offset verification services for the Offset Project Operator, Authorized Project Designee, if applicable, and their technical consultant(s), and, if so, the years in which such offset verification services were provided; and

(3) Identification of whether any member of the offset verification team or related entity has engaged in any non-offset verification services of any nature with the Offset Project Operator, Authorized Project Designee, if applicable, and their technical consultant(s) either within or outside Pennsylvania during the previous five years. If non-offset verification services have previously been provided, the following information must also be submitted:

(A) Identification of the nature and location of the work performed for the Offset Project Operator, Authorized Project Designee, if applicable, and their technical consultant(s) and whether the work is similar to the type of work to be performed during offset verification;

(B) The nature of past, present, or future relationships with the Offset Project Operator, Authorized Project Designee, if applicable, and their technical consultant(s), including:

1. Instances when any member of the offset verification team has performed or intends to perform work for the Offset Project Operator, Authorized Project Designee, if applicable, and their technical consultant(s);

2. Identification of whether work is currently being performed for the Offset Project Operator, Authorized Project Designee, if applicable, and their technical consultant(s), and if so, the nature of the work;

3. How much work was performed for the Offset Project Operator, Authorized Project Designee, if applicable, and their technical consultant(s) in the last five years, in dollars;

4. Whether any member of the offset verification team has any contracts or other arrangements to perform work for the Offset Project Operator, Authorized Project Designee, if applicable, and their technical consultant(s) or a related entity; and

5. How much work related to GHG reductions and GHG removal enhancements the offset verification team has performed for the Offset Project Operator, Authorized Project Designee, if applicable, and their technical consultant(s) or related entities in the last five years, in dollars;

(C) Explanation of how the amount and nature of work previously performed is such that any member of the offset verification team's credibility and lack of bias should not be under question;

(D) A list of names of the staff that would perform offset verification services for the Offset Project Operator, and Authorized Project Designee, if applicable, and a description of any instances of personal, employment, or family relationships with management or employees of the Offset Project Operator, Authorized Project Designee, if applicable, and their technical consultant(s) that potentially represent a conflict of interest;

(E) Identification of any other circumstances known to the verification body, or Offset Project Operator, Authorized Project Designee, if applicable, and their technical consultant(s) that could result in a conflict of interest; and

(F) Attest, in writing, to DEP as follows:

"I certify under penalty of perjury of the laws of the Commonwealth of Pennsylvania the information provided in the Conflict of Interest submittal is true, accurate, and complete."

(f) Approval of Conflict of Interest Submittals. DEP or the Offset Project Registry must review the self-evaluation submitted by the verification body and determine whether the

verification body is authorized to perform the offset verification services for the Offset Project Operator and Authorized Project Designee, if applicable.

(1) DEP or the Offset Project Registry has 30 calendar days to make a determination whether to accept or deny the conflict of interest submittal and notify the verification body whether it may proceed with the offset verification services for the Offset Project Operator and Authorized Project Designee, if applicable.

(A) If DEP or an Offset Project Registry requests revisions to the conflict of interest self evaluation prior to approval, the verification body must resubmit the revised conflict of interest self evaluation within 10 working days of such request, or if there is a reason the verification body cannot submit the revisions within 10 working days, the verification body must communicate to DEP and the Offset Project Registry, in writing, as to the reasons why and get approval from DEP or the Offset Project Registry for an extension.

(B) If DEP or the Offset Project Registry determines that the verification body or any member of the offset verification team meets the criteria in section 147.279(b), DEP or the Offset Project Registry shall find a high potential conflict of interest and offset verification services may not proceed.

(C) If DEP or the Offset Project Registry determines that there is a low potential conflict of interest, offset verification services may proceed.

(D) If DEP or the Offset Project Registry determines that the verification body or any member of the offset verification team have a medium potential for conflict of interest, DEP or the Offset Project Registry shall evaluate the conflict of interest mitigation plan submitted by the verification body pursuant to section 147.279(d) and may request additional information from the applicant to complete the determination. In determining whether offset verification services may proceed, DEP or the Offset Project Registry may consider factors including, but not limited to, the nature of previous work performed, the current and past relationships between the verification body, related entities, and its subcontractors with the Offset Project Operator and Authorized Project Designee, if applicable, and any technical consultant(s) used by the Offset Project Operator or Authorized Project Designee, and related entities, and the cost of the offset verification services to be performed. If DEP or the Offset Project Registry determines that these factors when considered in combination demonstrate an acceptable level of potential conflict of

interest, DEP or the Offset Project Registry will authorize the verification body to provide offset verification services.

(2) If the offset project was listed with an Offset Project Registry, the conflict of interest self-evaluation acceptance or denial notification will be given by the Offset Project Registry.

(g) Monitoring Conflict of Interest Situations.

(1) After commencement of offset verification services, the verification body must monitor and immediately make full disclosure, in writing, to DEP and the Offset Project Registry regarding any potential for a conflict of interest situation that arises for an offset project using a Compliance Offset Protocol. This disclosure must include a description of actions that the verification body has taken or proposes to take to avoid, neutralize, or mitigate the potential for a conflict of interest.

(2) The verification body must continue to monitor arrangements or relationships that may be present for a period of one year after the completion of offset verification services for an offset project using a Compliance Offset Protocol. During that period, within 30 days of the verification body or any verification team member entering into any contract with the Offset Project Operator, and Authorized Project Designee, if applicable, for which the verification body has provided offset verification services, the verification body must notify DEP and the Offset Project Registry of the contract and the nature of the work to be performed. DEP or the Offset Project Registry, within 30 working days, will determine the level of conflict using the criteria in sections 147.279(a) through (d), if the Offset Project Operator, and Authorized Project Designee, if applicable, must re-verify their Offset Project Data Report, and if accreditation revocation is warranted by DEP.

(3) The verification body must notify DEP and the Offset Project Registry within 30 calendar days, of any emerging conflicts of interest during the time offset verification services are being provided for an offset project using a Compliance Offset Protocol.

(A) If DEP or the Offset Project Registry determines that an emerging potential conflict disclosed by the verification body is medium risk, and this risk can be mitigated, then the verification body meets the conflict of interest requirements to continue to provide offset

verification services for the Offset Project Operator, and Authorized Project Designee, if applicable, and will not be subject to suspension or revocation of accreditation as specified in section 95132(d) of MRR.

(B) If DEP or the Offset Project Registry determines that an emerging potential conflict disclosed by the verification body is medium or high risk, and this risk cannot be mitigated, then the verification body will not be able to continue to provide offset verification services for the Offset Project Operator, and Authorized Project Designee, if applicable, and may be subject to the suspension or revocation of accreditation by DEP under section 95132(d) of MRR.

(4) The verification body must report to DEP and the Offset Project Registry, if applicable, any changes in its organizational structure, including mergers, acquisitions, or divestitures, for one year after completion of offset verification services.

(5) DEP may void a Positive Offset or Qualified Positive Offset Verification Statement received in section 147.281 if it discovers a potential conflict of interest has arisen for any member of the offset verification team. In such a case, the Offset Project Operator, and Authorized Project Designee, if applicable, shall be provided 90 calendar days to complete re-verification.

(6) If the verification body or its subcontractor(s) are found to have violated the conflict of interest requirements of this article, the Secretary may rescind accreditation of the body, its verifier staff, or its subcontractor(s) for any appropriate period of time as provided in section 95132(d) of MRR.

(h) Specific Requirements for Jurisdictions with Approved Air Pollution Control Programs.

(1) If a jurisdiction with an approved air pollution control program has provided or is providing any services listed in section 147.279(b)(2) as part of its regulatory duties, those services do not constitute non-verification services or a potential for high conflict of interest for purposes of this article;

(2) Before providing offset verification services, a jurisdiction with an approved air pollution control program must submit a conflict of interest self-evaluation pursuant to

147.279(e) for each Offset Project Operator, and Authorized Project Designee, if applicable, for which it intends to provide offset verification services. As part of its conflict of interest self-evaluation submittal under section 147.279(e), the jurisdiction with an approved air pollution control program shall certify that it will prevent conflicts of interests and resolve potential conflict of interest situations pursuant to its policies and mechanisms submitted under section 95132(b)(1)(G) of MRR;

(3) If a jurisdiction with an approved air pollution control program hires a subcontractor who is not an employee to provide offset verification services, the air district shall be subject to all of the requirements of section 147.279.

§ 147.279.1 Additional Requirements for Jurisdictions with Approved Air Pollution Control Programs.

(a) The following requirements will apply to municipalities with approved air pollution programs that meet the requirements under section 147.278 to become accredited as an offset verification body and/or the requirements under section 147.286 to meet the requirements as an approved Offset Project Registry:

(1) The jurisdiction may:

(A) Register with DEP pursuant to section 147.130; and

(B) Hold compliance instruments as a voluntarily associated entity pursuant to section 147.114.

(2) The jurisdiction may not:

(A) Be an Offset Project Operator or Authorized Project Designee for any offset project for which it provides offset verification services pursuant to sections 147.277, 147.277.1, and 147.277.2, and for which the air district will subsequently request the issuance of DEP offset credits pursuant to section 147.281;

(B) Be an Offset Project Operator or Authorized Project Designee for any offset project for which it provides registry services pursuant to section 147.287, and for which the air district will subsequently request the issuance of DEP offset credits pursuant to section 147.281; and

(C) Be an offset verification body for any offset project developed using a Compliance Offset Protocol for which it would provide registry services pursuant to section 147.287.

§ 147.280. Issuance of Registry Offset Credits.

(a) One registry offset credit, which represents one metric ton of CO₂e for a direct GHG emission reduction or direct GHG removal enhancement, will be issued pursuant to section 147.280.1 only if:

(1) An Offset Project Registry has listed the offset project pursuant to section 147.275;

(2) The GHG emission reductions or GHG removal enhancements were issued a Positive Offset or Qualified Positive Offset Verification Statement pursuant to section 147.277.1 and 147.277.2; and

(3) An Offset Project Registry has received a Positive Offset or Qualified Positive Offset Verification Statement issued and attested to by a DEP-accredited verification body for the Offset Project Data Report for which registry offset credits would be issued.

(b) An Offset Project Registry will determine whether the GHG emission reductions and GHG removal enhancements meet the requirements of section 147.280(a), the information submitted pursuant to section 147.280(a) is complete, and the Positive Offset or Qualified Positive Offset Verification Statement meets the requirements of sections 147.277, 147.277.1, and 147.277.2 within 45 calendar days of receiving it.

(c) Determination for Timing and Duration of Initial Crediting Periods for Offset Projects Submitted Through an Offset Project Registry. The initial crediting period will begin with the date that the first verified GHG emission reductions and GHG removal enhancements occur, according to the first Positive Offset or Qualified Positive Offset Verification Statement that is received by an Offset Project Registry, unless otherwise specified in the applicable Compliance Offset Protocol.

(d) Determination for Timing and Duration of Renewed Crediting for Offset Projects Submitted through an Offset Project Registry. A renewed crediting period will begin the day after the conclusion of the prior crediting period.

§ 147.280.1 Process for Issuance of Registry Offset Credits.

(a) An Offset Project Registry may issue a registry offset credit that meets the requirements of sections 147.280(a) and (b) to an Offset Project Operator, Authorized Project Designee, or any other third party authorized by the Offset Project Operator or Authorized Project Designee to receive registry offset credits, no later than 15 calendar days after an Offset Project Registry makes a determination pursuant to section 147.280(b).

(b) Change of Listing Status at the Offset Project Registry. When an Offset Project Registry issues a registry offset credit for an offset project, the listing status for that offset project will be changed to either “Active Registry Project” or “Active Registry Renewal” at the Offset Project Registry and DEP.

(c) Notice of Determination of Issuance of Registry Offset Credits. Not later than 15 calendar days after an Offset Project Registry issues a registry offset credit, an Offset Project Registry will notify the Offset Project Operator, Authorized Project Designee, or any other third party authorized by the Offset Project Operator of the issuance.

(d) Requests for Additional Information. An Offset Project Registry may request additional information for offset projects seeking issuance of registry offset credits from the Offset Project Operator, Authorized Project Designee or verification body.

(1) An Offset Project Registry may request any additional information from the Offset Project Operator, Authorized Project Designee, if applicable, or the verification body within the timeframe specified in section 147.280(b) before issuing registry offset credits for an offset project that meets the requirements of sections 147.280(a) and (b).

(2) If an Offset Project Registry determines the information submitted pursuant to sections 147.280(a), 147.280(b), and 147.280.1(d)(2) does not meet the requirements for issuance of registry offset credits, an Offset Project Registry must deny issuance of registry offset credits. The Offset Project Operator or Authorized Project Designee may petition an Offset Project Registry within 10 days of denial for a review of the information submitted pursuant to sections 147.280(a), 147.280(b), and 147.280.1(d)(2) and respond to any issues that prevent the issuance of registry offset credits.

(3) An Offset Project Registry must make a final determination within 30 calendar days of receiving the Offset Project Operator's or Authorized Project Designee's request in section 147.280.1(d)(2) and may request additional information from the Offset Project Operator, Authorized Project Designee, if applicable, or verification body.

(4) If an Offset Project Registry determines not to issue registry offset credits, the Offset Project Registry must submit a detailed report to DEP that describes why they came to a negative determination.

(5) If an Offset Project Registry determines not to issue registry offset credits, the Offset Project Operator or Authorized Project Designee may request that DEP make a final determination on whether the GHG reductions or removal enhancements achieved by the offset project meet the requirements for registry offset credit issuance. In making this determination, DEP may consult with the Offset Project Operator, Authorized Project Designee, if applicable, verification body, and Offset Project Registry before making the final determination.

(6) If after reviewing all the information, DEP determines that the GHG reductions or removal enhancements meet the requirements for registry offset credit issuance, the Offset Project Registry will issue registry offset credits in the amount of GHG reductions or removal enhancements verified to have been achieved by the offset project for the applicable Reporting Period(s).

(e) At the time of issuance or after notifying the Offset Project Operator, Authorized Project Designee, or any other third party authorized by the Offset Project Operator to receive registry offset credits, of the issuance, the Offset Project Registry will create a unique serial number for each registry offset credit.

§ 147.281. Issuance of DEP Offset Credits.

(a) One DEP offset credit, which represents one metric ton of CO₂e for a direct GHG emission reduction or direct GHG removal enhancement, will be issued only for a GHG emission reduction or GHG removal enhancement that occurs during a Reporting Period. One DEP offset credit will be issued for each metric ton of CO₂e only if:

(1) DEP or an Offset Project Registry has listed the offset project pursuant to section 147.275;

(2) The GHG emission reductions and GHG removal enhancements were issued a Positive Offset or Qualified Positive Offset Verification Statement pursuant to sections 147.277.1 and 147.277.2;

(3) DEP or an Offset Project Registry has received a Positive Offset or Qualified Positive Offset Verification Statement issued and attested to by an DEP-accredited verification body for the Offset Project Data Report for which registry offset credits were issued pursuant to section 147.280.1, if the offset project was submitted for listing with an Offset Project Registry, or for which DEP offset credits would be issued pursuant to section 147.281.1; and

(4) The issued DEP offset credits would not immediately be subject to invalidation pursuant to sections 147.285(c)(1) and 147.285(c)(3).

(b) Requirements for Offset Projects Submitted Through an Offset Project Registry Seeking Issuance of DEP Offset Credits. If an Offset Project Operator or Authorized Project Designee provides information for listing pursuant to section 147.275, monitors and reports pursuant to section 147.276, and has their offset project verified pursuant to sections 147.277, 147.277.1, and 147.277.2 through an Offset Project Registry, the Offset Project Operator or Authorized Project Designee must provide the following information to DEP for issuance of DEP offset credits pursuant to section 147.281.1:

(1) The attestations required in sections 147.275(c)(1), 147.275(c)(2), 147.275(c)(3), 147.276(d)(7), 147.277.1(b)(3)(R)(4)b, 147.277.1(b)(3)(R)(4)e., 147.277.1(b)(3)(R)(4)f, and any in the applicable Compliance Offset Protocol;

(2) Offset project listing information submitted to an Offset Project Registry pursuant to sections 147.275(c) and (e);

(3) The original and final Offset Project Data Reports submitted to an Offset Project Registry pursuant to sections 147.276(d), 147.277.1(b)(3)(M), and 147.277.1(b)(3)(R)5; and

(4) Offset Verification Statements submitted pursuant to section 147.277.1(b)(3)(R)(4)b.

(5) The Offset Project Operator, or Authorized Project Designee, if applicable, must submit a request for issuance of DEP offset credits to DEP for each Offset Project Data Report for which they are seeking issuance of DEP offset credits identifying which Holding Accounts

the DEP offset credits should be placed into and how many DEP offset credits will be placed into each Holding Account. The Offset Project Operator or Authorized Project Designee may request that DEP offset credits are placed into the Holding Account of any party not prohibited to hold compliance instruments under this Article. Any party receiving DEP offset credits at the time of DEP offset credit issuance must have a tracking system account with DEP.

(A) An Offset Project Operator or Authorized Project Designee may request that only a portion of the eligible GHG reductions and removal enhancements for the applicable Reporting Period be issued DEP offset credits in the request for issuance.

(B) The request for issuance of DEP offset credits may be provided to DEP when the Offset Project Operator or Authorized Project Designee, if applicable, submits the information in sections 147.281(b)(1) through (4) but must be provided to DEP before it will issue DEP offset credits pursuant to section 147.281.1. If the offset project was listed by an Offset Project Registry, the request for issuance of DEP offset credits may not be provided to DEP until the Offset Project Registry has issued registry offset credits for the applicable Offset Project Data Report(s).

(c) DEP will determine whether the GHG emission reductions and GHG removal enhancements meet the requirements of this article and the applicable Compliance Offset Protocol, the information submitted in sections 147.281(b) and (c) is complete, and the Positive Offset or Qualified Positive Offset Verification Statement meets the requirements of sections 147.277, 147.277.1, and 147.277.2 within 45 calendar days of receiving complete and accurate information.

(d) Before DEP issues a DEP offset credit pursuant to section 147.281.1 for GHG reductions and GHG removal enhancements achieved by an offset project in a Reporting Period, the Offset Project Operator or Authorized Project Designee must provide the following attestations, in writing, to DEP:

(1) “I certify under penalty of perjury under the laws of the Commonwealth of Pennsylvania the GHG reductions or GHG removal enhancements for [project] from [date] to [date] have been measured in accordance with the [appropriate DEP Compliance Offset Protocol] and all information required to be submitted to DEP is true, accurate, and complete.”;

(2) “I understand I am voluntarily participating in the Pennsylvania Greenhouse Gas Cap-and-Trade Program under 25 Pa. Code Chapter 147, and by doing so, I am now subject to all regulatory requirements and enforcement mechanisms of this program and subject myself to the jurisdiction of Pennsylvania as the exclusive venue to resolve any and all disputes arising from the enforcement of provisions in this chapter.”;

(3) “I understand that the offset project activity and implementation of the offset project must be in accordance with all applicable local, regional, and national environmental and health and safety regulations that apply based on the offset project location. I understand that offset projects are not eligible to receive DEP or registry offset credits for GHG reductions and GHG removal enhancements that are not in compliance with the requirements of this chapter.”;

(4) “I certify under penalty of perjury under the laws of the Commonwealth of Pennsylvania all information provided to DEP for issuance of DEP offset credits is true, accurate, and complete.”; and

(5) “I certify under penalty of perjury under the laws of the Commonwealth of Pennsylvania that the GHG reductions and GHG removal enhancements for which I am seeking DEP Offset Credits have not been issued any offset credits or been used for any GHG mitigation requirements in any other voluntary or mandatory program, except, if applicable, an Offset Project Registry pursuant to section 147.280.1.”

(e) Determination for Timing and Duration of Initial Crediting Periods for Offset Projects Submitted Through DEP. The initial crediting period will begin with the date that the first verified GHG emission reductions and GHG removal enhancements occur, according to the first Positive Offset or Qualified Positive Offset Verification Statement that is received by DEP, unless otherwise specified in a Compliance Offset Protocol.

(f) Determination for Timing and Duration of Renewed Crediting for Offset Projects Submitted Through DEP. A renewed crediting period will begin the day after the conclusion of the prior crediting period.

§ 147.281.1 Process for Issuance of DEP Offset Credits.

(a) DEP will issue an DEP offset credit for GHG reductions and removal enhancements achieved in a Reporting Period for an offset project that meets the requirements of

sections 147.281(a) and (b) to the DEP Issuance Account no later than 15 calendar days after DEP makes a determination pursuant to section 147.281(c), as long as all attestations required in section 147.281(d) have been received by DEP prior to its determination.

(b) Change of Listing Status at DEP. When DEP issues a DEP offset credit for an offset project, the listing status for that offset project will be changed from “Active Registry Project” to “Active DEP Project” or “Active Registry Renewal” to “Active DEP Renewal” at the Offset Project Registry and DEP.

(c) Notice of Determination of Issuance of DEP Offset Credits. Not later than 15 calendar days after DEP determines to issue a DEP offset credit pursuant to section 147.281(c), DEP will notify the Offset Project Operator, Authorized Project Designee, or any other third party requested by the Offset Project Operator pursuant to section 147.281(b)(5)(B) to receive DEP offset credits, of its intent to issue DEP offset credits.

(d) Requests for Additional Information. DEP may request additional information for offset projects submitted through an Offset Project Registry seeking issuance of DEP offset credits.

(1) DEP will notify the Offset Project Operator, Authorized Project Designee, or other third party identified in section 147.281(b)(5)(B) within 15 calendar days of its determination pursuant to section 147.281(c) if the information submitted pursuant to section 147.281(b), (c), and (d) is incomplete and request additional specific information.

(2) DEP may request any additional information from the Offset Project Operator, Authorized Project Designee, Offset Project Registry, or verification body before issuing DEP offset credits for an offset project that meets the requirements of section 147.281. The Offset Project Operator, Authorized Project Designee, Offset Project Registry, or verification body must submit the requested information to DEP within 10 calendar days of DEP’s request.

(3) If DEP determines the information submitted in sections 147.281(b), 147.281(c), and 147.281.1(d)(2) does not meet the requirements for issuance of DEP offset credits, then DEP may deny issuance of DEP offset credits. The Offset Project Operator or Authorized Project Designee may petition DEP within 10 days of denial for a review of submitted information in

sections 147.281(b), 147.281(c), and 147.281.1(d)(2) and respond to any issues that prevent the issuance of DEP offset credits.

(4) DEP must make a final determination within 30 calendar days of receiving the request in section 147.281.1(d)(3) and may request additional information from the Offset Project Operator or Authorized Project Designee, verification body, or Offset Project Registry. This determination made by the Secretary is final.

(e) A registry offset credit issued pursuant to section 147.280.1(a) must be removed or cancelled by the Offset Project Registry within 10 calendar days after DEP issues a DEP offset credit pursuant to this section, such that the registry offset credit is no longer available for transaction on the Offset Project Registry system. The Offset Project Registry must provide proof to DEP that the registry offset credits have been permanently removed or cancelled from the registry system.

(f) Receipt of DEP Offset Credits. DEP will transfer DEP offset credits into the Holding Account of the Offset Project Operator, Authorized Project Designee, or any other third party requested by the Offset Project Operator pursuant to section 147.281(b)(5)(B) to receive DEP offset credits, within 15 working days of the notice of determination pursuant to sections 147.281.1(c) and (d)(4).

§ 147.282. Registration of DEP Offset Credits.

A DEP offset credit will be registered by:

- (a) Creating a unique DEP serial number; and
- (b) Transferring the DEP offset credits to the Holding Account of the listed Offset Project Operator, Authorized Project Designee, or another third party as requested by the Offset Project Operator pursuant to section 147.281(b)(5)(B) to receive DEP offset credits, unless otherwise required by section 147.283.

§ 147.283. Forestry Offset Reversals.

(a) For forest sequestration projects, a portion of DEP offset credits issued to the forest offset project will be placed by DEP into the Forest Buffer Account.

(1) The amount of DEP offset credits that must be placed in the Forest Buffer Account shall be determined as set forth in the applicable version of the Compliance Offset Protocol in section 147.273(a)(2)(C)4.

(2) DEP offset credits will be transferred to the Forest Buffer Account by DEP at the time of DEP offset credit registration pursuant to section 147.282.

(3) If a forest offset project is originally submitted through an Offset Project Registry an equal number of registry offset credits must be removed or cancelled by the Offset Project Registry, such that the registry offset credit is no longer available for transaction on the Offset Project Registry system, and issued by DEP for placement in the Forest Buffer Account.

(4) The DEP offset credits placed into the Forest Buffer Account must correspond to the Reporting Period for which the DEP offset credits are issued.

(b) Unintentional Reversals. If there has been an unintentional reversal, the Offset Project Operator or Authorized Project Designee must notify DEP and the Offset Project Registry, in writing, of the reversal and provide an explanation for the nature of the unintentional reversal within 30 calendar days of its discovery.

(1) In the case of an unintentional reversal the Offset Project Operator or Authorized Project Designee shall provide in writing to DEP and an Offset Project Registry, if applicable, a completed verified estimate of current carbon stocks within the offset project boundary within 23 months of the discovery of the unintentional reversal. To determine the verified estimate of current carbon stocks a full offset verification must be conducted pursuant to sections 147.277 through 147.278, including a site visit. The verified estimate may be submitted as a separate offset verification services or incorporated into a chapter of the detailed verification report submitted pursuant to section 147.277.1 when offset verification services are conducted for an Offset Project Data Report. After an unintentional reversal, the Offset Project Operator or Authorized Project Designee does not need to submit an Offset Project Data Report until the required verified estimate of current carbon stocks within the offset project boundary is completed.

(2) If DEP determines that there has been an unintentional reversal, and DEP offset credits have been issued to the offset project, DEP will retire a quantity of DEP offset credits

from the Forest Buffer Account in the amount of metric tons CO₂e reversed for all Reporting Periods.

(c) Intentional Reversals. Requirements for intentional reversals are as follows:

(1) If an intentional reversal occurs, the Offset Project Operator or Authorized Project Designee shall, within 30 calendar days of the intentional reversal:

(A) Give notice, in writing, to DEP and the Offset Project Registry, if applicable, of the intentional reversal; and

(B) Provide a written description and explanation of the intentional reversal to DEP and the Offset Project Registry, if applicable.

(2) Within one year of the occurrence of an intentional reversal, the Offset Project Operator or Authorized Project Designee shall submit to DEP and the Offset Project Registry, if applicable, a completed verified estimate of current carbon stocks within the offset project boundary. To determine the verified estimate of current carbon stocks a full offset verification must be conducted pursuant to sections 147.277 through 147.278, including a site visit. The verified estimate may be submitted as a separate offset verification services or incorporated into a chapter of the detailed verification report submitted pursuant to section 147.277.1 when offset verification services are conducted for an Offset Project Data Report.

(3) If an intentional reversal occurs from a forest offset project, and DEP offset credits have been issued to the offset project, the current or most recent (in the case of an offset project after the final crediting period), forest owner(s) must submit to DEP for placement in the Retirement Account a quantity of valid DEP offset credits or other approved compliance instruments pursuant to subchapter 4 within six months of notification by DEP in the amount determined pursuant to sections 147.283(c)(3):

(A) The forest owner must turn in valid compliance instruments in the amount of metric tons CO₂e reversed for all Reporting Periods.

(B) Notification by DEP will occur after the verified estimate of carbon stocks referred to in section 147.283(c)(2) has been submitted to DEP, or after one year has elapsed since the occurrence of the reversal if the Offset Project Operator or Authorized Project Designee fails to submit the verified estimate of carbon stocks.

(D) If the forest owner does not submit valid DEP offset credits or other approved compliance instruments in the amount required pursuant to sections 147.283(c)(3)(A) to DEP within six months of notification by DEP, DEP will retire a quantity of DEP offset credits equal to the difference between the number of metric tons of CO₂e determined pursuant to sections 147.283(c)(3)(A) and the number of retired approved compliance instruments from the Forest Buffer Account and the forest owner will be subject to enforcement action and each DEP offset credit retired from the Forest Buffer Account will constitute a separate violation pursuant to section 147.314.

(4) Early Project Terminations. If a project termination, as defined in the Compliance Offset Protocol in section 147.273(a)(2)(C)(4), occurs from a compliance or early action forest offset project, and DEP offset credits have been issued to the offset project, the current or most recent (in the case of an offset project after the final crediting period), forest owner(s) must submit to DEP for placement in the Retirement Account a quantity of valid DEP offset credits or other approved compliance instruments pursuant to subchapter 4 in the amount equal to the number of DEP offset credits issued to the offset project for each Reporting Period, except for improved forest management forest offset projects. If the project is an improved forest management forest offset project, the amount of metric tons CO₂e reversed must be multiplied by the compensation rate in the Compliance Offset Protocol in section 147.273(a)(2)(C)4.

(A) DEP will notify the forest owner of how many DEP offset credits must be replaced with valid compliance instruments.

(B) The forest owner must submit to DEP for placement in the Retirement Account a valid DEP offset credit or another approved compliance instrument pursuant to subchapter 4 for each DEP offset credit required to be replaced within six months of DEP's retirement.

(C) If the forest owner does not submit valid DEP offset credits or other approved compliance instruments to DEP in the amount required pursuant to sections 147.283(c)(4) within six months of DEP's retirement, DEP will retire a quantity of DEP offset credits equal to the difference between the number of metric tons of CO₂e determined pursuant to sections 147.283(c)(4) and the number of retired approved compliance instruments from the Forest Buffer Account and they will be subject to enforcement action and each DEP offset credit retired from the Forest Buffer Account will constitute a separate violation pursuant to section 147.314.

(d) Disposition of Forest Sequestration Projects After a Reversal. If a reversal lowers the forest offset project's actual standing live carbon stocks below its project baseline standing live carbon stocks, the forest offset project will be terminated by DEP or an Offset Project Registry.

(1) If the forest offset project is terminated due to an unintentional reversal, DEP will retire from the Forest Buffer Account a quantity of DEP offset credits equal to the total number of DEP offset credits issued pursuant to section 147.281, and where applicable, all DEP offset credits issued to the offset project pursuant to the Program for Recognition of Early Action Offset Credits, over the preceding 100 years.

(2) If the forest offset project is terminated due to an unintentional reversal, another offset project may be initiated and submitted to DEP or an Offset Project Registry for listing within the same offset project boundary.

(3) If the forest offset project has experienced an unintentional reversal and its actual standing live carbon stocks are still above the approved baseline levels, it may continue without termination as long as the unintentional reversal has been compensated by the Forest Buffer Account. The Offset Project Operator or Authorized Project Designee must continue contributing to the Forest Buffer Account in future years as quantified in section 147.283(a)(1).

(4) If the forest offset project is terminated due to any reason except an unintentional reversal, new offset projects may not be initiated within the same offset project boundary, unless otherwise specified in a Compliance Offset Protocol.

§ 147.284. Ownership and Transferability of DEP Offset Credits.

(a) Initial ownership of a DEP offset credit will be with the registered Offset Project Operator, Authorized Project Designee, or another third party as requested by the Offset Project Operator pursuant to section 147.281(b)(5)(B) to receive DEP offset credits, unless otherwise required by section 147.283. A DEP offset credit may be sold, traded, or transferred, unless:

(1) It has been retired, surrendered for compliance, or used to meet any GHG mitigation requirements in any voluntary or regulatory program;

(2) It resides in the Forest Buffer Account pursuant to section 147.283; or

(3) It has been invalidated pursuant to section 147.285.

(b) A DEP offset credit may only be used:

(1) To meet a compliance obligation under this article, except if used by a covered entity in a program approved for linkage pursuant to subchapter 12; or

(2) By a Voluntarily Associated Entity for purposes of voluntary retirement.

§ 147.285. Invalidation of DEP Offset Credits.

(a) A DEP offset credit issued under this article will remain valid unless invalidated pursuant to this section.

(b) Timeframe for Invalidation. DEP may invalidate a DEP offset credit pursuant to this section within the following timeframe if a determination is made pursuant to section 147.285(f):

(1) Within eight years of the date that corresponds to the end of the Reporting Period for which the DEP offset credit is issued, if the DEP offset credit is issued pursuant to section 147.281.1, unless one of the following requirements is met:

(A) The Offset Project Operator or Authorized Project Designee for an offset project developed under the Compliance Offset Protocol in section 147.273(a)(2)(C)1 does all of the following:

1. Has a different verification body that has not verified the Offset Project Data Report for the issuance of DEP offset credits, and meets the requirements for conflict of interest pursuant to section 147.279 and rotation of verification bodies pursuant to section 147.277.1(a), conduct a second independent regulatory verification pursuant to sections 147.277 through 147.278, except for section 147.277.1(b)(3)(M), for the same Offset Project Data Report. Although the requirements in section 147.277.1(b)(3)(M) do not need to be met under this section, any misreporting, discrepancies, and omissions found during the full offset verification services must be included in the offset material misstatement calculation performed pursuant to section 147.277.1(b)(3)(Q). If minor correctable errors that do not result in an offset material misstatement are found during the full offset verification services and the verification body does not identify any other nonconformance that would result in an adverse Offset Verification Statement, the verification body must issue a Qualified Positive Offset

Verification Statement and identify the correctable errors on the Offset Verification Statement;

2. The second regulatory verification must be completed within three years of the issuance of the DEP offset credits through the submittal of an Offset Verification Statement pursuant to section 147.277.1(b)(3)(R)1, and the Offset Project Operator or Authorized Project Designee must receive a Positive or Qualified Positive Offset Verification Statement from the new verification body for the same Offset Project Data Report.

a. If the offset project is listed with an Offset Project Registry, the verification body must submit the detailed verification report and Offset Verification Statement for the second regulatory verification to the Offset Project Registry and DEP.

b. The Offset Project Registry must review the offset verification documents pursuant to section 147.287(e)(1)(E) and submit a report to DEP that includes the details and findings of the Offset Project Registry's review. During its review, the Offset Project Registry may request additional information from the verification body and Offset Project Operator or Authorized Project Designee, if applicable, and may request clarifications and revisions to the materials, if necessary.

c. The Offset Project Registry has 45 calendar days to review the offset verification information once complete and accurate verification documents are received from the verification body.

d. The Offset Project Registry has an additional 15 working days to submit its report to DEP. DEP will review the Offset Project Registry report and determine based on the report and all the information submitted by the verification body and Offset Project Operator or Authorized Project Designee, if applicable, if the invalidation timeframe will be reduced. During its review, DEP may request additional information, clarifications, and revisions to the materials, if necessary.

3. If the requirements in sections 147.285(b)(1)(A)1 and 2 are met, the DEP offset credits issued under the Offset Project Data Report may only be subject to invalidation within three years of the date that corresponds to the end of the Reporting Period for which the DEP offset credits are issued, if the DEP offset credits are issued pursuant to section 147.281;

or

(B) The Offset Project Operator or Authorized Project Designee for an offset project developed under one of the protocols listed in section 147.285(b)(1)(B). does the following:

1. Has a subsequent Offset Project Data Report verified pursuant to sections 147.277 through 147.278 by a different verification body than the one which conducted the most recent verification, and that meets the requirements for conflict of interest pursuant to section 147.279 and rotation of verification bodies pursuant to section 147.277.1(a); and

2. The verification conducted by a different verification body for the subsequent Offset Project Data Report and used to reduce the invalidation timeframe of any DEP offset credits must be completed through the submittal of an Offset Verification Statement pursuant to section 147.277.1(b)(3)(R)1 within, at a maximum, three years from the date that corresponds to the last time DEP offset credits were issued to the offset project. The verification of the subsequent Offset Project Data Report must result in a Positive or Qualified Positive Offset Verification Statement from the new verification body.

3. If the requirements in sections 147.285(b)(1)(B)1 and 2 are met, the DEP offset credits issued pursuant to section 147.281 for no more than three Reporting Periods prior to the Reporting Period for which the subsequent Offset Project Data Report was verified by a different verification body may only be subject to invalidation within three years of the date that corresponds to the end of the Reporting Period for which the DEP offset credits are issued, if the DEP offset credits are issued pursuant to section 147.281.

4. If an offset project developed under one of the Compliance Offset Protocols listed in section 147.285(b)(1)(B)5 is in the last Reporting Period of a crediting

period and will not have a renewed crediting period, the invalidation timeframe for up to the last three Reporting Periods may be reduced from eight years to three years if the following requirements are met for the last Offset Project Data Report of the crediting period:

a. The Offset Project Operator or Authorized Project Designee has a different verification body than has verified the Offset Project Data Reports identified in section 147.285(b)(1)(B)4. and that meets the requirements for conflict of interest pursuant to section 147.279 and rotation of verification bodies pursuant to section 147.277.1(a) conduct a second independent regulatory verification pursuant to sections 147.277 through 147.278, except for section 147.277.1(b)(3)(M), for the last Offset Project Data Report of the crediting period. Although the requirements in section 147.277.1(b)(3)(M) do not need to be met under this section, any misreporting, discrepancies, and omissions found during the full offset verification services must be included in the offset material misstatement calculation performed pursuant to section 147.277.1(b)(3)(Q); and

b. The second regulatory verification must be completed within three years of the issuance of the DEP offset credits through the submittal of an Offset Verification Statement pursuant to section 147.277.1(b)(3)(R)1. and the Offset Project Operator or Authorized Project Designee must receive a Positive or Qualified Positive Offset Verification Statement from the new verification body for the same last Offset Project Data Report.

i. If the offset project is listed with an Offset Project Registry, the verification body must submit the detailed verification report and Offset Verification Statement for the second regulatory verification to the Offset Project Registry and DEP.

ii. The Offset Project Registry must review the offset verification documents pursuant to section 147.287(e)(1)(E) and submit a report to DEP that includes the details and findings of the Offset Project Registry's review. During its review, the Offset Project Registry may request additional information from the verification body and Offset

Project Operator or Authorized Project Designee, if applicable, and may request clarifications and revisions to the materials, if necessary.

iii. The Offset Project Registry has 45 calendar days to review the offset verification information once complete and accurate verification documents are received from the verification body.

iv. The Offset Project Registry has an additional 15 working days to submit its report to DEP. DEP will review the Offset Project Registry report and determine based on the report and all the information submitted by the verification body and Offset Project Operator or Authorized Project Designee, if applicable, and may request additional information, clarifications, and revisions to the materials, if necessary.

(c) Grounds for Initial Determination of Invalidation. DEP may determine that an DEP offset credit is invalid for the following reasons:

(1) The Offset Project Data Report contains errors that overstate the amount of GHG reductions or GHG removal enhancements by more than 5.00 percent;

(A) If DEP finds that there has been an overstatement by more than 5.00 percent, DEP shall determine how many GHG reductions and GHG removal enhancements were achieved by the offset project for the applicable Reporting Period. Within 10 calendar days of this determination, DEP will notify the verification body that performed the offset verification and the Offset Project Operator or Authorized Project Designee. Within 25 calendar days of receiving the written notification by DEP, the verification body shall provide any available offset verification services information or correspondence related to the Offset Project Data Report. Within 25 calendar days of receiving the written notification by DEP, the Offset Project Operator or Authorized Project Designee shall provide data that is required to calculate GHG reductions and GHG removal enhancements for the offset project according to the requirements of this article, the detailed offset verification report prepared by the verification body, and other information requested by DEP. The Offset Project Operator or Authorized Project Designee shall also make available personnel who can assist DEP's determination of how many GHG reductions and GHG removal enhancements were achieved by the offset project for the applicable Reporting Period.

1. DEP will determine the actual GHG reductions and GHG removal enhancements achieved by the offset project for the applicable Reporting Period based on, at a minimum, the following information:

- a. The GHG sources, GHG sinks, and GHG reservoirs within the offset project boundary for that Reporting Period; and
- b. Any previous Offset Project Data Reports submitted by the Offset Project Operator or Authorized Project Designee, and the Offset Verification Statements rendered for those reports.

2. In determining how many GHG reductions and GHG removal enhancements were achieved by the offset project for the applicable Reporting Period, DEP may use the following methods, as applicable:

- a. The applicable Compliance Offset Protocol;
- b. In the event of missing data, DEP will rely on the missing data provisions pursuant to section 147.276, and, if applicable, the Compliance Offset Protocol; and
- c. Any information reported under this article for this Reporting Period and past Reporting Periods.

3. DEP shall determine how many GHG reductions and GHG removal enhancements were achieved by the offset project for the applicable Reporting Period using the best information available, including the information in section 147.285(c)(1)(A)(1.) and methods in section 147.285(c)(1)(A)(2.), as applicable.

(B) If DEP determines that an overstatement has occurred pursuant to section 147.285(c)(1), DEP shall determine the amount of DEP offset credits that correspond to the overstatement using the following equation, rounded to the nearest whole ton:

$$\text{If } I_{DEPOC} > R_{OPRC} * 1.05$$

$$\text{Then } O_R + I_{DEPOC} - R_{OPDR}$$

Where:

“O_R” is the amount of overstated GHG reductions and GHG removal enhancements for the applicable Offset Project Data Report, rounded to the nearest whole ton;

“IDEPDOC” is the number of DEP offset credits issued under the applicable Offset Project Data Report pursuant to section 147.281.1 or the Program for Recognition of Early Action Offset Credits;

“ROPDR” is the number of GHG reductions and GHG removal enhancements determined by DEP pursuant to section 147.285(c)(1) for the applicable Offset Project Data Report;

(2) The offset project activity and implementation of the offset project was not in accordance with all local, regional, state, and national environmental and health and safety laws and regulations that apply based on the offset project location and that directly apply to the offset project, including as specified in the applicable Compliance Offset Protocol, as determined pursuant to section 147.273(b), during the Reporting Period for which the DEP offset credit was issued.

(A) For offset projects using a protocol from sections 147.273(a)(2)(C)1, 2, or 5, if DEP finds that the offset project is out of regulatory compliance, then DEP shall determine how many GHG reductions and GHG removal enhancements were achieved by the offset project for the applicable Reporting Period. Within 10 calendar days of this determination, DEP will notify the verification body that performed the offset verification and the Offset Project Operator or Authorized Project Designee. Within 25 calendar days of receiving the written notification by DEP, the verification body shall provide any available offset verification services information or correspondence related to the relevant Offset Project Data Report(s). Within 25 calendar days of receiving the written notification by DEP, the Offset Project Operator or Authorized Project Designee shall provide data that is required to calculate GHG reductions and GHG removal enhancements for the offset project according to the requirements of this article, the detailed offset verification report prepared by the verification body, and other information requested by DEP. The Offset Project Operator or Authorized Project Designee shall also make available personnel who can assist DEP’s determination of how many GHG reductions and GHG removal enhancements were achieved by the offset project for the applicable Reporting Period.

1. DEP will determine the actual GHG reductions and GHG removal enhancements achieved by the offset project for the applicable Reporting Period based on, at a minimum, the following information:

- a. The GHG sources, GHG sinks, and GHG reservoirs within the offset project boundary for that Reporting Period;
- b. Any previous Offset Project Data Reports submitted by the Offset Project Operator or Authorized Project Designee, and the Offset Verification Statements rendered for those reports; and
- c. Any information relating to the regulatory compliance of the offset project provided by the Offset Project Operator, Authorized Project Designee, or regulatory oversight body.

2. In determining how many GHG reductions and GHG removal enhancements were achieved by the offset project for the applicable Reporting Period, DEP may use the following methods, as applicable:

- a. The applicable Compliance Offset Protocol;
- b. In the event of missing data, DEP will rely on the missing data provisions pursuant to section 147.276, and, if applicable, the Compliance Offset Protocol; and
- c. Any information reported under this article for this Reporting Period and past Reporting Periods.

3. DEP shall determine how many GHG emission reductions and GHG removal enhancements were achieved by the offset project for the applicable Reporting Period using the best information available, including the information in section 147.285(c)(2)(A)(1.) and methods in section 147.285(c)(2)(A)(2.), as applicable.

4. If DEP determines that an offset project is out of regulatory compliance pursuant to section 147.285(c)(2), then DEP shall determine the amount of overstated DEP offset credits, rounded to the nearest whole number, that correspond to the time period that the offset project is determined to be out of regulatory compliance pursuant to section 147.273(b)(1)(E). All offset credits corresponding to this time period shall be deemed ineligible for crediting, and therefore any offset credits corresponding to this time period are subject to invalidation.

(B) For offset projects using a protocol from sections 147.273(a)(2)(C)3, 4, or 6. if DEP finds that the offset project is out of regulatory compliance, then DEP shall determine that all DEP offset credits issued for the applicable Reporting Period are subject to invalidation.

(3) DEP determines that offset credits have been issued in any other voluntary or mandatory program within the same offset project boundary and for the same Reporting Period in which DEP offset credits were issued for GHG reductions and GHG removal enhancements.

(4) The following shall not be grounds for invalidation:

(A) An update to a Compliance Offset Protocol will not result in an invalidation of DEP offset credits issued under a previous version of the Compliance Offset Protocol; or

(B) A reversal that occurs under a forest offset project. If such a reversal occurs the provisions in section 147.283 apply.

(d) Suspension of Transfers. When DEP makes an initial determination pursuant to section 147.285(c) it will immediately block any transfers of DEP offset credits for the applicable Offset Project Data Report. Once DEP makes a final determination pursuant to section 147.285(f) the block on transfers for any valid DEP offset credits will be cancelled.

(e) Identification of Affected Parties. If DEP makes an initial determination that one of the circumstances listed in section 147.285(c) has occurred, DEP will identify the following parties:

(1) The current holders that hold any DEP offset credits in their Holding and/or Compliance Accounts from the applicable Offset Project Data Report;

(2) The entities for which DEP transferred any DEP offset credits from the applicable Offset Project Data Report into the Retirement Account; and

(3) The current, or most recent (in the case of an offset project after the final crediting period), Offset Project Operator and Authorized Project Designee, and, for forest offset projects the current, or most recent (in the case of an offset project after the final crediting period), Forest Owner(s).

(f) Final Determination and Process of Invalidation. DEP will notify the parties identified in section 147.285(e) of its initial determination pursuant to section 147.285(c), and

provide each party an opportunity to submit additional information to DEP prior to making its final determination, as follows:

(1) DEP will include the reason for its initial determination in its notification to the parties identified in section 147.285(e).

(2) After notification the parties identified in section 147.285(e) will have 25 calendar days to provide any additional information to DEP.

(3) DEP may request any information as needed in addition to the information provided under this section.

(4) The Department will have 30 calendar days after all information is submitted under this section to make a final determination that one or more conditions listed pursuant to section 147.285(c) has occurred and whether to invalidate DEP offset credits.

(A) The parties identified pursuant to section 147.285(e) will be notified of DEP's final determination of invalidation pursuant to this section.

(B) Any approved program for linkage pursuant to subchapter 12 will be notified of the invalidation at the time of DEP's final determination pursuant to this section.

(g) Removal of Invalidated DEP Offset Credits from Holding, Compliance, and/or Forest Buffer Accounts. If the Department makes a final determination pursuant to section 147.285(f) that a DEP offset credit is invalid, then:

(1) DEP offset credits will be removed from any Holding, Compliance, or Forest Buffer Account, as follows;

(A) If n DEP offset credit is determined to be invalid due to the circumstance listed in section 147.285(c)(1) or 147.285(c)(2)(A), then:

1. DEP will determine which DEP offset credits will be removed from the Compliance and/or Holding Accounts of each party identified in section 147.285(e)(1) according to the following equation, truncated to the nearest whole ton:

$$H_{DEPOC} = (TOT_{Holding} / I_{DEPOC}) O_R$$

Where:

“OR” is the amount of overstated GHG reductions and GHG removal enhancements for the applicable Offset Project Data Report calculated pursuant to section 147.285(c)(1) or (c)(2)(A);

“ID_{DEPOC}” is the number of DEP offset credits issued under the applicable Offset Project Data Report pursuant to section 147.281.1;

“TOT_{Holding}” is the total number of DEP offset credits currently being held in a Compliance and/or Holding Account by each party identified in section 147.285(e)(1) for the applicable Offset Project Data Report; and

“H_{DEPOC}” is the total number of DEP offset credits, rounded to the nearest whole ton, that will be removed from the Holding and/or Compliance Account of each party identified in section 147.285(e)(1).

2. DEP will determine the quantity of DEP offset credits issued under the applicable Offset Project Data Report in the amount calculated pursuant to section 147.285(g)(1)(A) and remove a quantity of DEP offset credits from any Holding and/or Compliance Account of the parties identified in section 147.285(e)(1).

3. DEP will determine the quantity of DEP offset credits issued under the applicable Offset Project Data Report, for all projects that contribute to the Forest Buffer Account, in the amount calculated pursuant to section 147.285(c)(1) or (c)(2)(A) multiplied by the project’s reversal risk rating and remove that quantity of DEP offset credits from the Forest Buffer Account.

(B) If a DEP offset credit is determined to be invalid due to the circumstances listed in sections 147.285(c)(2)(B) or (c)(3), DEP will remove all DEP offset credits issued under the applicable Offset Project Data Report from any Holding and/or Compliance Account of the parties identified in section 147.285(e)(1), and from the Forest Buffer Account.

(2) The parties identified pursuant to section 147.285(e) will be notified of which serial numbers were removed from any Compliance, Holding, and/or Forest Buffer Accounts.

(3) Any approved program for linkage pursuant to subchapter 12 will be notified of which serial numbers were removed from any Compliance, Holding, and/or Forest Buffer Accounts.

(h) Requirements for Replacement of DEP Offset Credits. If an DEP offset credit that is issued to a non-sequestration offset project or an urban forest project, or that is issued to a U.S. forest offset project on or after July 1, 2014, and is in the Retirement Account, and it is determined to be invalid pursuant to section 147.285(f) for any circumstance listed in sections 147.285(c)(2)(B) and (c)(3), then:

(1) The party identified in section 147.285(e)(2) must replace each DEP offset credit it requested DEP to transfer into the Retirement Account for the applicable Offset Project Data Report with a valid DEP offset credit or another approved compliance instrument pursuant to subchapter 4, within six months of notification by DEP pursuant to section 147.285(g)(2).

(2) If the party identified in section 147.285(e)(2) does not replace each invalid DEP offset credit within six months of the notice of invalidation pursuant to section 147.285(g)(2), each unreplaced invalidated DEP offset credit will constitute a violation for that party pursuant to section 147.314.

(A) If the party identified in section 147.285(e)(2) is no longer in business DEP will require the Offset Project Operator identified in section 147.285(e)(3) to replace each invalidated DEP offset credit and will notify the Offset Project Operator that they must replace them.

(B) If the Offset Project Operator is required to replace the DEP offset credits, the Offset Project Operator must replace each DEP offset credit with a valid DEP offset credit or another approved compliance instrument pursuant to subchapter 4, within six months of notification by DEP.

(C) If the Offset Project Operator is required to replace the DEP offset credits and the Offset Project Operator does not replace each invalid DEP offset credit within six months of notification by DEP, each unreplaced invalidated DEP offset credit will constitute a violation for that Offset Project Operator pursuant to section 147.314.

(3) The parties identified pursuant to section 147.285(e) will be notified of which serial numbers were invalidated.

(4) Any approved program for linkage pursuant to subchapter 12 will be notified of which serial numbers were invalidated.

(4) The Offset Project Operator, identified in section 147.285(e)(3), of an offset project that had DEP offset credits removed from the Forest Buffer Account pursuant to section 147.285(g)(1)(A)3. or (g)(1)(B) must replace a percentage of the DEP offset credits removed from the Forest Buffer Account equal to the percentage of DEP offset credits retired from the Forest Buffer Account for unintentional reversals as of the date the Secretary makes the final determination of invalidation, rounding up to the next whole number, with a valid DEP offset credit or another approved compliance instrument pursuant to subchapter 4, within six months of notification by DEP pursuant to section 147.285(g)(2). If the Offset Project Operator does not replace the required number of DEP offset credits within six months of notification by DEP pursuant to section 147.285(g)(2), each unreplaced invalidated DEP offset credit will constitute a violation for that Offset Project Operator pursuant to section 147.314.

(i) Nothing in this section shall limit the authority of the Commonwealth of Pennsylvania from pursuing enforcement action against any parties in violation of this article.

§ 147.286. Approval Requirements for Offset Project Registries.

(a) The approval requirements specified in this subchapter apply to all Offset Project Registries that will operate to provide registry services under this article.

(b) The Department may approve Offset Project Registries that meet and maintain the requirements specified in this section.

(1) Offset Project Registry Approval Application. To apply for approval as an Offset Project Registry, the applicant shall submit the following information to the Secretary:

- (A) Name of applicant;
- (B) Name of president or chief Secretary;
- (C) List of all board members, if applicable;
- (D) Addresses of offices located in the United States;
- (E) Documentation that the applicant carries at least five million U.S. dollars of professional liability insurance; and

(F) List of any judicial proceedings and administrative actions filed against the applicant within the previous five years, with a detailed explanation as to the nature of the proceedings.

(2) The applicant must submit, in writing, the procedures to screen and address internal conflicts of interest. The applicant must provide the following information to the Department:

(A) A staff, management, and board member conflict of interest policy where there are clear criteria for what constitutes a conflict of interest. The policy must:

1. Identify specific activities and limits on monetary and non-monetary gifts staff, management, or board members must not conduct or accept to meet the Offset Project Registry's internal policies of conflict of interest policy, or alternatively provide a comprehensive policy on the applicant's requirements for the reporting of any and all conflicts based on internal policies that guard against conflict of interest; and

2. Include a requirement for annual disclosure by each staff, management, or board member of any items or instances that are covered by the applicant's conflict of interest policy on an ongoing basis or for the previous calendar year.

3. The applicant must have appropriate conflict of interest and confidentiality requirements in place for any of its contractors;

(B) List of all service types provided by the applicant;

(C) The industrial sectors the applicant serves;

(D) Locations where services are provided; and

(E) A detailed organizational chart that includes the applicant and any parent, subsidiary, and affiliate companies.

(F) If the applicant under section 147.286 is going to designate a subdivision of its organization to provide registry services, then the prohibition in section 147.286(c)(1) on serving as an offset project consultant shall apply at the subdivision level and the applicant must provide the following general information for its self:

1. General types of services; and

2. General locations where services are provided.
- (3) The applicant has the following capabilities for registration and tracking of registry offset credits issued under this article:
 - (A) A comprehensive registration requirement for all registry participants;
 - (B) Tracking ownership and transactions of all registry offset credits it issues at all times; and
 - (C) Possesses a permanent repository of ownership information on all transactions involving all registry offset credits it issues under this article from the time they are issued to the time they are retired or cancelled.
- (c) The applicant's primary business must be operating an Offset Project Registry for voluntary or regulatory purposes and meet the following business requirements:
 - (1) The applicant may not act as an Offset Project Operator, Authorized Project Designee, or offset project consultant for offset projects registered or listed on its own Offset Project Registry and developed using a Compliance Offset Protocol once approved as an Offset Project Registry. The applicant must annually disclose to DEP any non-offset project related consulting services it provides to an Offset Project Operator or Authorized Project Designee who lists a project using a Compliance Offset Project with the applicant as part of the information included in the annual report required in section 147.287(j);
 - (2) The applicant may not act as a verification body or provide offset verification services pursuant to sections 147.277.1 and 147.277.2 once approved as an Offset Project Registry;
 - (3) If the applicant designates a subdivision of its organization to provide registry services, the applicant may not be an Offset Project Operator or Authorized Project Designee for offset projects listed at the subdivision's registry, act as a verification body, or be a covered entity or opt-in covered entity;
 - (4) The applicant must demonstrate experience in the continuous operation of a registry serving an Environmentally-focused Market for a minimum of two years in a regulatory and/or voluntary market. For the purposes of this section, an "Environmentally-focused Market" means a market that includes the trading of GHG-emissions based commodities. In the context of

Air Quality Management Districts or Air Pollution Control Districts, “Environmentally-focused Market” includes a market for air emission reduction credits; and

(5) The applicant’s primary incorporation or other business formation and primary place of business, or the primary place of business of the designated subdivision, if the applicant designates a subdivision to provide registry services pursuant to this section, must be in the United States of America.

(d) The Offset Project Registry must continue to maintain the professional liability insurance required in section 147.286(b) while it provides registry services to Offset Project Operators or Authorized Project Designees who are implementing offset projects using Compliance Offset Protocols.

(e) If any information submitted pursuant to sections 147.286(b) through (d) changes after the approval of an Offset Project Registry, the Offset Project Registry must notify the Secretary within 30 calendar days and provide updated information consistent with that required in sections 147.286(b) through (d).

(f) The Offset Project Registry must attest, in writing, to DEP as follows:

(1) “As the authorized representative for this Offset Project Registry, I understand that the Offset Project Registry is voluntarily participating in the Pennsylvania Cap-and-Trade Program under 25 Pa. Code Chapter 147 and the Offset Project Registry is now subject to all regulatory requirements and enforcement mechanisms of this program.”;

(2) “All information generated and submitted to DEP by the Offset Project Registry related to an offset project that uses a Compliance Offset Protocol will be true, accurate, and complete.”;

(3) “All information provided to DEP as part of an DEP audit of the Offset Project Registry will be true, accurate, and complete.”;

(4) “All registry services provided will be in accordance with the requirements of section 147.287.”;

(5) “The Offset Project Registry is committed to participating in all DEP training related to DEP’s compliance offset program or Compliance Offset Protocols.”; and

(6) The authorized representative of the Offset Project Registry must attest in writing, to DEP: “I certify under penalty of perjury under the laws of the Commonwealth of Pennsylvania I have authority to represent the Offset Project Registry and all information provided as part of this application is true, accurate, and complete.”.

(g) At least two of the management staff at the Offset Project Registry must take DEP provided training on DEP’s compliance offset program and pass an examination upon completion of training.

(h) The Offset Project Registry must have staff members who have collectively completed DEP training and passed an examination upon completion of training in all Compliance Offset Protocols.

(i) The Offset Project Registry must have at least two years of demonstrated experience in, and requirements for, direct staff oversight and review of offset projects, project listing, offset verification, and registry offset credit issuance.

(j) DEP Approval.

(1) Within 60 calendar days of receiving an application for approval as an Offset Project Registry and completion by all management staff of the training required in section 147.286(g), the Department will inform the applicant in writing either that the application is complete or that additional specific information is required to make the application complete.

(2) The applicant may be allowed to submit additional supporting documentation before a decision is made by the Department.

(3) Within 60 calendar days following completion of the application process, the Secretary shall approve an Offset Project Registry if evidence of qualification submitted by the applicant has been found to meet the requirements of section 147.286 and issue an Executive Order to that effect.

(4) The Department and the applicant may mutually agree, in writing, to longer time periods than those specified in subsections 147.286(j)(1) and 147.286(j)(3).

(5) The Department approval for an Offset Project Registry is valid for a period of 10 years, whereupon the applicant may re-apply. At the time of re-application, the Offset Project Registry must:

- (A) Demonstrate it consistently met all requirements in section 147.286;
- (B) Pass a performance review, which, at a minimum shows the Offset Project

Registry consistently:

1. Demonstrates knowledge of the DEP compliance offset program and Compliance Offset Protocols;

2. Meets all regulatory deadlines; and

3. Provides registry services in accordance with the requirements of this article; and

(C) Not have been subject to enforcement action under this article.

(k) Modification, Suspension, and Revocation of an Executive Order Approving an Offset Project Registry. The Department may review, and, for good cause, modify, suspend, or revoke approval to an Offset Project Registry.

(1) During revocation proceedings, the Offset Project Registry may not continue to provide registry services for DEP.

(2) Within five working days of suspension or revocation of approval, an Offset Project Registry must notify all Offset Project Operators or Authorized Project Designees for whom it is providing registry services or has provided registry services within the past 12 months of its suspension or revocation of approval.

(3) An Offset Project Operator or Authorized Project Designee who has been notified by an Offset Project Registry of a suspended or revoked approval must re-submit its offset project information with a new Offset Project Registry or DEP. An offset project listed at DEP or a new Offset Project Registry will continue to operate under its originally approved crediting period, provided that DEP may extend the crediting period or the relevant deadline in section 147.277(d) for one year if DEP determines that such extension is necessary to provide time for re-submission of information to the new Offset Project Registry or DEP.

(m) If the applicant under section 147.286 is going to designate a subdivision of its organization to provide registry services, all the requirements of section 147.286 may be applied at the designated subdivision level.

(n) An approved Offset Project Registry must make itself and its personnel available for a DEP audit.

§ 147.287. Offset Project Registry Requirements.

(a) The Offset Project Registry shall use Compliance Offset Protocols approved pursuant to section 147.271 to determine whether an offset project may be listed with the Offset Project Registry for issuance of registry offset credits. The Offset Project Registry may list projects under non-Compliance Offset Protocols but must make it clear any GHG emission reductions and GHG removal enhancements achieved under those protocols are not eligible to be issued registry offset credits or DEP offset credits.

(b) The Offset Project Registry must make the following information publicly available for each offset project developed under a Compliance Offset Protocol:

(1) Within 10 working days of the offset project listing requirements being deemed complete in section 147.275(f):

- (A) Offset project name;
- (B) Offset project location;
- (C) Offset Project Operator and, if applicable, the Authorized Project Designee;
- (D) Type of offset project;
- (E) Name and date of the Compliance Offset Protocol used by the offset project;
- (F) Date of offset project listing submittal and Offset Project Commencement date;

and

(G) Identification if the offset project is in an initial or renewed crediting period;

(2) Within 10 working days of the Offset Project Registry making a determination of registry offset credit issuance pursuant to section 147.280(b):

- (A) Reporting Period verified project baseline emissions;
- (B) Reporting Period verified GHG reductions and GHG removal enhancements achieved by the offset project;

(C) The unique serial numbers of registry offset credits issued to the offset project for the applicable Offset Project Data Report;

(D) Total verified GHG reductions and GHG removal enhancements for the offset project by Reporting Period for when an Offset Project Data Report was submitted;

(E) The final Offset Project Data Report for each Reporting Period; and

(F) Offset Verification Statement for each year the Offset Project Data Report was verified; and

(3) Clear identification of which offset projects are listed and submitting Offset Project Data Reports using Compliance Offset Protocols.

(c) Conflict of Interest Review by Offset Project Registries. The Offset Project Registry must apply the conflict of interest requirements in section 147.279 when making a conflict of interest determination for a verification body proposing to conduct offset verification services under sections 147.277.1 and 147.277.2. The Offset Project Registry must review and make sure the conflict of interest submittal in section 147.279(e) is complete. When an Offset Project Operator or Authorized Project Designee submits its information pursuant to section 147.281(b) to DEP, the Offset Project Registry must provide DEP with the information and attestation identified in section 147.279(e) within 15 calendar days.

(d) The Offset Project Registry may provide guidance to Offset Project Operators, Authorized Project Designees, or offset verifiers for offset projects using a Compliance Offset Protocol, if there is no clear requirement for the topic in a Compliance Offset Protocol, this article, or a DEP guidance document, after consulting and coordinating with DEP.

(1) An Offset Project Registry must maintain all correspondence and records of communication with an Offset Project Operator, Authorized Project Designee, or offset verifier when providing clarifications or guidance for an offset project using a Compliance Offset Protocol.

(2) Before providing such guidance, the Offset Project Registry may request DEP to provide clarification on the topic.

(3) Any Offset Project Operator or Authorized Project Designee requests for clarifications or guidance must be documented and the Offset Project Registry response must be

submitted on an ongoing monthly basis to DEP beginning with the date of approval as an Offset Project Registry.

(e) The Offset Project Registry must audit at least 10 percent of the annual full offset verifications developed for offset projects using a Compliance Offset Protocol.

(1) The audit must include the following checks:

(A) Attendance with the offset verification team on the offset project site visit;

(B) In-person or conference call attendance for the first offset verification team and Offset Project Operator or Authorized Project Designee meeting;

(C) In-person or conference call attendance to the last meeting or discussion between the offset verification team and Offset Project Operator or Authorized Project Designee;

(D) Documentation of any findings during the audit that cause the Offset Project Registry to provide guidance to, or require corrective action with, the offset verification team, including a list of issues noted during the audit and how those were resolved;

(E) A review of the detailed verification report and sampling plan to ensure that it meets the minimum requirements in sections 147.277.1 and 147.277.2 and documentation of any discrepancies found during the review; and

(F) An investigative review of the conflict of interest assessment provided by the verification body, which includes the following:

1. Discussions with both the lead verifier who submitted the conflict of interest assessment form and the Offset Project Operator or Authorized Project Designee to confirm the information on the conflict of interest assessment form is true, accurate, and complete;

2. An internet-based search to ascertain the existence of any previous relationship between the verification body and the Offset Project Operator or Authorized Project Designee, and if so the nature and extent; and

3. Any other follow up by the Offset Project Registry to have reasonable assurance that the information provided on the conflict of interest assessment form is true, accurate, and complete.

(2) All information related to audits of offset projects developed using a Compliance Offset Protocol must be provided to DEP within 10 calendar days of a DEP request.

(3) The audits must be selected to provide a representative sampling of geographic locations of all offset projects, representative sampling of verification bodies, representative sampling of lead verifiers, representative sampling of offset project types, and representative sampling of offset projects by size.

(4) The Offset Project Registry must provide an annual report to DEP by January 31 for its previous year's audit program of offset projects developed using Compliance Offset Protocols that includes:

(A) A list of all offset projects audited;

(B) Locations of all offset projects audited;

(C) Verification bodies associated with each offset project and names of offset verification team members;

(D) Dates of site visits;

(E) Offset Project Registry staff that conducted the audit; and

(F) Audit findings as required in section 147.287(e)(1)(D) through (F).

(f) The Offset Project Registry must review each detailed verification report provided in section 147.277.1(b)(3)(R)(4)(a) for completeness and accuracy and to ensure it meets the requirements of section 147.277.1(b)(3)(R)(4)(a) before accepting the associated Offset Verification Statement for the Offset Project Data Report and issuing registry offset credits.

(g) The Offset Project Registry must provide all information in its possession, custody, or control related to a listed offset project under a Compliance Offset Protocol within 10 calendar days of request by DEP.

(h) The Offset Project Registry must make its staff and all information related to listed offset projects under Compliance Offset Protocols by the Offset Project Registry available to DEP during any audits or oversight activities initiated by DEP to ensure the requirements in section 147.287 are being carried out as required by this article.

(i) The Offset Project Registry must remove or cancel any registry offset credits issued for an offset project using a Compliance Offset Protocol, such that the registry offset credits are no longer available for transaction on the Offset Project Registry system, once notified by DEP that the offset project is eligible to be issued DEP offset credits.

(j) The Offset Project Registry must provide an annual report by January 31 of the previous year's offset projects that are listed using a Compliance Offset Protocol. The report must contain the name of the offset project, type of offset project and applicable Compliance Offset Protocol, name of Offset Project Operator or Authorized Project Designee, location of offset project, status of offset project, associated verification body, crediting period, amount of any registry offset credits issued to date, amount of any registry offset credits retired or cancelled for the offset project by the Offset Project Registry to date.

(k) The Offset Project Registry may choose to offer insurance or other products to cover the risk of invalidation of DEP offset credits, but purchase or use of the insurance or other invalidation risk mechanisms will be optional for all entities involved with registry offset credits and DEP offset credit transactions.

§ 147.288. Record Retention Requirements for Offset Project Registries.

All information submitted, and correspondence related to, listed offset projects under Compliance Offset Protocols by the Offset Project Registry must be maintained by the Offset Project Registry for a minimum of 15 years.

Subchapter 14: Recognition of Compliance Instruments from Other Programs

§ 147.290. Sector-Based Offset Credits.

Sector-based offset credits may be generated through reduced or avoided GHG emissions from within, or carbon removed and sequestered from the atmosphere by, a specific sector in a particular jurisdiction. The Board may consider for acceptance compliance instruments issued from sector-based offset crediting programs that meet the requirements set forth in section 147.293 and originate from developing countries or from subnational jurisdictions within those developing countries, except as specified in subchapter 13.

§ 147.291. Procedures for Approval of Sector-Based Crediting Programs.

The Department may approve a sector-based crediting program in an eligible jurisdiction that is not automatically recognized under this Chapter. Provisions set forth in this article shall specify which compliance instruments issued by an approved sector-based crediting program may be used to meet a compliance obligation under this Article.

§ 147.292. Sources for Sector-Based Offset Credits.

Sector-based credits may be generated from:

- (a) Reducing Emissions from Deforestation and Forest Degradation (REDD) Plans.

§ 147.293. Requirements for Sector-Based Offset Crediting Programs.

(a) **General Requirements for Sector-Based Crediting Programs.** The Department may consider for approval a sector-based crediting program which may include the following sectoral requirements:

(1) **Sector Plan.** The host jurisdiction has established a plan for reducing emissions from the sector.

(2) **Monitoring, Reporting, Verification, and Enforcement.** The program includes a transparent system that regularly monitors, inventories, reports, verifies, and maintains accounting for emission reductions across the program's entire sector, as well as maintains enforcement capability over its reference activity producing credits.

(3) Offset Criteria. The program has requirements to ensure that offset credits generated by the program are real, additional, quantifiable, permanent, verifiable and enforceable.

(4) Sectoral Level Performance. The program includes a transparent system for determining and reporting when it meets or exceeds its crediting baseline(s) and evaluating the performance of the program's sector during each program's crediting period relative to the business as usual or other emissions reference level.

(5) Public Participation and Participatory Management Mechanism. The program has established a means for public participation and consultation in the program design process.

(6) Nested Approach. If applicable, the program includes:

(A) Offset project-specific requirements that establish methods to inventory, quantify, monitor, verify, enforce, and account for all project-level activities

(B) A system for reconciling offset project-based GHG reductions in sector-level accounting from the host jurisdiction.

§ 147.294. Quantitative Usage Limit.

Sector-based offset credits approved by DEP for compliance are subject to the quantitative usage limit specified in section 147.154.

§ 147.295 Additional Mandatory Offset Protocols

DEP shall develop additional offset protocols, applying the standards set forth in this chapter for the following activities, as further provided in this section.

(a) Abandoned Minelands Reclamation Projects. DEP shall, before the effective date of this chapter, develop a protocol to provide offset credits for the reduction in GHG emissions resulted from the reclamation of abandoned minelands. These shall include credits for extinguishing underground mine fires and preventing and extinguishing fires in abandoned waste coal piles, as well as credit for reforestation. This protocol may include the credit for projects initiated before the effective date of this chapter. DEP may further issue allowances without charge to abandoned minelands projects without charge from the within the cap established under this chapter, including waste coal to energy facilities, notwithstanding the ineligibility of

electricity facilities, where DEP determines that such allowances will encourage the reclamation that would not otherwise occur. DEP may not give credit or award allowances in connection with reclamation of any project resulted from mining coal after 1980.

(b) Within two years of the effective date of this chapter, DEP shall develop and publish a compliance offset protocol offsets created by the capture and geologic sequestration of emissions from the combustion of biomass. No usage limitation shall apply to offsets created pursuant to this protocol.

Subchapter 15: Enforcement and Penalties

§ 147.310. Jurisdiction.

Any of the following actions shall conclusively establish a person's consent to be subject to the jurisdiction of the Commonwealth of Pennsylvania, including the administrative authority of DEP and the jurisdiction of the Environmental Hearing Board and the courts of the Commonwealth of Pennsylvania:

- (a) Registration with DEP pursuant to subchapter 5;
- (b) The purchase or holding of a compliance instrument issued by DEP, unless the entity holding the compliance instrument is registered in an approved External GHG ETS pursuant to subchapter 12;
- (c) Receipt of compensation of any kind, including sales proceeds and commissions, from any transfers of allowances or offset credits issued by DEP pursuant to subchapter 13 or recognized by DEP pursuant to subchapter 14; or
- (d) Verification of an offset credit to be issued by DEP.

§ 147.311. Authority to Suspend, Revoke, or Modify.

- (a) The Department may suspend, revoke, or place restrictions on the Holding Account of a voluntarily associated entity determined to be in violation of any provision of this chapter.
- (b) The Department may place restrictions on a Holding Account of a covered entity or an opt-in covered entity determined to be in violation of any provision of this chapter.
- (c) The Department may suspend, revoke, or modify any order issued under this article or under article 2 of this subchapter, including an order accrediting a verifier, for a violation of any provision of this chapter.

§ 147.312. Administrative Orders and Injunctions.

The Department may issue any order or seek any judicial remedy to enforce this chapter as authorized by the APCA.

§ 147.313. Penalties.

Penalties may be assessed pursuant to the APCA for any violation of this chapter.

§ 147.314. Violations.

(a) If an entity fails to surrender a sufficient number of compliance instruments to meet its compliance obligation as specified in sections 147.156 or 147.157, and the procedures in 147.157(c) have been exhausted, there is a separate violation of this chapter for each required compliance instrument that has not been surrendered, or otherwise obtained by the Department under 147.157(c).

(b) A separate violation accrues every 45 days after the end of the Untimely Surrender Period pursuant to section 147.157 for each required compliance instrument that has not been surrendered.

(c) If an entity exiting the program pursuant to section 147.135(f)(1) fails to place the appropriate number of allowances into its compliance account and notify the Department, as required under section 147.190(k), there is a separate violation

(d) It is a violation to submit any record, information or report required by this chapter that:

- (1) Falsifies, conceals, or covers up by any trick, scheme or device a material fact;
- (2) Makes any false, fictitious or fraudulent statement or representation;
- (3) Makes or uses any false writing or document knowing the same to contain any false, fictitious or fraudulent statement or entry; or

(4) Omits material facts from a submittal or record.

(5) A fact is material if it could probably influence a decision by the Department.

(e) The violations stated in section 147.314(c) are additional to violations of any obligations of any entity subject to this regulation under other provisions of this article requiring submissions to DEP to be true, accurate and complete.

Subchapter 16: Administration by Approved Local Agencies

§147.320. General Authorization.

(a) Any municipality or group of municipalities with an authorized air pollution program pursuant to 25 Pa. Code Chapter 133 may apply to the Department to administer this GHG Cap-and-Trade program, including the auction, as a part of its existing program.

(b) A municipality or group of municipalities wishing to administer this CHG Cap-and-Trade program shall submit to the Department for its approval such modifications of its existing program as necessary to administer this GHG cap-and-trade program.

§147.321. Allowances.

(a) No later than October 1 of each year, DEP shall allocate allowances to an approved local program equal to the emissions or product use requiring surrender in the jurisdiction with the approved program for the next calendar year.

(b) Allocated emissions shall be reduced for the municipality according to the same schedule as applicable to the statewide emissions budget.

§147.322. Auctions, Direct Distribution of Allowances and Auction Proceeds.

(a) A municipality with an approved program may conduct its own auction or may elect to participate in the auction administered by the Department, in which case the allowances allocated to the municipality shall be treated as if they were consigned to the auction.

(b) The municipality with an approved program shall be entitled to proceed from the auction or sale of allowances allocated to the municipality and may use the proceeds as designated by the municipality and in accordance with its duty as a trustee under Article I, § 27 of the Pennsylvania Constitution.

(c) The municipality may make such direct allocations of allowances as it deems appropriate, provided that such direct allocation will not result in leakage and cause perverse results that will encourage GHG emissions.

Subchapter 17: Other Provisions

§ 147.330. Severability, Effect of Judicial Order.

Each provision of this chapter shall be deemed severable, and in the event that any provision of this chapter is held to be invalid, the remainder of this chapter shall continue in full force and effect.

§ 147.331. Confidentiality.

(a) Emissions data submitted to DEP under this chapter is public information and shall not be designated as confidential.

(b) Any entity submitting information to the Department pursuant to this chapter may claim such information as “confidential” by clearly identifying such information as “confidential.” Any claim of confidentiality by an entity submitting information must be based on the entity’s belief that the information marked as confidential is either trade secret or otherwise exempt from public disclosure under the Pennsylvania Right to Know Law.

§ 147.332. Jurisdiction of Pennsylvania.

(a) Any party that participates in the Pennsylvania GHG Cap-and-Trade Program is subject to the jurisdiction of the Commonwealth of Pennsylvania unless the party is subject to the jurisdiction of an External GHG ETS to which Pennsylvania has linked its Cap-and-Trade Program pursuant to section 147.130(h) and subchapter 12.

(b) Notwithstanding section 147.310, subsection 147.322(a) or any other jurisdictional provision in this article, this chapter shall not be construed to abridge the rights and protections afforded foreign sovereigns, including the right of removal to federal court, pursuant to the Foreign Sovereign Immunities Act, 28 U.S.C. sections 1330, 1332, 1391(f), 1441(d), and 1602-1611.

(c) A party that has rights and protections under the Foreign Sovereign Immunities Act consents to civil enforcement of the laws, rules and regulations pertaining to this chapter in Pennsylvania’s courts, subject to the rights and protections afforded to entities subject to the Foreign Sovereign Immunities Act, including removal to federal court.

Appendix A

Entity Information
Legal Name
Operating Name
U.S. Federal Tax Employer Identification Number
Value Added Tax Identification Number
Data Universal Numbering System Number
Date of incorporation
Place of Incorporation
Country of Incorporation
Business Number (Assigned by Pennsylvania Agency)
Physical Address (City, State, postal Code)
Mailing Address (City, State, postal Code)
Country
Contact Information (Name, address, phone, email)
Website Address
Type of Organization

Individual Information
First Name
Middle Name
Last Name
Personal Residence Address
Phone number
Email
Social Security Number
Date of Birth
Citizenship
Employer Name
Employer Address
Copy of a valid identity card issued by a state or province with an expiration date
Copy of a government-issued identity document
Copy of a Passport
Documentation of an open bank account
Documentation of any felony convictions during the previous five years

Appendix B

CITSS User Terms and Conditions

ACCESS AGREEMENT AND TERMS OF USE FOR THE CITSS

SIGN THE BOTTOM OF THE PAGE TO INDICATE YOUR ACCEPTANCE OF THIS AGREEMENT.

Access to the Compliance Instrument Tracking System Service (CITSS) is subject to the terms and conditions set forth in this Access Agreement and Terms of Use (Agreement). You must accept this Agreement in order to access the CITSS application. Violation of this agreement may result in loss of access to CITSS and, if warranted, civil or criminal prosecution under state, provincial, or federal law.

This Agreement is between the Commonwealth of Pennsylvania, Department of Environmental Protection (DEP) and each registered Pennsylvania user of Compliance Instrument Tracking System Service (User). The Agreement sets forth the terms of use of CITSS. DEP provides User with access to the CITSS software application, for registering entities and holding compliance instrument. User understands and agrees that CITSS is provided “AS IS” and without any warranty, as set forth below in greater detail.

1. CITSS Use

1.1 DEP hereby grants to User, and User hereby accepts, subject to the terms and conditions set forth in this Agreement, a non-exclusive and non-transferable right to access CITSS via the world-wide-web or the internet at times when the software and servers are available and operating.

1.2 User further acknowledges that it is not authorized to and may not possess or distribute any or all parts of the PAITSS software, including its source codes and program components. User is not authorized to install, run or operate CITSS on User’s or third-party computers or servers.

1.3 User is solely responsible for ensuring that all information, data, text, or other materials that User provides to DEP through use of CITSS (Content) are true, accurate, and complete and comply with DEP’s requirements for the compliance with the cap-and-trade

program under the Pennsylvania Cap on Greenhouse Gas Emission and Market-Based Compliance Mechanisms (Regulation) (25 Pennsylvania Code Chapter 147).

1.4 User understands that DEP will retain and use the Content consistent with the applicable Regulation(s) and may disclose Content to the public to the extent the disclosure is required by Pennsylvania law or legal process, or to the extent that disclosure is not prohibited by Pennsylvania law.

1.5 DEP has included (as part of CITSS) security features including password protection to prevent a person other than the User from obtaining access through CITSS to User's Content. User understands that these security features depend on User protecting its password from disclosure to unauthorized persons. User also understands and acknowledges that despite security measures to prohibit unauthorized access to the Content through CITSS, unauthorized access could occur and in the event it does, DEP or WCI, Inc. may not be held liable for the unauthorized release of information, data, text or other materials that have been submitted to DEP using CITSS.

1.6 DEP does not endorse or provide support for software or web-based interfaces offered by third parties for purposes of submitting data to DEP. Use of a third-party interface or software product in order to access CITSS does not relieve the user of the need to ensure that information required by the applicable Regulation has been properly submitted to DEP and received by the applicable deadline and that all certifications required for use of CITSS have been submitted.

1.7 User is responsible for maintaining a copy of all data submitted to CITSS. The loss of electronic information, data, text, or other materials during use of CITSS or the unavailability of the CITSS system does not excuse User from the requirements in the applicable Regulation.

2. CITSS User Agreement

The permission granted in Section 1 above is expressly made subject to and limited by the following restrictions, in addition to the limitations and restrictions set forth in other sections of the Agreement:

2.1 User agrees not to access CITSS by any means other than using internet browsers.

2.2 User further agrees that it shall NOT:

- a. Deliberately attempt to access any data, documents, email correspondence, or programs contained on systems for which User does not have authorization;
- b. Engage in activity that may harass, threaten or abuse others, or intentionally access, create, store or transmit material which may be deemed offensive, indecent or obscene, or that is illegal according to local, state, provincial, or federal law;
- c. Engage in activity that may degrade the performance of CITSS;
- d. Deprive an authorized user access to CITSS;
- e. Obtain extra resources or login privileges beyond those authorized;
- f. Circumvent CITSS security measures;
- g. Violate copyright law of copyrighted material;
- h. Attempt to disassemble, decompile or reverse engineer CITSS;
- i. Attempt to create derivative works based on CITSS;
- j. Attempt to copy, reproduce, distribute or transfer CITSS;
- k. Provide access to CITSS to any third parties for any improper purpose;
- l. Obtain for personal benefit, or engage in political activity, unsolicited advertising, unauthorized fund raising, or solicit performance of any activity that is prohibited by any local, state, or federal law.

2.3 User's right to access CITSS automatically terminates upon User's violation of any provisions of this Agreement.

2.4 User further agrees that it will immediately inform DEP or the CITSS administrator by emailing help@wci-citss.org or calling at 1-866-682-7561 if any of the following occurs:

- a. User observes any unauthorized access or misuse of CITSS;
- b. User has any reason to believe that the security of their User ID, password, or security question(s) has been compromised;

c. User has any reason to believe that weaknesses in computer security, including unexpected software or system behavior, may result in unintentional disclosure of information or exposure to security threats.

2.5 User further agrees that:

a. User will maintain the security of their CITSS User ID, password, and security questions for use of the CITSS;

b. User will not disclose their CITSS User ID, password, and security questions information to anyone;

c. User will maintain an active email account listed in the CITSS at which User can receive important notifications of changes related to User's personal information or transfers involving any general account or compliance account that User represents as a Primary Account Representative, Alternate Account Representative, Account Viewing Agent, or other CITSS User;

d. Any submission User makes using the CITSS has and will have the same legal effect as if it were made in hardcopy form certified by User's handwritten signature.

2.6 If, at any time, User determines it is no longer able or willing to abide by the terms of this Agreement, User shall immediately cease all use of the CITSS and promptly notify DEP or the CITSS administrator in writing of its determination so that DEP or the CITSS administrator may formally suspend or revoke the User's access to the CITSS.

3. Disclaimer of Warranties

EXCEPT AS REQUIRED BY APPLICABLE LAW, THIS SERVICE IS MADE AVAILABLE ON AN "AS IS" BASIS, WITHOUT WARRANTIES OF ANY KIND. DEP SPECIFICALLY DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE SOFTWARE, OR ANY WARRANTIES REGARDING THE CONTENTS OR ACCURACY OF THE SOFTWARE.

4. Limitation on Liability

4.1 Except to the extent required by applicable law, in no event is DEP liable to User on any legal theory for damages of any kind arising from the use of or the inability to use the CITSS, even if DEP has been advised of the possibility of such damages. The unavailability of, or problems with the use of CITSS, does not excuse User from the reporting and compliance deadlines in the applicable Regulation.

5. Copyright and Proprietary Information

5.1 User shall not permit any person who is not registered as a User to access the CITSS and shall not copy, reproduce or distribute, or allow any other person to copy, reproduce or distribute, the CITSS, in whole or in part, without DEP's prior written consent.

6. Term

This Agreement commences upon User's acceptance of this Agreement and access to the CITSS for the first time. The Agreement shall terminate upon User's written notification to DEP under Section 2.5 of this Agreement or upon other termination or discontinuation of User's access to the CITSS, except that Sections 3, 4 and 5 survive any termination of this Agreement. DEP reserves the right to terminate this Agreement at any time, subject to the exception that Sections 3, 4 and 5 survive any termination of this Agreement.

7. Governing Law and General Provisions

This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania. The failure of DEP to exercise or enforce any right or provision of this Agreement shall not constitute a waiver of such right or provision. If any provision of this Agreement is found by a court of competent jurisdiction to be invalid, the parties agree that the court should endeavor to give effect to the parties' intentions as reflected in the provisions, and the other provisions of the Agreement remain in full force and effect.

This Agreement is not intended to modify and cannot modify any provision in the applicable Regulation, including the Pennsylvania Cap on Greenhouse Gas Emission and Market-Based Compliance Mechanisms. If any part of this Agreement is found to conflict with any provision(s) in the applicable Regulation(s), the applicable Regulation(s) shall control.

This Agreement constitutes the entire agreement between User and DEP with respect to use of the CITSS. There are no understandings, agreements or representations with respect to the software program that are not specified in this Agreement.

This Agreement may only be modified in a writing signed by User and the Secretary of the DEP.

Appendix C: Quarterly Auction and Reserve Sale Dates

EXHIBIT A
IDENTIFICATION OF PETITIONERS

The parties identified below subscribe to and have duly authorized the submission to the Pennsylvania Environmental Quality Board of the attached *Petition Pursuant to 25 Pa. Code §§23.1-23.5, Article I, §27 of the Pennsylvania Constitution, and the Pennsylvania Air Pollution Control Act to Adopt the Attached Regulation Establishing a Comprehensive Program to Limit Greenhouse Gas Emissions to Conserve and Maintain a Stable Climate and Other Public Resources for Which The Commonwealth is a Trustee* and to be identified as Petitioners on said Petition.

1. Clean Air Council
Petitioner Joseph Minott as Executive Director and Chief Counsel and in his individual capacity
135 South 19th Street, Suite 300
Philadelphia PA 19103
215-567-4004

Petitioner Clean Air Council is a member-supported environmental organization headquartered in Philadelphia, Pennsylvania. The Council is dedicated to protecting and defending everyone's right to breathe clean air. The Council works through a broad array of related sustainability and public health initiatives, using public education, community action, government oversight, and enforcement of environmental laws. The Council is currently fighting for strong regulations of carbon dioxide ("CO₂") and methane at both the state and national level. These pollutants make up over 90% of America's greenhouse gas emissions. Due to its emissions of CO₂ and methane, Pennsylvania alone is responsible for a full 1% of the world's greenhouse gasses.

2. Commonwealth Law School Environmental Law and Sustainability Center
John Dernbach, Commonwealth Professor of Environmental Law and Sustainability, in his capacity as Director and in his individual capacity
380 Vartan Way
Harrisburg, Pennsylvania 17106
(717) 541-1933
jcdernbach@widener.edu
3. Robert B. McKinstry, Jr.
Romeade Farm
548 School House Rd.
Kennett Square PA 19348
bobby@robertbmckinstryjr.com
610-444-4449

4. eco(n)law LLC
C. Baird Brown, in his capacity and Principal and in his individual capacity
230 South Broad St.
Philadelphia, PA 19102
215-586-6615
baird@eco-n-law.net

5. Lansdowne Friends School
John R. McKinstry, in his capacity as Head of School and in his individual capacity
Judy N. Asselin, in her capacity Clerk of the School Committee and in her individual capacity
110 Lansdowne Ave.
Lansdowne, PA 19050
610-623-2548
jmckinstry@lansdownefriendsschool.org
judynasselin@gmail.com

6. Physicians for Social Responsibility- Pennsylvania (“PSR”)
Robert Little, MD, President PSR/Harrisburg
4621 Tarryton Road
Harrisburg, Pennsylvania 17109
717-497-9282
rlittle@verizon.net

Walter Tsou, Interim Executive Director, PSR Philadelphia
1501 Cherry Street
Philadelphia, PA 19102
walter@psrphila.org
(267) 519-5299

PSR is a national network of 50,000 members and activists who provide a vital health voice to policy makers and the public. PSR has the science and the credible solutions to combat climate change, nuclear weapons and toxics in the environment.

7. Capital Markets Partnership (“CMP”)
Mike Italiano, CEO
4919 Ashby St., NW
Wash., DC 20007
202-298-6556
mts@sustainableproducts.com

CMP is a nonprofit coalition that defined the business case as released at the NYSE that statistically in 10 years of data, green bonds and their underlying assets are more profitable, less risky, and preferred by investors with over \$70 trillion in assets. With leading investment banks, CMP developed consensus underwriting standards identifying increased green bond cash flow that resulted in higher bond credit ratings, and is structuring green bonds with investment banks,

rating agencies, and investors. CMP is working to stimulate the economy and reduce the near term \$6 trillion / 60 gigatons in carbon pollution identified in the *Business Case*, to keep dangerous climate manageable and allow resilience to work, up 10 times since 2009.

8. Donald A. Brown, Scholar in Residence and Professor of Sustainability Ethics and Law
Widener University Commonwealth Law School
380 Vartan Way
Harrisburg, Pennsylvania 17106
Email: dabrown57@gmail.com
717-802-1009

9. Amy Sinden, James E. Beasley Professor of Law
Temple University Beasley School of Law
1719 N. Broad St.
Philadelphia., PA 19122
asinden@temple.edu
215-204-4969

10. A Call to the Bar: Lawyers for Common Sense on Climate Change
Stephen G. Harvey, in his capacity as President and in his individual capacity
1880 JFK Boulevard, Suite 1715
Philadelphia, PA 19129
steve@calltothebar.org
215-438-6600

A Call to the Bar is a national, nonpartisan, nonprofit group of lawyers, law professors, law students, and citizens that seeks to advance the law with common sense solutions to climate change.

11. Central Philadelphia Monthly Meeting of the Society of Friends
Dana Reinhold, as Clerk and in her individual capacity
1515 Cherry Street
Philadelphia, PA 19102
215-241-7260
Dreinhold99@comcast.net

12. Germantown Monthly Meeting of the Society of Friends
William Cozzens, as Clerk of the Environmental Concerns Committee and in his individual capacity
47 West Coulter Street
Philadelphia PA 19144
215-951-2235
William.cozzens@alumni.upenn.edu

13. Westtown Monthly Meeting of the Society of Friends
Margaret Haviland, as Clerk and in her individual capacity
975 Westtown Road
West Chester, PA 19382
610-344-7613
clerk@westtown.monthlymeeting.net

14. Pennsylvania Environmental Defense Foundation
Ron Evans, President
P.O. Box 371
Camp Hill, PA 17001
pedfinfo@gmail.com

Through legal action, PEDF helps the citizens of PA assert their right to a clean healthy environment.

15. Friends Fiduciary Corporation
Jeffery W. Perkins, Executive Director
1650 Arch Street, Suite 1904
Philadelphia, PA 19103
215-241-7272
info@friendsfiduciary.org

We are a Quaker non-profit organization providing cost effective, professional socially responsible investment management services exclusively to Friends meetings, churches, schools and organizations.

16. Liz Robinson, Executive Director
Philadelphia Solar Energy Association
7821 Flourtown Avenue
Wyndmoor, PA 19038
215-285-2710
Lizrob2@gmail.com

17. Anton Andrew
26 Sothridge Drive
Kennett Square, PA 19348
anewtonandrew@gmail.com
484-202-0965

18. RER Energy Group and Sunvestment Energy Group
Jim Kurtz, President
4700 Pottsville Pike
Reading, PA 19065
610-332-7232
jkurtz@reenergygroup.com

19. Eco-Justice Collaborative of Philadelphia Yearly Meeting
Patricia Finley, Clerk
1515 Cherry St
Philadelphia, PA 19102
267-475-039
finleyp2932@gmail.com
20. Frankford Friends Meeting
Jesse White, Clerk
1500 Orthodox Street
Philadelphia, PA 19118
267-357-7657
Pigeonarts1@gmail.com
21. Chestnut Hill Friends Meeting
Jeff Perkins, Clerk
20 East Mermaid Lane
Philadelphia, PA 19118
215-247-3553
clerk@chestnuthillquakers.org
22. Graboyes Efficiency Tenant, LLC
Sam Klein, MBA, LEED AP, President
4050 South 26th Street, Suite 160
Philadelphia, PA 19112
610-909-5213
sam@graboyes.com
23. Chestnut Hill United Church
Joy Bergey as Director and in her Individual capacity
The Environmental Justice Center of Chestnut Hill United Church
8812 Germantown Ave.
Philadelphia, PA 19118
215-313-1311
joybergey@gmail.com
24. Citizens for Pennsylvania's Future (PennFuture)
610 North Third Street
Harrisburg, PA 17101

PennFuture is the independent, nonpartisan voice leading the transition to a clean energy economy in Pennsylvania and beyond. We are protecting our air, water and land, and empowering citizens to build sustainable communities for future generations.

25. East Marlborough Township
Richard P.S. Hannum, Chairman, Board of Supervisors
Laurie Prysock, Township Manager
721 Unionville Road
Kennett Square, PA 19348
610-444-0725
Rhannum@eastmarlborough.org
lprysock@eastmarlborough.org

26. Geoenergy LLC
Leo Cicone, General Manager
5004 MT. Vernon St.
Suite #1
Temple, PA 19560
610-823-3143
geoenergy@comcast.net

27. Northeast Pa. Audubon Society
Jim Sanders, President
Box 711
Honesdale, PA 18431.
570-253-9250
audubonworks@gmail.com

We are a chapter of National Audubon Society whose mission is "to conserve and restore our environment to benefit humanity as well as birds and wildlife through education, action, and advocacy." We have approximately 500 members in Wayne, Pike, Lackawanna, and Pike Counties in Pennsylvania.

28. Philadelphia Quarterly Meeting (of the Religious Society of Friends)
Hollister Knowlton, Clerk
1515 Cherry Street
Philadelphia, PA 19102
267-971-6800
hollisterknowlton@gmail.com

29. Lansdowne Friends Meeting
Dana Robinson, Clerk
120 N. Lansdowne Ave.
Lansdowne, PA 19050
610-623-7098
fdanarobinson@gmail.com

30. Nottingham Monthly Meeting (also known as Oxford Friends Meeting) of the Religious Society of Friends
Gail Pietrzyk, as Clerk and in her individual capacity
260 S. Third St.
Oxford, PA 19362
(610) 563-0096
gail.pietrzyk@verizon.net
31. Swarthmore Friends Meeting
Lois Sellers, Clerk
12 Whittier Place
Swarthmore, PA 19081
610.328.8699
meeting@swarthmore.edu
32. evolveEA
Marc Mondor, AIA, Principal
6020 Broad Street
Pittsburgh PA 15206
412-362-2100
marc@evolveea.com
33. Melman Security & Communications Corp. dba/ Main Line Security & Energy Services
Andrew J. Melman, President
625 E. Lancaster Avenue
Apt. B102
Wynnewood, PA. 19096
drew@mainlinesecurity.com
34. O'Donnell Roofing Co.
Larry O'Donnell
311 Lenox Road
Havertown, Pa. 19083
610-449-8188
Larry@odonnellroofingco.com
35. Sunrise Energy, LLC
David N. Hommrich, President
151 Evandale Drive
Pittsburgh, PA 15220
412-921-2758
dhommrich@sunrise-energy.net

36. Energy Coordinating Agency
Walt Yakabosky, Director of Training
106 W. Clearfield St.
Philadelphia PA 19133
215-609-1000
Walty@ecasavesenergy.org
37. BrightEye Solar
Jim Noden, CEO/ Founder
1200 Corporate Blvd. Ste. 16
Lancaster, PA 17601
717-207-8449
jim@brighteyesolar.com
38. Adam Solar Resources
Adam Rossi, Owner
1912 Mayview Road
Bridgeville PA 15017
412-220-1900
adam@AdamSolarResources.com
39. Exact Solar
Dara Bortman, Cofounder
1655 Fairfield Road
Yardley, PA 19067
215-621-8353
dara@exactsolar.com
40. REPOWER by Solar Universe of Northeast PA
Tony DellDonna, Owner / Operator
12 Blytheburn Road
Mountain Top PA 18707
570-868-7861
tdelldonna@repoweramerica.solar
41. Evoke Solar, Inc
Wes & Roshelle Checkeye, Owners
323 Linden Avenue,
Hellertown PA 18055
877-714-3228
wes@evokesolar.com
roshelle@evokesolar.com

42. Dynamic Energy Solutions, LLC
Keshika Vasudevan, Financial Analyst
1550 Liberty Ridge Drive, Suite 310
Wayne, PA 19087
877-809-8884
KVasudevan@dynamicenergy.com
43. G.G.E., Inc.
Dale Perry, Project Manager
18 Oak Tree Ct.
W. Middlesex, PA 16159
724-528-2793
DPerry9780@aol.com
44. Vivint Solar
Erica Dahl, Vice President, Public Policy and Government Affairs
1800 W Ashton Blvd.
Lehi, UT 84043
385-455-5501
Erica.dahl@vivintsolar.com
45. Robert Smith, Retired President, National Healthcare Services, In.
9 West Lake Rd,
Bear Creek Village, Pa 18602
570-709-9112
rs12@mac.com
46. Old Haverford Monthly Meeting of the Religious Society of Friends
Stephen Loughin, as Clerk and in his individual capacity
235 East Eagle Road
Havertown, PA 19083
sloughin@gmail.com
47. Temple Environmental Law Society
Annie Fox, in her capacity as Vice-President and in her individual capacity
Student Affairs
Barrack Hall, 103F
1819 N. Broad Street
Philadelphia, PA 19122
347-276-4350
Annie.fox12@gmail.com

48. Lily McIntyre
129 W. Mt. Pleasant Ave.
Philadelphia, PA 19119
215-888-3616
jenniferemcintyre@me.com

Lily was one of the petitioners in *Funk v. Wolf*, 144 A.3d 228 (Pa. Cmwlth. 2016), which sought mandamus to require the Commonwealth to regulate greenhouse gases. The Commonwealth Court specifically found that Lily had “sufficiently alleged facts conferring her standing to assert the claims in the Petition.” 144 A.3d at 246-47.

49. Darius Abrams
5405 Oakland St.
Philadelphia, PA 19124
(15-537-1961
dariusabranshses@gmail.com

Darius was one of the petitioners in *Funk v. Wolf*, 144 A.3d 228 (Pa. Cmwlth. 2016), which sought mandamus to require the Commonwealth to regulate greenhouse gases.

50. Westtown School
Tori Jueds, in her capacity as Head of School and in her individual capacity
975 Westtown Rd.
West Chester, PA 19382
610-399-0123
Tori.jueds@westtown.edu

51. Environmental Rights Institute at Widener University Delaware Law School
Kenneth T. Kristl, Professor of Law and Co-Director of the Environmental Rights Institute
Delaware Law School
4601 Concord Pike
Wilmington, DE 19803
302-477-2053
ktkristl@widener.edu

52. Plymouth Monthly Meeting of the Society of Friends
Paige Menton, Clerk, Peace and Social Concerns Committee
2150 Butler Pike
Plymouth Meeting PA 19462
610-941-4371
paigementon@gmail.com

53. PA Solar Energy Industries Association
Ron Celentano, President
7821 Flourtown Avenue
Wyndmoor, Pa. 19038
215-836-9958
celentanor@aol.com
54. Sustainable Futures Communications Inc.
Maureen Mulligan, Principal
33 Greening Life Lane
Shermans Dale, PA. 17090
717-582-7484
Maureenamulligan1@gmail.com
55. Conservation Voters of Pennsylvania
Josh McNeil, as Executive Director and in his Individual Capacity
P.O. Box 2125
Philadelphia, PA 19103
215-564-3350
Joshua.mcneil@conservationpa.com
56. Kennett Monthly Meeting of the Religious Society of Friends
Barbara Clarke, as Clerk and in her individual capacity
125 W. Sickie St.
Kennett Square, PA 19348
610-444-1012
info@kennettfriends.org
maplelane125@msn.com
57. Goshen Monthly Meeting, Religious Society of Friends
Sallie Welte, on behalf of the Meeting and in her individual capacity
814 N Chester Rd
West Chester, PA 19380
610-306-5718
weltesc@aol.com
- 58.
59. Additional petitioners wish to join this petition and will be added by way of supplementation to this Exhibit.

EQB Climate Petition: Pennsylvania Cap-and-Trade Fact Sheet

- Article I, Section 27 of the Pennsylvania Constitution (“the Environmental Rights Amendment”) provides: “The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment. Pennsylvania’s public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.” This requires the Commonwealth to control greenhouse gas emissions, which pose a threat to human health and the environment, and, at a minimum, to limit such emissions to the extent consistent with the social cost of carbon.
- Given the need to adopt a regulation addressing greenhouse gases, we intend to file a Petition for Rulemaking with the Environmental Quality Board (“EQB”), pursuant to Title 25, Chapter 23 of the Pennsylvania Code, to adopt a proposed regulation establishing an economy-wide auction-cap-and-trade program for Pennsylvania. Adoption of such a program has proven to be an effective means of controlling greenhouse gas emissions in other jurisdictions and would satisfy the requirement under Article I, Section 27. There is considerable legal authority and flexibility to promulgate such a regulation under the Pennsylvania Air Pollution Control Act (“APCA”).
- In two recent landmark decisions, the Pennsylvania Supreme Court confirmed that the Environmental Rights Amendment creates individual rights to a clean environment for all people, including future generations, and creates an enforceable duty for all agencies and entities of the Commonwealth government, both statewide and local, to conserve and maintain the public natural resources of the Commonwealth. Those resources should include a natural climate that is not disrupted by excessive concentrations of greenhouse gases in the atmosphere.
- Section 4005 of the APCA grants EQB the power, and imposes upon it the affirmative duty, to “[a]dopt rules and regulations, for the prevention, control, reduction and abatement of air pollution . . . which shall be applicable to all air contamination sources” and to “[e]stablish and publish maximum quantities of air contaminants.” Greenhouse gases are regulated air pollutants within the meaning of the federal Clean Air Act and the APCA.
- Accordingly, we have drafted a proposed regulation – based on the California auction-cap-and-trade program – that will be attached to the petition. If adopted, the regulation will establish a Pennsylvania program where emissions from covered sources of greenhouse gas emissions would be capped, with the cap declining each year by an amount equal to three percent of 2016 emissions starting with 2018. If the program starts in 2020, the cap that year would be 91% of the baseline. This would put Pennsylvania on track to achieve carbon neutrality by 2052, consistent with the goal established by the United Nations Framework Convention on Climate Change, as defined in the Paris Agreement.
- We are looking to recruit co-signers. Once submitted, the petition will trigger a formal process for consideration under 25 Pa. Code Chapter 23 that will require the Department of Environmental Protection (“DEP”) to review and evaluate the proposal and make recommendations to EQB on how to proceed. Our petition will be supported by a substantial legal and factual record.

Here's how our regulation would work:

- o DEP would auction or distribute allowances equal to the cap, with each allowance equal to one metric ton of CO₂e, as defined and determined under the Environmental Protection Agency's Mandatory Greenhouse Gas Reporting Rule (MRR). Sources that are required to report their emissions under the MRR, or otherwise required to report direct emissions, will be required annually to surrender a number of allowances equal to their total annual GHG emissions (in CO₂e).
- o Distributors of fossil fuels (petroleum fuel and petroleum fuel products, natural gas, propane and natural gas liquids used for fuel, and coal) will be required annually to surrender a number of allowances equal to the total annual GHG emissions (in CO₂e) that will be released into the ambient atmosphere from combustion of the fuels.
- o Sales of fossil fuels to entities required to surrender allowances based on their GHG emissions will be exempt from the requirement for the surrender of allowances. Likewise, sales of fossil fuels that for the purpose of the manufacture of products that will not release GHGs, such as plastics, will be exempt from the requirement for the surrender of allowances. No allowances need to be surrendered for biogenic CO₂ and geologically sequestered CO₂.
- o Most allowances will be distributed by auction, subject to a reserve price that will move towards the social cost of carbon and start initially at \$10/ton and increase by 10% per year plus the rate of inflation, until it reaches the California reserve price. Auctions will occur periodically. If any allowances are unsold, up to 25% will be offered at sale in the next auction (subject to the reserve price) and any allowances that are unsold for more than two years will be retired or placed in an allowance price containment reserve.
- o Industries with products (excluding fossil fuel and electricity generation) subject to international and interstate competition will be entitled to apply to DEP for the distribution of some allowances free of charge, upon a showing that this is necessary to prevent "leakage," which might result if production were moved to other states or nations that do not put a price on GHG emissions. The number of free allowances would initially be based on a company's 2018 GHG emissions and would be reduced by 5% annually. If a company closes, it would lose the right to receive allowances and, if it moves any portion of its production out of the state, the free allowances would be reduced proportionately. DEP would be entitled to distribute free allowances to new businesses subject to international or interstate competition from any unsold allowances or the containment reserve in order to assure that this program does not discourage new business formation. Allowances may be bought by any person and may be freely traded. Allowances may also be banked for future use.
- Because Pennsylvania's greenhouse gas emissions are globally significant, the proposed regulation will represent a significant step in mitigating climate disruption. Pennsylvania's total greenhouse gas emissions in 2014 exceeded all but 21 countries of the world (16 countries exceeded Pennsylvania, while 5 had emissions approximately equal to Pennsylvania).
- Based on the experience of states in the Regional Greenhouse Gas Initiative (RGGI), which is a narrower program, we anticipate that the proposed regulation will result in economic growth, including both job growth and increased gross state product.

Pribulka,David

From: Beverly Corl <bjcorl@hotmail.com>
Sent: Sunday, September 23, 2018 3:27 PM
To: Pribulka,David
Subject: Ferguson Twp. Area Senior Citizens Group

Good morning Mr. Pribulka,

On behalf of the Ferguson Twp. Area Senior Citizens Group and our treasurer, Betty Powley, I am contacting you with a request for a contribution to our group, as you have so generously considered in the past. We are submitting this request for your 2019 Operating Budget. If approved, the check can be mailed to:

Betty Powley
291 East Pine Grove Road
State College, PA 16801

Thank you in advance for considering our request.

Sincerely,
Bev Corl, Secretary
Ferguson Twp. Area Senior Citizens Group

RECEIVED OCT - 9 2018

EVERY GIFT *helps*



October 2018

Mr. David Pribulka, Manager
Ferguson Township
3147 Research Drive
State College, PA 16801

Dear Mr. Pribulka and Supervisors,

For the past 50 years, Home Nursing Agency has been here, serving the people of Ferguson Township. Our staff is comprised of local professionals from the area...friends and neighbors caring for their friends and neighbors. Together, we are making sure that all who call Ferguson Township Ferguson Township home – the children, elderly, poor, sick, and uninsured – will continue to receive the needed care they require.

As the only not-for-profit, charitable home health organization in the region, we have a special commitment to ensuring those who need care receive it, regardless of their ability to pay. Last year, our staff provided 1,728 visits to 66 children and adults in Ferguson Township.

Working together, we can provide the very best healthcare and services at home and in Ferguson Township. I hope you will consider supporting Home Nursing Agency with a contribution of \$500 during your 2018-2019 allocations process. We appreciate your partnership to provide continued access to care for the residents of Ferguson Township.

If you are interested in having me attend a Council meeting to speak further about Home Nursing Agency in your community, please feel free to contact me at khelsel@homenursingagency.com or by phone at (814) 947-7024.

Sincerely,

A handwritten signature in black ink that reads "Kim Helsel".

Kim Helsel

Director of Development/Marketing Communications
Home Nursing Agency

Enclosure

ADMINISTRATIVE OFFICES

201 Chestnut Avenue, P.O. Box 352
Altoona, PA 16603-0352

P: 1.800.992.2554 • 814.946.5411 • F: 814.946.5352

www.homenursingagency.com

A United Way Member Agency

Equal Opportunity Employer

RECEIVED JUN 21 2018



MEMBERSHIP DRIVE

341 Science Park Road | State College, PA 16803 | 814.238.8138 | www.wildlifeforeveryone.org

June 20, 2018

David Pribulka
3147 Research Dr
State College PA 16801-2752

Dear David,

We're kicking off our 2018 summer membership drive and are excited to tell you about a few of the year's highlights! We just wrapped up our Seedlings for Schools program and it's been a banner year with a 70% increase in the number of schools participating. That translates to nearly 65,000 more students getting outdoors and planting trees in the Pennsylvania landscape! Next year we're going to introduce pollinator gardens for schools to plant and nurture.

This past year, we awarded our first class of university students with financial support and internships to advance their career paths. The scholarship fund was established to inspire the next generation of conservationists and present opportunities for students to deepen their connection with nature and wildlife. Look at our website and meet these six extraordinary young people who represent the brightest and best of their generation.

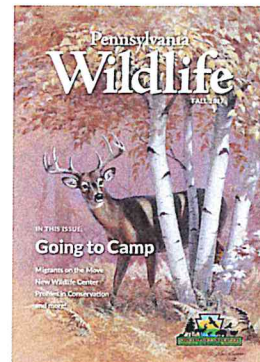
Your membership gift supports initiatives such as the Seedlings for Schools program and the Scholarship Fund, in addition to our bi-annual magazine, *Pennsylvania Wildlife*, and most importantly our mission to promote wildlife conservation and education in Pennsylvania. Our goal this year is to enlist 500 new members to the ranks of the Wildlife for Everyone Foundation.

Thank you again for your support. You keep our foundation going and growing!

Yours in Conservation,

A handwritten signature in black ink that reads "Jerry".

Jerry Regan
President





Leadership
Centre County

August 13, 2018

Dear Ferguson Township Board of Supervisors,

Thank you for this opportunity to partner with Ferguson Township. Our idea to host an open house for citizens interested in becoming more informed and engaged through their participation in LCC is new this year! We've never had an open house for this purpose and hope you can support us in this endeavor.

Our proposal for the Open House is that Ferguson Township would be the only sponsor for this new event. And to answer Laura's question – YES! We have many other sponsors for our various programs and workshops (see enclosed listing).

Our sponsors make it possible for us to provide quality programming that impacts each participant and through them – over 600 nonprofit organizations they volunteer in throughout Centre County.

Enclosed in this packet is information that will answer some of the questions you had at your meeting on August 6th. I plan to attend on the 20th to answer any further questions you might have.

Thank you so much for your consideration.

Sincerely,


Georgia Abbey
Executive Director



COMMUNITY DIVERSITY
CONFERENCE

Embracing & Implementing Inclusion

June 2018

Dear Community Partner,

We sincerely appreciate your continued sponsorship and support of the Community Diversity Conference. We are proud to announce that we will offer our third conference on **Tuesday, June 11, 2019 at the Penn Stater Conference Center Hotel**. As such, we want to encourage you to Save the Date and plan to attend.

We are providing this information early in hope that you will consider including your sponsorship in your annual budget. Your commitment to enhance community relations and increase awareness about diversity makes an impact in Centre County. Your participation and support through a financial contribution, donation of prizes, products or gift certificates is tax exempt. Please take a moment to review options below and select your level of sponsorship for 2019:

Beyond Diversity Sponsor	\$500 or more
Social Justice Sponsor	\$250-\$499
Sustainability Patron	\$100-\$249
Cultural Dexterity Donation	Donated items for raffle prizes, gift certificates, products etc.

Please Note: With donations of \$250 or more, your organization's information will be included in the program and on the CDG's website with a link to your organization. **Your commitment is needed by December 14, 2018.**

As a reward for your continued sponsorship we are offering you:

1. One complimentary registration that may be used by you or a designated staff member
2. A table at our pre-conference Recruitment Fair
3. Complimentary admission to the Networking Social directly following the conference

Please join us at the diversity conference, promote your business, and enhance your name recognition throughout the community as an organization that supports diversity and inclusion which builds a richer community for all.

Your generosity makes a world of difference and is greatly appreciated.

Please visit our website or for additional information or call Carol at 814-865-6614.

We thank you in advance for your consideration and support of this worthy endeavor. Together, we are implementing inclusion.

Carol Eicher

Carol Eicher, President

Leslie Laing

Leslie A. Laing, Co-Chair

Kevin Kassab

Kevin Kassab, Co-Chair

The Community Diversity Group (CDG) is a non-profit 501 (c)(3) coalition with representatives from the citizens of Centre County, businesses of Centre County, employees of Penn State, local governments, and local non-profit organizations. Our goal is to create a welcoming climate for all community members. We host diversity-focused events and use publicity efforts designed to educate the community as to the significance of cultural sensitivity. The CDG offers training, consulting, and a monthly calendar of diversity events. Your contribution is tax-deductible. Open public meetings are held on the first Tuesday of each month. Become a member and make a difference. Visit our website for additional opportunities: www.CommunityDiversityGroup.squarespace.com.





COMMUNITY DIVERSITY
CONFERENCE

Embracing & Implementing Inclusion

2019 Conference Sponsorship

Thank you for your interest in supporting the Community Diversity Conference. To become a sponsor, please complete the following information below:

Circle one: **Business** **Organization** **Individual**

Contact Name: _____ Business/Organization: _____

Address: _____ Phone Number: _____

_____ Email Address: _____

Sponsorship Level Desired:		Amount
Beyond Diversity Sponsor	\$500 or more	_____
Social Justice Sponsor	\$250-\$499	_____
Sustainability Patron	\$100- \$249	_____
Cultural Dexterity	Donated items for raffle prizes, gift certificates, food or beverage service and any other amounts	_____ (Value of Gift)

Please Note: If you donate \$250 or more, your organization's logo and website information will be included in the program, on CDG's website with a link to your organization, and on the lunchtime slide show. We will need a high-quality color JPEG or PDF copy of your logo for promotional purposes. Please send the logo to: CommunityDiversityGroup@gmail.com.

Please make checks out to the **Community Diversity Group**.

MAIL YOUR SPONSORSHIP FORM AND PAYMENT TO:

Community Diversity Group, P.O. Box 933, State College, PA 16803-0933, c/o Community Diversity Conference

Authorized Representative:

Print Name: _____ Signature: _____ Date: _____

Thank you for your generous support.

RESOLUTION NO. 2012-14

A RESOLUTION ESTABLISHING A DONATION POLICY FOR NON-PROFIT ORGANIZATIONS SERVING THE TOWNSHIP OF FERGUSON AND THE CENTRE REGION

WHEREAS, the Board of Supervisors is responsible for annually appropriating funds as part of the budgeting process and

WHEREAS, the Board of Supervisors annually receives requests for funding from various non-profit community organizations for many worthwhile initiatives and

WHEREAS, the Board of Supervisors desires to establish a policy to guide its decisions in appropriating the limited township financial resources.

NOW THEREFORE, the Ferguson Township Board of Supervisors hereby establishes a Donation Policy attached hereto as Exhibit "A".

RESOLVED this 4th day of June, 2012.

TOWNSHIP OF FERGUSON

By: 
George Pytel, Chairman
Board of Supervisors

[S E A L]

ATTEST:

By: 
Mark A. Kunkle, Secretary

Ferguson Township Donation Policy

Purpose/Mission Statement

The purpose of this policy is to structure donations of the Township's resources in limited amounts to non-profit organizations for purposes related to the well-being and growth of the community.

The objectives of this policy are:

- Ensuring that Ferguson Township treats all donation requests and contributions fairly and responsibly
- Ensuring uniform standards and procedures respecting the provision and administration of donation contributions by the Township
- Provide guidelines and standards for donation contributions from Ferguson Township

Eligibility

Monetary donations will only be considered for a 501c (3) non-profit organization. The donation must be used for the benefit of at least one of the following purposes:

- Health
- Education
- Community Services
- Youth and Senior Activities
- Cultural/Heritage
- Township Neighborhood Projects
- Environmental
- Township and Regional Special Events
- Township Beautification

We do not consider requests from the following:

- Requests from individuals
- Religious groups
- Political parties, candidates or causes
- Incomplete applications
- Requests with less than proper notification

Guidelines

- The community group/organization shall be based within the Centre Region with preference to those located in Ferguson Township.
- All requests for donations should be directed in writing on typed letterhead to the Ferguson Township Board of Supervisors. Must be mailed or fax only, no email or phone requests. Letter request must be two pages or less.
- Corresponding Application must be attached to the letter request.
- In making donations, Ferguson Township may impose such conditions and/or restrictions as it deems fit. The municipality's decisions are final.
- Request less than \$1000 must be submitted 30 days prior to the event. All requests will be assessed based on the availability of Township resources, potential financial impact to the Township, contribution to the members of the community, recognition of a worthwhile program/cause and overall community impact.
- Applicants must prove need for request. They must identify a specific defined benefit (listed above) and outcome. Each request must contain the date, hours, and requested Township resource.
- Detailed description of how the monetary donation will be used (a budget justification)
- Request must not exceed the amount of \$1000.00

Municipal Review

- All requests for financial donations will be considered having regard to the Township's current budget. Under normal circumstances, only one request per organization is to be considered in a calendar year.
- Applications will be reviewed for completeness, accuracy, and compliance with this policy
 - Incomplete applications will be returned to organizations, with a list of additional information that is required
 - Applications that don't comply with this policy will be returned with an explanation of why.
- All donations will be assessed in terms of the need for the project; cost effectiveness, financial viability; contribution to the community and the community involvement/response.
- Applications will be submitted to the Township Manager and will be reviewed by two Board members and a staff person assigned by the Township Manager.
- The review panel will forward a recommendation on each application to the Board of Supervisors.

CENTRE REGION COUNCIL OF GOVERNMENTS

2643 Gateway Drive, Suite 3

State College, PA 16801

Phone: (814) 231-3077 • Fax: (814) 231-3083 • Website: www.crcog.net

PUBLIC SAFETY COMMITTEE

COG Forum Room

2643 Gateway Drive

Tuesday, January 8, 2019

12:00 Noon

AGENDA

1. CALL TO ORDER

Mr. Steve Lyncha will convene the meeting.

2. CITIZEN COMMENTS

Members of the public are invited to comment on any items not already on the agenda (five minutes per person time limit, please). Comments relating to specific items on the agenda should be deferred to that point in the meeting.

3. APPROVAL OF MINUTES

Copies of the minutes from the September 11, 2018 meeting of the COG Public Safety Committee and the November 13, 2018 joint meeting of the COG Public Safety and Public Services and Environmental Committees are *enclosed*.

4. ELECTION OF OFFICERS

The Committee should elect a Chair and a Vice Chair for 2019. During 2018, Mr. Steve Lyncha (College Township) served as Chair and Ms. Cathy Dauler (State College Borough) served as Vice Chair. The 2018 members of the Public Services Committee are:

Randy Brachbill Don Holderman (alternate)	Bellefonte Borough
Steven Lyncha	College Township
Sara Carlson	Ferguson Township
Mark Stevenson	Halfmoon Township
Nigel Wilson	Harris Township
Dan Trevino George Downsborough Jr. Alternate	Patton Township
Cathy Dauler	State College Borough

5. MEETING DATES, TIME, AND LOCATION

The Public Safety Committee should choose the location, time, and dates for its 2019 meetings. During 2018, the Committee met on the second Tuesday of the month at 12:00 Noon in the Forum Room of the COG Building.

In the past, COG Committees have tried to schedule their meetings during the first two weeks of the month. This sequencing provides adequate time to refer issues to the Executive Committee and General Forum for action.

6. COG ARTICLES OF AGREEMENT

Mr. Steff, COG Executive Director, will briefly review the COG Articles of Agreement as they relate to the Public Safety Committee. According to the Agreement, the duties of the Committee are:

- *To study and prepare recommendations on emergency management, fire protection, emergency medical services, and code administration as requested by the Executive Committee.*
- *To provide policy guidance on the operation, apparatus, and facilities of the Regional Fire Protection program and to prepare recommendations for the General Forum.*
- *To provide policy guidance on the operation of the Centre Region Code Administration (CRCA) agency and to make recommendations for permit fee and policy changes to the participating municipalities through the General Forum.*
- *To consider for possible referral to the General Forum, recommendations from the Centre Region Emergency Management Council regarding the joint emergency management program.*
- *To coordinate studies, plans, and proposals with the Public Services & Environmental Committee as they relate to energy, energy conservation, or environmental sustainability.*
- *To consult with the fire and emergency services providers regarding the emergency services needs of the Centre Region municipalities and to prepare recommendations for addressing those needs for the General Forum to consider.*

7. MEETING ETIQUETTE GUIDELINES

Mr. Steff will briefly review the enclosed COG Resolution for Meeting Etiquette as well as the Guidelines for Meeting Etiquette. During its November 26, 2018 meeting the General Forum adopted the Resolution and the corresponding Guidelines for Meeting Etiquette. The intent of these documents is to encourage all COG related entities to foster and maintain an environment in which all individuals are treated with respect and dignity. The *Code of Conduct* section of the Guidelines

offers suggestions for behavior at meetings. The *Notes for the Chair* section provides insights for meeting facilitation.

In combination the *Code of Conduct* and *Notes for the Chair* sections will help to set a welcoming tone for Committee members who want to offer new ideas or provide comments on agenda items.

8. CODE BOARD OF APPEALS – APPOINTMENT & RE-APPOINTMENTS

Traditionally, the Public Safety Committee is asked to make recommendations to the General Forum for appointments and re-appointments to the Centre Region Building and Housing Code Board of Appeals. The General Forum then reviews and may endorse the Public Safety Committee recommendations and refers them to the participating municipalities for appointment. An appointment to the Board of Appeals includes a three-year term, and members may serve a maximum of three consecutive terms or a total of nine years.

Municipalities in Pennsylvania are required by the Uniform Construction Code (section 501(c) of the Act (35 P. S. § 7210.501(c)) to establish and appoint members to serve on a board of appeals. According to the UCC, the “*board of appeals shall hear and rule on appeals, requests for variances and requests for extensions of time. An application for appeal shall be based on a claim that the true intent of the act or Uniform Construction Code has been incorrectly interpreted, the provisions of the act or Uniform Construction Code do not fully apply or an equivalent form of construction is to be used.*” The UCC also provides that “*two or more municipalities may establish a joint board of appeals through an intermunicipal agreement under 53 Pa.C.S. § § 2301–2315 (relating to intergovernmental cooperation).*” The six Centre Region municipalities have adopted ordinances to establish and maintain a regional board of appeals through the Centre Region COG.

This year, there are no new appointment and three re-appointments being recommended.

The three recommendations for re-appointment to an additional three-year term are:

Core Board: Adam Fernsler, P.E., LeeDAP
Core Board: J. Michael Leakey, RA (Alternate)
Property Maintenance Board: Sarah K Lowe

To proceed with the re-appointment of these individuals, the Public Safety Committee should consider forwarding the following motion to the Executive Committee for referral to the General Forum:

"That the General Forum forward the following slate of nominations to the member municipalities for re-appointments to the Centre Region Building

and Housing Board of Appeals for a three (3) year term commencing February 25, 2019:

*Core Board: Adam Fernsler, P.E., LeeDAP
Core Board: J. Michael Leakey, RA (Alternate)
Property Maintenance Board: Sarah K Lowe”*

9. STAFF UPDATES TO THE COMMITTEE

COG Staff will provide updates on the following topics:

- **Code Administration (Walt Schneider)** – The Code Director will report on the following:
 - Upcoming and continuing major construction projects in 2019
 - Upcoming customer satisfaction survey
- **Fire Protection (Steve Bair)** – The Fire Director will report on the following:
 - Despite an unusually busy January, 2018 ended as an unusual year with a 4% decrease in incident volume. This is only the 2nd time in the past twelve years where incident volume decreased from a prior year. Most of the decrease occurred in the second half of 2018. A detailed analysis is underway as part of the normal year-end review to identify the contributing factors to this change. Despite the reduction in incident responses, Alpha Fire Company responded to 1,300 incidents in 2018 which is a large volume for a mostly volunteer fire company.
- **Emergency Management Program (Shawn Kauffman)** – The EM Coordinator will provide an update on items of interest to the Committee.

8. APPOINTMENT OF ALPHA FIRE CHIEFS

This agenda item asks the Public Services Committee to review a recommendation from the Alpha Fire Company regarding the appointment of its Chiefs and Assistant Chief and to refer this recommendation to the General Forum for approval.

During its August 27, 1996 meeting, the General Forum approved an agreement between the Centre Region COG and the Alpha Fire Company which defines each entity’s responsibilities. Section 2 of the Agreement reads:

“The Company shall select a Fire Chief and Assistants, in accordance with its by-laws. The names of these individuals shall be forwarded to the Centre Region COG for appointment.”

During its November 6, 2018 meeting, the Company elected their leaders for 2019. To confirm these recommended appointments, the Public Safety Committee should consider recommending the following motion to the General Forum:

“That the General Forum appoint the following individuals to the positions of Fire Chief and Assistant Fire Chiefs for 2019:

<i>Chief</i>	<i>Jason Troup</i>
<i>1st Assistant Chief</i>	<i>Tony Berrera</i>
<i>2nd Assistant Chief</i>	<i>Buck Harpster</i>
<i>Health & Safety Officer</i>	<i>Svend Pedersen”</i>

For informational purposes, the Alpha Fire Company elected the following Corporate Officers to serve in 2019:

2019 Corporate Officers

President	Shawn Kauffman
Vice President	Svend Pedersen
Treasurer	Brian Bittner
Secretary	John Domico
Financial Secretary	Ron Witmer
Trustee	Ted Gabriel – serving year 3 of a 3 year term
Trustee	Lyle Domico – serving year 2 of a 3 year term
Trustee	Joe Wirtz – serving year 1 of a 3 year term

For informational purposes, the 2019 Operations Officers of the Alpha Fire Company are:

Rescue Captain	Todd Johnson
Engine Captain	Mark Jermusyk
Truck Captain	Randy Clouser
Engine Lieutenant	Mike Eckenrode
Engine Lieutenant	Rob Nese
Engine Lieutenant	Steve Brown
Rescue Lieutenant	Jeff Watson
Truck Lieutenant	Brian Rohrbaugh
Fire Police Captain	C. “Marv” Robinson
Fire Police Lieutenant	Open
Fire Police Lieutenant	Ken Johnston
Fire Police Lieutenant	Ted Gabriel

For informational purposes, the 2019 Chiefs, Safety Officer, Fire Police Captain, and Corporate Officers of the Boalsburg Fire Company are:

Chief	Van Winter
Assistant Chief	Rob Gordon
Assistant Chief	Mike Weyant
Assistant Chief	Nate Frey
Assistant Chief	Greg Alters
Safety Officer	Paul Robinson
Fire Police	Mike Gibboney
President	Ken Corl
Vice President	Marlin Neff
Secretary	Kayla Weyant
Treasurer	Teresa Weyant
Trustees	Bud Graham, Randy Weaver, Jeff Musser

9. FUTURE COMMITTEE ACTIVITIES

Following is a list of potential agenda items that may be considered by the Public Safety Committee in 2019:

- a. Codes: Review recommendations from the Centre Region Code Administration Director regarding the appointment of reappointments of members to the Centre Region Building and Housing Code Board of Appeals and to refer this recommendation to the General Forum for approval (February).
- b. Future model for the delivery of Centre Region hazmat services. During its June 12, 2018 meeting the Committee endorsed a creation of a COG/PSU/Firemens' Relief Association Committee to review the current way hazmat services are provided and whether changes should be made in the future (February).
- c. Code: On-going discussion relating to problems of commercial construction project obtaining electrical service connections in a timely way. The Committee will be asked whether it wishes to take an official position on this topic (February)
- d. Decide whether a study should be conducted in 2019 to evaluate and make recommendations on the future of the regional fire protection program. If approved, this would be third evaluation of the program in the last 25 years. If this project is endorsed then a Request for Proposals should be drafted during 2019 (March).
- e. Code: Updates on the implementation of the regional Sewage Enforcement Management (SEO) program (March)
- f. Fire: Review funding from the State College Firemens' Relief Association to the COG's Capital Budget for apparatus replacement.

- g. Emergency Management: Update the emergency services agreement between Penn State University and the COG. This agreement will require the approval of the General Forum (March).
- h. Emergency Management: Schedule a meeting with emergency medical service providers to identify potential concerns. The General Forum is also interested in this topic (April).
- i. General: Review the 2019 Program Plan proposals for the Code Agency, Fire Protection Program, and Emergency Management Program. (May/June 2019).
- j. Fire: Staffing of the Regional Fire Protection program. How effective were the increases in the annual stipends in attracting and retaining volunteers (Prior to June).
- k. Fire: Funding options for the Regional Fire Protection program. The Finance Committee will also be looking into alternative funding ideas (for example impact fees) during the year (Prior to June).
- l. Fire: Discussion whether a paid (for example through a stipend) Deputy Emergency Management Coordinator should be appointed (prior to June).
- m. Code: Receive a report from a COG/municipal staff committee regarding the options to current Tyler software package used by the Code Agency and several of the municipalities (Prior to June 2019).
- n. General: Review the draft 2020 Code Agency, Fire Protection Program, and Emergency Management Program budgets (mid 2019).
- o. Codes: Review the results of a customer satisfaction survey. (June/July).
- p. Codes: The Committee will prepare a recommendation on building, fire, and rental housing permit fees for 2020 (July/August 2019).
- q. General: Conduct an annual joint Public Safety and Public Services & Environmental Committee meeting of fire, police, PennDOT, and utility providers to review emergency response plans (late 2019).
- r. Fire: Discussion of how calls for non-fire related situation (for example, people stuck in elevators and local maintenance staff is not available) are impacting the work load and what should be done about it (Prior to December).
- s. Code: Update the Articles of Agreement for the Centre Region Building and Housing Code Board of Appeals (Prior to December).
- t. Emergency Management: The Emergency Management Coordinator will update the Committee on updates to the Centre Region/Penn State Emergency Operations Plan (August/September).

10. OTHER BUSINESS

- A. Matter of Record - The December 2018 monthly comparison of code statistics, permits issued/permits closed reports will be distributed at the meeting. The October 2018 comparison of monthly existing structures code statistics are enclosed.

It should be noted that from January 1, 2015 to December 31, 2018, about \$1.1 billion in new construction has occurred in the Centre Region and Bellefonte Borough.

- B. Matter of Record - As a member of the General Forum you are invited to a Lunch and Learn session about the State College Borough Water Authority, the main water service provider in the Centre Region.

Mr. Brian Heiser, the Authority's Executive Director, will lead the session. He will provide a brief history of the Authority, water sources, major challenges including growth and regulatory, infrastructure replacement/improvements (there are some big projects coming up), and financing and rate structures.

The session will start at **12:00 Noon, Wednesday, January 30, 2019**. It will include lunch, and lasts about 90 minutes. The Lunch and Learn will be held at the Water Authority building, 1201 Branch Road. If you want to attend please contact Cheryl Stamm, COG Office of Administration, at 231-3077 or cstamm@crcog.net. Also please let Cheryl know if you have any dietary restrictions or if there are other topics you want Mr. Heiser to address.

11. ADJOURNMENT

CENTRE REGION COUNCIL OF GOVERNMENTS

2643 Gateway Drive, Suite #3

State College, PA 16801

Phone: (814) 231-3077 • Fax: (814) 231-3088 • Website: www.crcog.net

AD HOC FACILITIES COMMITTEE

COG Forum Room

Wednesday, January 9, 2019

8:30 AM

AGENDA

1. CALL TO ORDER

Mr. Harden will convene the meeting.

2. CITIZEN COMMENTS

Members of the public are invited to comment on any items not already on the agenda (five minute per person time limit, please). Comments relating to specific items on the agenda should be deferred until that point in the meeting.

3. APPROVAL OF MINUTES

A copy of the minutes of the December 4, 2018 Ad Hoc Facilities Committee meeting is **enclosed.**

4. ELECTION OF OFFICERS

The Committee should elect a Chair and Vice Chair for 2019. During 2018, Mr. Harden served as Chair and Mr. Francke served as Vice Chair. The 2019 membership of the Ad Hoc Facilities Committee is as follows:

Rich Francke	College Township
Patti Hartle	Halfmoon Township
Frank Harden	Harris Township
Peter Buckland	Ferguson Township
Dan Trevino	Patton Township
Dan Murphy	State College Borough

5. MEETING DATE, TIME & LOCATION

The Ad Hoc Facilities Committee should choose the date, time, and location for its 2019 meetings. During 2018, the Committee met on the first Tuesday of the month at 8:30 AM in the COG General Forum Room.

In the past, COG committees have tried to schedule their meetings during the first two weeks of the month. This sequencing provides adequate time to refer issues to the Executive Committee and the General Forum for action.

6. COMMITTEE CHARGE

The Executive Director will briefly review the charge of the Ad Hoc Facilities Committee. According to the Agreement, the duties of the Committee are:

The recommended goals of Facilities Committee are:

- 1) Improve the data surrounding the capital improvement and replacement plan as it pertains to the capital needs, whether that be new or replacement, of the various facilities owned or rented by the COG.
- 2) To plan for future COG facilities on an organization wide basis.

The overall responsibilities of the Facilities Committee are to:

- To gain an understanding of the current facilities owned, rented and operated by the Centre Region COG, Schlow Centre Region Library, and the Centre Region Parks and Rec Authority.
- To aid in the implementation of a maintenance plan for the current COG facilities.
- To plan appropriately for obsolescence and replacement needs.
- To assess the facilities operated by COG and compare them to the current and anticipated future needs for the COG, Schlow Library and the Parks and Rec Authority
- Develop a plan to address the current and future needs of COG, as they relate to its facilities, while remaining within the desired current and future funding constraints.

7. MEETING ETIQUETTE GUIDELINES

Mr. Steff will briefly review the **enclosed** approved Resolution for Meeting Etiquette as well as the Guidelines for Meeting Etiquette. During its November 26, 2018 meeting the General Forum adopted the Resolution and the corresponding Guidelines for Meeting Etiquette. The intent of these documents is to encourage all COG related entities to foster and maintain an environment in which all individuals are treated with respect and dignity.

The *Code of Conduct* section of the Guidelines offers suggestions for behavior at meetings. The *Notes for the Chair* section provides insights for meeting facilitation. In combination the *Code of Conduct* and *Notes for the Chair* sections will help to set a welcoming tone for Committee members who want to offer new ideas or provide comments on agenda items.

8. PLANNING GUIDE FOR MAINTAINING SCHOOL FACILITIES – CHAPTER 1

At its December 4, 2018 meeting the Chair requested that the members of the Committee review Chapter One of the Planning Guide for Maintaining School Facilities. The link to the document is <https://nces.ed.gov/pubs2003/2003347.pdf>.

The plan was for the Committee members to discuss the chapter and provide comments and direction for the Committee. Specifically the questions are:

- Are top-level decision-makers aware that **school** facilities maintenance affects the **instructional operational** and financial well-being of the organization?
- Are top-level decision-makers aware that the occurrence of facilities problems (and lack thereof) is most closely associated with organizationally controlled issues such as staffing levels, staff training, and other management practices?
- Are top-level decision-makers aware that having a coordinated and comprehensive maintenance plan is the first and most important step in exercising control over the destiny of the organization's facilities?
- Has facilities maintenance been given priority status within the organization, as evidenced by top-level decision-makers' commitment to read this *Planning Guide* and refer to these guidelines while planning and coordinating facilities maintenance?
- Do the organization's facilities maintenance decision-makers include **school** administrators, facilities/custodial representatives, **teachers, parents, students,** and community members?

The Committee members should discuss each question, placing a value on its importance to the plan on how COG should maintain its facilities. From there the Committee should decide if and who the person assigned to the task should be and whether or not it has been accomplished already. If the task has not been accomplished, the Committee members should discuss and define parameters they deem important for the person assigned to follow in accomplishing the task.

This agenda item is for discussion only and does not require Committee action.

9. DRAFT FACILITIES MANUAL

At its December 4, 2018 meeting the Chair requested that the members of the Committee review the Draft Facilities Manual and provide comments to the Finance Director no later than January 4, 2019. As of the date of the agenda distribution, there have not been any comments received although additional comments are still welcomed to be discussed at any

time. From there the Finance Director was to update the Facilities Manual for the Committee to review at its January meeting.

Enclosed is the updated Draft Facilities Manual. The Committee should review and discuss the updated manual and provide comment. As a reminder, this manual is to be used as a tool by the COG facilities managers to provide a standardized assessment of the condition of each facility to the Committee.

10. FINANCE COMMITTEE REPORT

The Finance Committee has not met since the December 4, 2018 Facilities Committee meeting. The next meeting will occur on Thursday, January 10, 2019.

11. FUTURE COMMITTEE AGENDA ITEMS AND PRIORITIES

This agenda item asks the Facilities Committee to review the following list of Committee agenda items and identify topics that should be added, deleted, or revised. After that process is complete, the Committee is asked to identify those topics of highest priority.

For 2019, the following is a list of potential agenda items that may be considered by the Facilities Committee:

1. General: Are there larger issues the Committee would like to discuss during 2019? For instance, are there other opportunities for the municipalities to work together through the COG or as a result of a regional discussion facilitated by the COG?
2. General: Possibly recommend to the Finance Committee a study for the COG Building that will identify and provide cost estimates on options to address office and parking space limitations. If this study is to proceed, an amendment to the 2019 COG budget will be needed (See the Matter of Record).
3. General: Possibly receive a recommendation from the Ad Hoc COG Facilities Committee regarding the need for a COG facility manager beginning in 2021.
4. General: Discuss funding of COG's capital budgets (especially MMNC, Library and Pools).
5. General: Develop a Facilities Manual for COG facilities managers to follow to provide the Committee with an assessment of each facility on a consistent and comprehensive basis.
6. General: Through the use of the Planning Guide for Maintaining School Facilities, develop a strategic plan/set of standards for the Ad Hoc Facilities Committee to follow for maintaining the various COG owned and leased facilities throughout the region in a forward thinking and cost effective manner.

7. General: Review the custodial needs for COG from a global perspective and determine if there is a more cost effective way to provide these services.

This agenda item is for discussion only and does not require action from the Ad Hoc Facilities Committee.

12. OTHER BUSINESS

- A. Matter of Record - COG staff is continuing to draft a request for proposal for consulting services to evaluate the COG Building in terms of future space needs and options for addressing those needs.

13. ADJOURNMENT

CENTRE REGION COUNCIL OF GOVERNMENTS

2643 Gateway Drive, Suite 3

State College, PA 16801

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HUMAN RESOURCES COMMITTEE

COG Forum Room

2643 Gateway Drive

Wednesday, January 9, 2019

12:15 PM

AGENDA

1. CALL TO ORDER

Chairman Nigel Wilson will convene the meeting.

2. CITIZEN COMMENTS

Members of the public are invited to comment on any items not already on the agenda (five minutes per person time limit, please). Comments relating to specific items on the agenda should be deferred until that point in the meeting.

3. APPROVAL OF MINUTES

A copy of the minutes from the December 5, 2018 Human Resources Committee meeting is **enclosed** for approval.

4. COMMITTEE PICTURES

COG Staff would like to take a picture of Committee members to include on our webpage that discusses the Human Resources Committee. COG believes it would add a personal touch and help residents identify their elected officials when needing to reach out to them.

5. ELECTION OF OFFICERS

The Committee members should elect a Chair and a Vice Chair for 2019. During 2018, Mr. Wilson served as Chair and Mr. Fragola served as Vice Chair, the unofficial 2019 roster, is as follows:

Anthony Fragola*	College Township
Tony Ricciardi*	Ferguson Township
Bob Strouse*	Halfmoon Township
Nigel Wilson*	Harris Township
Jessica Buckland*	Patton Township
David Brown	State College Borough*

*Subject to change following the Municipal Reorganizational Meetings on 1/7/2019

6. MEETING DATES, TIMES, AND LOCATION

The Committee members should choose the time, location, and dates for their 2019 meetings, *including January 2020*. Most recently during 2018, the Committee met on the first Wednesday of the month at 12:15PM in the COG Forum Room. In the past, COG committees have tried to schedule their meetings during the first two weeks of the month. This sequencing provides adequate time to refer issues to the Executive Committee and the General Forum for action.

7. COG ARTICLES OF AGREEMENT

Mr. Steff will briefly review the COG Articles of Agreement as it relates to the Human Resources Committee. According to the Agreement the duties of the Committee are:

- i. To periodically review the Centre Region COG's Personnel Policy, Position Classification Plan and Employee Evaluation Procedures to keep them current and operating effectively.
- ii. To approve new or revised job descriptions as proposed by the Executive Director.
- iii. To serve as the Grievance Resolution Committee and to perform other personnel duties as identified in the COG's Personnel Policy or other related policy documents.
- iv. To study and prepare recommendations on the Centre Region COG personnel policies and procedures as requested by the Executive Committee.

8. MEETING ETIQUETTE GUIDELINES

Mr. Steff will briefly review the **enclosed** Resolution for Meeting Etiquette as well as the Guidelines for Meeting Etiquette. During its November 26, 2018 meeting the General Forum adopted the Resolution and the corresponding Guidelines for Meeting Etiquette. The intent of these documents is to encourage all COG related entities to foster and maintain an environment in which all individuals are treated with respect and dignity. The *Code of Conduct* section of the Guidelines offers suggestions for behavior at meetings. The *Notes for the Chair* section provides insights for meeting facilitation. In combination the *Code of Conduct* and *Notes for the Chair* sections will help to set a welcoming tone for Committee members who want to offer new ideas or provide comments on agenda items.

9. GRIEVANCE RESOLUTION COMMITTEE

The COG's Personnel Policy establishes a Grievance Resolution Committee, comprised of three representatives of the Human Resources Committee and two representatives of the affected agency board. The purpose of the Grievance Resolution Committee is to hear appeals of disciplinary actions and employee grievances.

The Human Resources Committee's representatives during 2018 were Messrs. Fragola, Strouse and Wilson. The Human Resources Committee should appoint its three representatives to serve on the Grievance Resolution Committee during 2019.

10. ANTI-HARASSMENT POLICY

Under the terms of the COG's Harassment Policy, the Human Resources Committee should designate one female and one male to review informal harassment complaints. During 2018, Ms. Buckland and Mr. Ricciardi were the designated individuals. The Human Resources Committee should appoint two individuals (one female and one male) to serve during 2019.

11. PERSONNEL POLICY HANDBOOK REVISIONS

The draft Personnel Policy Handbook was reviewed and discussed by the HR Committee at their December 2018 meeting. This agenda item asks the HR Committee to review the 2nd draft of the Personnel Policy Handbook **enclosed**.

To make it less cumbersome for the Committee, staff documented the larger changes on the **enclosure** titled Personnel Policy Handbook Revisions and Highlights. This list corresponds with the yellow highlights in the 2nd draft version.

The Committee should review and discuss the changes and consider a motion to forward the draft COG Personnel Policy Handbook on for legal review, prior to the General Forum's review.

12. OFFICE OF ADMINISTRATION - JOB DESCRIPTION (EXECUTIVE DIRECTOR)

COG Resolution 87-6, signed in August 1987, upgraded the position of the Director of Administration to that of the Executive Director of the Centre Region Council of Governments. The resolution outlines the powers and duties of the position, as well as an employment agreement that was approved by the General Forum in September 2004 between the Executive Director and the Centre Region Council of Governments. In addition, the position is described in the 2008 COG Articles of Agreement, however, the position of Executive Director does not have an official job description. **Enclosed** please find a draft copy of the job description for the Executive Director position. The

Committee should review and provide comment on the job description. If there are no changes, the Committee should consider the following motion:

“That the COG Human Resources Committee approved the job description for the COG Executive Director, dated December 20, 2018, and its assignment to Pay Grade E91.”

13. SCHLOW - JOB DESCRIPTION (CATALOGING & DISCOVERY LIBRARIAN)

During the 2019 budget process, it was proposed that the position of the current Library Technician in the Technical Services Department at Schlow be upgraded to Cataloging and Discovery Services Librarian. This change was prompted by Schlow’s creation and expansion of the virtual branch in 2015. The virtual branch integrates a customizable catalog and website and improved the way patrons interact with the library online. This development created many new tasks for staff, especially the Library Technician.

The job tasks required now consist of tracking and applying standards in cataloging, adding and updating MARC data, and making recommendations on cataloging procedures with optimization for the virtual branch in mind. Because the virtual branch will continue to evolve and will include new functionality to address user expectations, the Library Technician position requires a professional with appropriate education credentials and experience to successfully maintain the virtual library. The employee presently holding the position has all the educational and experience credentials for the upgraded position and will stay in the post. The draft job description has been created to reflect these new duties, as well as requiring a Master of Library Science degree and appropriate experience.

Enclosed please find a draft copy of the job description for the Cataloging and Discovery Services Librarian position. The Committee should review and provide comment on the job description. If there are no changes, the Committee should consider the following motion:

“That the COG Human Resources Committee approved the job description for the Cataloging and Discovery Services Librarian, dated February 1, 2018, and its assignment to Pay Grade C41.”

14. POTENTIAL 2019 WORK TASKS

For 2019, the following is a list of **potential** agenda items that may be considered by the Human Resources Committee:

- Complete review of the COG Personnel Policy Handbook. Refer to the General Forum for adoption.

- Develop and review guidelines for speaking during “Citizen Comment” periods at COG meetings (similar to the Meeting Etiquette Guidelines adopted by the General Forum in 2018).
- Review a recommendation from COG staff regarding providing “call out” pay to Code Administration staff who are required to be available for duty during non-regular working hours. Call out occur less than once a week and are often related to fire, accidents, and storms that could affect the structural integrity of a building.
- Review the final draft of the job description for the Executive Director, Cataloging & Discovery Librarian, and Systems Technician at Schlow.
- Job description review and consideration for reclassification of the GIS Planner position.
- Receive updates regarding legal guidance on the classification of employment position as to be in accordance with the Fair Labor Standards Act (in all agencies except Code, and what may entail most review is specifically the Office Manager positions across agencies – including Codes – as their work tasks and responsibilities tend to vary across agencies).
- Continue the practice implemented in 2012 to review all proposed personnel changes for the upcoming 2020 budget by June 2019. This single “big picture” will help the Committee to recommend priorities to the Finance Committee and other elected officials.
- Review the 2019 budget proposal for the COG wellness program as proposed by the Employees Relations Committee.
- Review the 2019 budget proposal from Employee Relations Committee.

The Committee should review this proposed list of work items and note revisions, deletions, and additions.

15. OTHER BUSINESS

- A. Matter of Record - As a member of the General Forum you are invited to a Lunch and Learn session about the State College Borough Water Authority, the main water service provider in the Centre Region.

Mr. Brian Heiser, the Authority’s Executive Director, will lead the session. He will provide a brief history of the Authority, water sources, major challenges including growth and regulatory, infrastructure replacement/improvements (there are some big projects coming up), and financing and rate structures.

The session will start at 12:00 Noon, Wednesday, January 30, 2019. It will include lunch and lasts about 90 minutes. The Lunch and Learn will be held at the Water Authority building, 1201 Branch Road.

If you want to attend please contact Cheryl Stamm, COG Office of Administration, at 231-3077 or cstamm@crcog.net. Also please let Cheryl know if you have any dietary restrictions or if there are other topics you want Mr. Heiser to address.

- B. Matter of Record - In early 2019, Ms. Pettitt will be coordinating a Supervisory Training Session for all COG supervisory personnel. This year's training will be provided by Personnel Policy Handbook consultant, Ms. Nancy Hess, and will focus on the policies as written in the new Handbook. The 2019 Administration budget contains an appropriation of \$1,500 carried over from 2018 budget to conduct this training program for COG staff.
- C. Matter of Record - In early 2019, Ms. Pettitt will be coordinating an all staff training session through Ms. Jennifer Handke, Consulting with a Purpose. Ms. Handke conducted the 2018 Supervisory Training and it was highly recommended by supervisory staff that we bring Ms. Handke back for a full staff training session. The 2019 Administration budget contains an appropriation of \$4,300 to conduct this training program for COG staff.
- D. Matter of Record - The following is status report on various vacant positions in the COG.

Code - Code Services Manager: Advertising closed on December 3, 2018 and 68 applications were received. Management staff have reviewed the applications, selected an interview committee and have begun to discuss the competitive interview process. Once availability of the interview committee has been established, interviews will be scheduled.

Code - Commercial Plans Examiner/Building Inspector (SEOs 2): Advertising closed on December 3, 2018 and 7 applications were received. Interviews expected to be scheduled for the week of January 21, 2019.

Code - Electrical Inspector: Advertising closed on December 3, 2018 and 7 applications were received. Interviews expected to be scheduled for the week of January 21, 2019.

Code - Staff Assistant: Advertising closed on December 3, 2018 and 171 applications were received. Interviews expected to be scheduled for the week of January 28, 2019.

Planning – Senior Planner: Advertising for this position will close on January 11, 2019. The CRPA has received five cover letters and resumes for this position. An interview schedule will be determined after advertising closes for the position. The CRPA staff is currently covering most work for the vacant Senior Planner position for Halfmoon Township and Regional Planning.

Planning – Sustainability Planner: Colleen Barrett’s last day in the Sustainability Planner position will be January 4, 2019. The position will be advertised the first week in January and run for several weeks. An interview schedule will be determined after advertising closes for the position. The CRPA Director and other CRPA staff have met with the Sustainability Planner and coordinated a written turnover plan documenting the work completed to date, contacts, file locations, and other materials necessary to transition the work to a new employee.

Planning – Office Manager: Lyssa Cromell’s last day will be February 1, 2019. Advertising for the position closed on December 28, 2018. The CRPA has received twelve cover letters and resumes and expects to interview candidates the second week in January. It is anticipated that the Office Manager position will be filled about the time the position is vacated, or if possible prior to the departure of the current Office Manager.

Parks – Caretaker I: Two fulltime positions were approved in the 2019 budget process. Proposed to start in March and April of 2019. Staff are currently advertising, and recruitment ends January 25, 2019. To date, over 30 applications have been received.

Parks – Staff Assistant: Vacant. Staff are currently advertising and recruitment ends January 25, 2019. To date, over 60 applications have been received.

- E. Matter of Record - Ms. Pettitt will present the **enclosed** report on merit awards for 2019 and achievement awards for 2018.
- F. Matter of Record - The following COG employees were recognized for length of service at the end of the year recognition dinner organized by the COG’s Employee Relations Committee:

5 YEAR AWARDS

Paula Bannon	Library
Liz Bennett	Library
Katie Brennan	Library
Amy Wagner	Codes

10 YEAR AWARDS

Pam Adams	Refuse & Recycling
Lisa Collens	Library

Kayley Holdridge
Walt Schneider

Library
Codes

15 YEAR AWARDS

Mark Holdren
Beth Lee

Planning
Parks

20 YEAR AWARDS

Shawn Kauffman
Tiffany Weaver

Emergency Management
Parks

25 YEAR AWARD

Nathaniel Rasmussen

Library

30 YEAR AWARD

Andrea Winters
Tom Zilla

Library
Planning

16. ADJOURNMENT

CENTRE REGION COUNCIL OF GOVERNMENTS

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FINANCE COMMITTEE

COG Forum Room

Thursday, January 10, 2019

8:30 AM

AGENDA

1. CALL TO ORDER

Mr. Graham will convene the meeting.

2. CITIZEN COMMENTS

Members of the public are invited to comment on any items not already on the agenda (five minute per person time limit, please). Comments relating to specific items on the agenda should be deferred until that point in the meeting.

3. APPROVAL OF MINUTES

A copy of the minutes of the November 15, 2018 Finance Committee meeting is **enclosed.**

4. ELECTION OF OFFICERS

The Committee should elect a Chair and Vice Chair for 2019. During 2018, Mr. Graham served as Chair and Mr. Myers served as Vice Chair. The tentative 2019 membership of the Finance Committee is as follows:

Rich Francke	College Township
Danelle Del Corso	Halfmoon Township
Bud Graham	Harris Township
Vacant	Ferguson Township
George Downsborough Betsy Whitman, Alternate	Patton Township
Evan Myers Dan Murphy, Alternate	State College Borough

5. MEETING DATE, TIME & LOCATION

The Finance Committee should choose the date, time, and location for its 2019 meetings. During 2018, the Committee met on the second Thursday of the month at 8:30 AM in the COG General Forum Room.

In the past, COG committees have tried to schedule their meetings during the first two weeks of the month. This sequencing provides adequate time to refer issues to the Executive Committee and the General Forum for action.

In addition, a request is being made to hold a joint Public Services and Environmental (PSE) and Finance Committee meeting in February to discuss and provide direction on a potential joint solar power purchase agreement including the Centre Region municipalities, UAJA, CATA, SCBWA, and SCASD. A presentation will be given on January 28 at the CRFO meeting as to whether this process has merit based upon the ability of the various entities to cooperate. The goal is to purchase more environmentally sustainable energy while reducing the electric generation costs for each entity.

Based on the 2018 schedule the PSE Committee met on the first Thursday of the month at 12:15 pm. The Finance Committee met on the second Thursday of the month at 8:30 am. Staff would like to investigate the ability for the Finance Committee members to meet on the first Thursday in February at 12:15 pm. At the January PSE meeting staff will investigate the ability for the PSE members to attend the regularly scheduled Finance Committee meeting as well. Based on the responses, a date and time for the meeting will be determined.

6. COG ARTICLES OF AGREEMENT

The Executive Director will briefly review the COG Articles of Agreement as it relates to the Finance Committee. According to the Agreement, the duties of the Committee are:

- i. *To recommend an annual budget to the General Forum.*
- ii. *To recommend revisions of the annual budget to the General Forum as necessitated by changing conditions.*
- iii. ~~*To review and present the annual Centre Area Transportation Authority budget to the General Forum.*~~
- iv. *To recommend a capital improvement budget to the General Forum with annual and multiple year elements.*
- v. *To approve monthly vouchers for payment as may be recommended by the Executive Director.*
- vi. *To study and prepare recommendations on COG financial matters as requested by the Executive Committee.*

7. MEETING ETIQUETTE GUIDELINES

Mr. Steff will briefly review the **enclosed** COG Resolution for Meeting Etiquette as well as the Guidelines for Meeting Etiquette. During its November 26, 2018 meeting the General Forum adopted the Resolution and the corresponding Guidelines for Meeting Etiquette. The intent of these documents is to encourage all COG related entities to foster and maintain an environment in which all individuals are treated with respect and dignity.

The *Code of Conduct* section of the Guidelines offers suggestions for behavior at meetings. The *Notes for the Chair* section provides insights for meeting facilitation. In combination the *Code of Conduct* and *Notes for the Chair* sections will help to set a welcoming tone for Committee members who want to offer new ideas or provide comments on agenda items.

8. REVIEW OF 2019 COG BUDGET PROCESS

Committee members are asked to share their thoughts and observations on the 2019 COG budget process - what went well and what could be improved. This is meant to be a discussion but not an action agenda item.

During 2018 the Finance Committee considered whether there should be a guideline for increases in municipal contributions in the preparation of the 2019 Budget. The Committee, by a divided vote, decided not to have a guideline. Based on this decision the 2019 Program Plan, 2019 Detailed Budget, and 2019 Summary Budget were prepared.

The discussion should include what went well and the opportunities for improvement for the 2020 budget process. In addition, the Committee should start a discussion about whether a budget guideline should be recommended for the 2020 budget, and if so, what metrics should be utilized to develop such a guideline.

Potential items for discussion, based on the 2019 municipal Summary Budget comments include:

- Should COG to move towards an expenditure based budget and make the necessary changes therein?
- Should Parks “Enterprise Funds” contribute toward the cost of Parks Operating fund administrative activities similar to Codes’ contribution to Administration?

9. JANITORIAL SERVICES - ALPHA FIRE COMPANY

This agenda item asks the Committee to review the **enclosed** bid results for janitorial services for the regional fire protection program (three fire stations) and propose a recommendation to the General Forum for proceeding.

In late 2018, the Fire Director advertised and bid janitorial services for the three fire stations. In late December, after the review of bids, the apparent lowest qualified bidder was Wizzards Janitorial Systems with a bid of \$31,387.07, excluding linen services.

Mr. Bair will be in attendance to discuss the process used to solicit bids and make a recommendation as to who to retain for janitorial services for the fire stations. If the Committee wishes to make a recommendation, a potential recommendation would be:

“The Finance Committee recommends to the General Forum that the Fire Director enter into a contract with Wizzards Janitorial Services beginning on February 1, 2019 and running through the end of 2019.”

Note: Based on the COG purchasing policy, contracts such as janitorial services require General Forum approval prior to entering into an agreement.

10. FUTURE COMMITTEE AGENDA ITEMS AND PRIORITIES

This agenda item asks the Finance Committee to review the following list of Committee agenda items and identify topics that should be added, deleted, or revised. After that process is complete, the Committee is asked to identify those topics of highest priority.

For 2019, the following is a list of potential agenda items that may be considered by the Finance Committee:

1. General: Are there larger issues the Committee would like to discuss during 2019? For instance, are there other opportunities for the municipalities to work together through the COG or as a result of a regional discussion facilitated by the COG.
2. Fire: Discuss future model for the delivery of Centre Region hazmat services (March agenda item). During its June 12, 2018 meeting the Public Safety Committee endorsed the creation of a COG/PSU/Firemens' Relief Association Committee to review the current way hazmat services are provided and whether changes should be made in the future. The Public Safety Committee will also be discussing this proposal from a programmatic perspective (February/March).
3. Fire: Possibly receive a recommendation from the Public Safety Committee that during 2020 funds be budgeted to conduct an evaluation of the regional fire service. This would be third evaluation of the program in the last 25 years. If this project is endorsed, then Request for Proposals should be drafted during 2019. The first step in the process would be for the General Forum to establish a Ad Hoc Committee to prepare a Request for Proposals for the study (March for Committee appointment).
4. Fire: Review funding from the State College Firemens' Relief Association to the COG's Fire Capital Budget for apparatus replacement (second quarter).

5. General: Funding options for the Regional Fire Protection program, including a review of the use of impact fees to offset fire program costs, and other regional programs (first quarter).
6. Fire: Assess the staffing of the Regional Fire Protection program. How effective were the increases in the annual stipends in attracting and retaining volunteers (second quarter)?
7. General: Decide whether to establish budgetary guidelines for the development of the 2020 COG Budget. And, if so, what should the guidelines be (second quarter)?
8. General: Provide guidance on the expectations for the 2020 COG Program Plan, including recommendations for improving the document (second quarter).
9. General: Discuss funding of COG's capital budgets, especially MMNC, Library and Pools (second quarter).
10. General: Review COG fund balance practices (second quarter).
11. General: Develop a policy for handling the Insurance Reserve Budget (second quarter).
12. General: Following the discussion at the Public Safety Committee meeting and the General Forum, Centre LifeLink may ask COG for funding (second quarter).
13. General: Review the 2020 COG Program Plan and the 2020 to 2024 COG Capital Improvement Plan (third quarter).
14. General: Discuss the 2018 COG audit with auditors (third quarter).
15. General: Receive from the Ad Hoc COG Facilities Committee an evaluation of the COG Building that will identify and provide cost estimates on options to address office and parking space limitations. \$50,000 is budget for this evaluation (third quarter).
16. Library: Review and approve updated agreements with Centre County and Library Federation. Areas of impact could include the Planning Agency, CCMPO, and Schlow Library budgets. The Committee would not be drafting these agreements but would review and comment on them prior to their submittal to the General Forum (On going).
17. Code: Review the financial status in the Code Agency (On going).
18. General: Review and discuss the 2020 Summary Budget comments (third quarter).

19. IT/Finance: Receive a report about the accounting software currently used and assess a recommendation from the Finance Director regarding a potential replacement of the software (fourth quarter).
20. Codes: Possibly receive a recommendation from the Public Safety Committee regarding a change in the software package used by the Centre Region Code Administration (prior to December).
21. General: Receive and review the results of the COG IT study (prior to December).

This agenda item is for informational purposes only and does not require action from the Finance Committee.

11. AD HOC FACILITIES COMMITTEE

This is an information agenda item and does not require action from the Finance Committee.

Mr. Francke will report on the Committee's December 4, 2018 and January 9, 2019 meetings.

The Committee should receive this report and comment as it deems appropriate.

12. MONTHLY REPORTS

The November 2018 **voucher** reports were distributed to the Committee with the December 2018 cancellation notice. The December vouchers were distributed with this agenda. To proceed, the Committee should consider the following motion:

“That the Finance Committee approves the November and December 2018 voucher report for the Centre Region COG.”

The preliminary December 2018 **financial** reports are **enclosed** in the electronic copy of this agenda packet. Please note that year-end close-out and clean-up procedures are underway. The final 2018 unaudited year-end report will be distributed to the Committee at either its February or March 2019 meeting.

Each month paper copies of the **financial** and **voucher** reports will be available at the meeting to folks who have requested paper agenda packets. If the Committee has a question about any of the items in these reports, please let Finance Director Joe Viglione (jviglione@crcog.net or 231-3062) know as soon as possible, so that the information can be researched prior to the next Committee meeting.

13. OTHER BUSINESS

- A. Matter of Record – During its January 10, 2019 meeting the Parks Capital Committee will discuss the following changes to the Master Site Plan for Whitehall Road Regional Park:
- a. Using the funding earmarked for two open-air shelters (\$355,000) toward a new all-season pavilion; the two shelters noted in Phase I would remain in the plan and, hopefully, funded in the future;
 - b. The all-season pavilion would be built in conjunction with the restroom/storage/concessions building already indicated in Phase I. Additional funding for this building will need to come from donations and/or grants;
 - c. The swapping of the locations of a soccer field and the tennis courts/indoor tennis building; and
 - d. The re-introduction of a maintenance storage building for park equipment and supplies, noted in the original Phase I, but not currently funded.

- B. Matter of Record – As a member of the General Forum you are invited to a Lunch and Learn session about the State College Borough Water Authority, the main water service provider in the Centre Region.

Mr. Brian Heiser, the Authority's Executive Director, will lead the session. He will provide a brief history of the Authority, water sources, major challenges including growth and regulatory, infrastructure replacement/improvements (there are some big projects coming up), and financing and rate structures.

The session will start at **12:00 Noon, Wednesday, January 30, 2019**. It will include lunch, and lasts about 90 minutes. The Lunch and Learn will be held at the Water Authority building, 1201 Branch Road. If you want to attend please contact Cheryl Stamm, COG Office of Administration, at 231-3077 or cstamm@crcog.net. Also please let Cheryl know if you have any dietary restrictions or if there are other topics you want Mr. Heiser to address.

- C. Matter of Record – Early in 2018, it was suggested by several Parks Capital Committee members and other elected officials that the Millbrook Marsh Nature Center (MMNC) lease be reviewed and updated before they could consider contributing funding for the Spring Creek Education Building Phase II expansion.

During the spring and summer months, COG staff met with the Centre Region Parks Recreation Authority members, Parks Capital Committee members, and the MMNC Advisory Committee members to discuss the current lease in order to prepare lease changes for Penn State. COG staff met with Penn State in mid-July to present these suggested changes. Penn State took those suggestions into consideration and provided a revised lease draft in September, 2018. After an initial review with the MMNC Facility and Finance Committee, the MMNC Advisory Committee, and Clearwater Conservancy, who owns the easement on the 50-acre

MMNC parcel that is part of the lease, a list of items requiring further review was created.

This list was provided to the Authority's solicitor for discussion and consideration so that a revised lease could be provided to Penn State University for further review. The Authority's solicitor has prepared a response to this list that will be shared with the joint Parks Capital Committee/Centre Region Parks and Recreation Authority during its January 10, 2019 meeting. Depending on the outcome additional revisions to the lease agreement may be recommended.

It is anticipated that an updated lease agreement will be ready for approval during the first quarter of 2019. As with the lease for the Active Adult Center the General Forum will be asked to endorse the lease agreement and be a witness to its execution.

14. ADJOURNMENT

CENTRE REGION COUNCIL OF GOVERNMENTS

Centre Region Parks and Recreation
2643 Gateway Drive, Suite #1
State College, PA 16801
Phone: (814) 231-3071 Fax: (814) 235-7832

JOINT MEETING OF THE PARKS CAPITAL COMMITTEE AND THE CENTRE REGION PARKS AND RECREATION AUTHORITY

COG General Forum Room
Thursday, January 10, 2019
12:15pm

AGENDA

1. CALL TO ORDER

Chair Bruce Lord will convene the meeting.

2. CITIZEN COMMENTS

Members of the public are invited to comment on any items not already on the agenda (five minutes per person time limit, please). Comments relating to specific items on the agenda should be deferred to that point in the meeting.

3. APPROVAL OF MINUTES

A copy of the minutes from the December 13, 2018 joint meeting of the COG Parks Capital Committee and Centre Region Parks and Recreation Authority is **enclosed** (attachment #1).

4. ANNUAL REORGANIZATION – 2019 CALENDAR YEAR

A. The Committee is asked to conduct the Election of Officers (Chair and Vice-Chair) for 2019. The following officers were elected for 2018:

Chair	Bruce Lord, Harris Township
Vice-Chair	Eric Bernier, College Township

The official 2018 Parks Capital Committee roster includes the following members, and could change based on 2019 municipal appointments occurring in January 2019:

Janet Engeman, Borough of State College	Bruce Lord, Harris Township
Laura Dininni, Ferguson Township	Eric Bernier, College Township
Jessica Buckland, Patton Township	Charima Young, Penn State University

B. The Committee is asked to set their 2019 joint meeting schedule. There have been several meeting cancellations in 2018 since most of the work the Agency is doing at this time falls under the Authority's purview. Concerns were shared with Chairman Lord and Chairwoman Matason, so both met mid-summer to discuss the meeting schedule based on tasks that are charged to the Parks Capital Committee.

Because projects that do fall under the guidance of the Parks Capital Committee are delayed, there have been no meetings since July. That was a concern for both Chairpersons, so Chairman Lord

would like to suggest a meeting schedule for 2019 that will allow the committee to continue meeting in an abbreviated fashion and on a pre-determined schedule so that Committee members can remain briefed on projects. Scheduling additional meeting(s) when necessary should remain a possibility for 2019 as projects/topics arise.

The proposed dates below continue the current schedule of holding the joint meetings on the 2nd Thursday of each month at 12:15 PM in the COG Forum Room. The CRPR Authority will likely continue to meet on the 3rd Thursday of each month; this Board action is scheduled for January 18. Upon approval of the meeting dates, a Public Notice will be published.

Suggested 2019 Joint Meeting Dates: 2nd Thursday (quarterly) 12:15pm, COG Forum Room
April 11 July 11 October 10 January 9, 2020

The Parks Capital Committee should review and discuss the Joint Meeting Dates for 2019. Should the Parks Capital Committee decide to approve the dates as proposed, a possible motion is:

“That the Parks Capital Committee approve the 2019 meeting dates as proposed with all meetings being held at 12:15pm in the COG Forum Room.

The Centre Region Parks & Recreation Authority should review and discuss the Joint Meeting Dates for 2019. Should the Authority decide to approve the dates as proposed, a possible motion is:

“That the Centre Region Parks & Recreation Authority approve the 2019 meeting dates as proposed with all meetings being held at 12:15pm in the COG Forum Room.

C. Monthly Reporting & Disbursement of Agenda Packets (Pam Salokangas)

As part of the reorganizational meeting, Ms. Salokangas requests notification of who would like to receive their packets only via email and who would like their packets mailed to them in addition to receiving the emailed version.

5. COG ARTICLES OF AGREEMENT (Jim Steff)

Mr. Jim Steff, COG Executive Director, will briefly review the COG Articles of Agreement as they relate to the Parks Capital Committee. According to the 2008 Agreement, the duties of the Committee are:

- A. To recommend the designation of regional park facilities (i.e., facilities involving joint capital funding such as regional parks, swimming pools, nature centers, etc.) to the General Forum.
- B. To develop and recommend a funding strategy for the planning, development, and operation of regional park facilities to the General Forum.
- C. To cooperate with the Centre Region Parks & Recreation Authority Board in the preparation of recommended master site plans for regional recreation facilities for referral to the General Forum and/or the participating municipalities.
- D. To study and prepare recommendations on regional parks as requested by the Executive Committee.

6. MEETING ETIQUETTE GUIDELINES (Mr. Jim Steff)

Mr. James Steff, COG Executive Director, will briefly review the **enclosed** (attachment #2) approved Resolution of Meeting Etiquette as well as the **enclosed** (attachment #3) Guidelines for Meeting Etiquette.

During its November 26, 2018 meeting, the General Forum adopted the Resolution and the corresponding Guidelines for Meeting Etiquette. The intent of these documents is to encourage all COG related entities to foster and maintain an environment in which all individuals are treated with respect and dignity. The *Code of Conduct* section of the Guidelines offers suggestions for behavior at meetings. The *Notes for the Chair* section provides insights for meeting facilitation. In combination the *Code of Conduct* and *Notes for the Chair* sections will help to set a welcoming tone for Committee members who want to offer new ideas or provide comments on agenda items.

7. PARKS AND RECREATION REGIONAL COMPREHENSIVE STUDY UPDATE (Bruce Lord)

This is an informational agenda item and does not require action.

The Steering Committee received a second draft of the public survey questions to review during their January 8 committee meeting. Results from that meeting will be forwarded to Dr. Alan Graefe for final edits to the survey.

Committee members provided a Key Person Interview list so that the consultants could begin planning whom to interview and how many interviews they can conduct over the next few months. Interviews have started.

The consultants participated in a parks tour on December 10, hosted by Pam Salokangas and Jim Carpenter. Jim Steff, COG Executive Director, attended as well. This was a driving tour only and included 57 sites. The consultants will revisit some facilities this spring and summer.

The State College Area High School's South Building's cafeteria has been selected for the first public meeting to be held on January 30 with a snow/weather make-up the following week on February 6. The start time is 7:00 PM. The CRPR Agency will assist with advertising the public meeting once all details are finalized.

8. WHITEHALL ROAD REGIONAL PARK UPDATE (Pam Salokangas)

An update on the progress of the Land Development Process was provided to both the Authority members and the Parks Capital Committee at the December 13, 2018 joint meeting. The following bullets provide an update for the last four weeks:

- November 8: Kick-Off Meeting with Stahl Sheaffer Engineering to discuss general topics and to review calendar.
- November 8: Meeting with the State College Borough Water Authority's Sourcewater Protection Committee and SCBWA Staff.
- November 16: General Kick-Off Meeting with engineering and architect team along with CRPR Staff and Authority Chair for the development of the Land Development Plan. Escrow submittal to Ferguson Township was provided the week of November 26; there will be approximately 3-4 months of preparation before submitting to Ferguson Township Planning Commission.

- November: PA DCNR awards a \$300,000 matching grant to the All-Ability and Universally-Accessible Playground at Whitehall Road Regional Park.
- Excavation work at The Cottages development has started, including a portion of the Musser's Gap connector trail being relocated through the Whitehall Road Regional Park's woods.
- December 14: Conference call with PA DCNR to discuss grant award and to prepare for the next steps which involve the project start-up letter, required DCNR documentation, and project review to include our engineers and/or playground designer. The next step is to review the project with DCNR on January 15 and to finalize their paperwork before the grant project can begin.
- December 19: Agency Staff and CRPR Authority Chair Kathy Matason met with the landscape architect, Brian Auman, the electrical engineer, Frank Peno, and the project engineers, Stahl Sheaffer Engineering, for several small break-out meetings to review the Phase I design and to go through a Q & A process so that the plan can be refined.
- Stahl Sheaffer Engineering is currently working with Ferguson Township staff to schedule an informal pre-application meeting for late January.
- Ms. Salokangas completed in December a Shade Structure grant for the WRRP playground and has two-three large grants to complete in January-March for park projects.

In the Fall of 2018, the PA Department of Conservation and Natural Resources (DCNR) asked how the pump station's grant of easement affects the original DCNR acquisition funding used to purchase the park's two parcels. DCNR made a request to the Agency for some background information and documentation. Ms. Salokangas provided all of that information to DCNR during the first part of November. Ms. Salokangas had a brief phone discussion with Mr. Wes Fahringer, the Regional DCNR Rep., to discuss the status. Mr. Fahringer stated that DCNR staff reviewed our documentation and that an official letter regarding the matter will be sent. Mr. Fahringer did state that there was a positive outcome and that there was not going to be any delay for the Authority regarding the Land Development Plan.

The official determination letter was received on December 14, 2018 and a copy is **enclosed** (attachment #4). In summary, the co-owners of the Whitehall Road Regional Park property will be required to reinvest \$2,084 back into the park development project as compensation for the grant of easement acreage. "This investment can be in the form of any site amenity or landscape feature that will benefit public recreational use." The COG shall provide written notification to DCNR on the plan for reinvestment.

9. WHITEHALL ROAD REGIONAL PARK MASTER PLAN REVISION (Pam Salokangas)

This agenda item asks the Parks Capital Committee to consider taking action on four recommendations from the Centre Region Parks and Recreation Authority to revise the Whitehall Road Regional Park Master Site Plan. All Master Site Plan revisions require the unanimous approval of the municipalities that participate in the regional parks program.

At the November 26 General Forum, Ms. Salokangas suggested to the General Forum members how they would like to proceed with some Master Plan changes. Action was not requested for November, but that Agency staff would return in January for further discussion. The major policy question that would be before the General Forum in January is whether these items represent an amendment to the Master Site Plan for Whitehall Road Regional Park. If they do, then according to the Articles of Agreement for the

Planning, Development and Operation of Regional Parks, Section 4.4, a unanimous vote of the General Forum will be required. After reviewing how other past changes to the park were handled, it is COG Staff's opinion that the following items would be a revision to the Master Site Plan.

The changes include:

- 1) Using the funding earmarked for two open-air shelters (\$355,000) toward a new all-season pavilion; the two shelters noted in Phase I would remain in the plan and, hopefully, funded in the future.
- 2) The all-season pavilion would be built in conjunction with the restroom/storage/concessions building already indicated in Phase I. Additional funding for this building will need to come from donations and/or grants.
- 3) The swapping of the locations of a soccer field and the tennis courts/indoor tennis building; and
- 4) The re-introduction of a maintenance storage building for park equipment and supplies, noted in the original Phase I, but not currently funded.

It should be noted that even with the recently awarded DCNR playground grant the estimated cost of the project exceeds the budgeted amount. It is proposed to manage this disparity by:

- 1) continuing to seek additional grant funding;
- 2) seeing private donations; and
- 3) structuring the Request for Bids with a number of optional items that can be accepted or rejected given the availability of funds.

Once the Land Development Plan is approved, the Authority has five (5) years to build the project; as funding becomes available for the items in the plan, they can be constructed within that timeframe.

The Authority formally voted on the endorsement of these proposed changes to the Master Site Plan at the December 13, 2018 meeting. It is requested that the Parks Capital Committee discuss these changes and formally endorse the proposed Master Site Plan Changes. A possible motion for proceeding is:

“That the Centre Region Parks Capital Committee recommends to the COG General Forum that the Whitehall Road Regional Park Master Site Plan be revised to provide for an all-season pavilion attached to the restrooms/concession building; that the two shelters remain in the plan but not included in Phase I; that the location of the tennis courts/indoor tennis building be switched with the soccer field; and that the re-introduction of the maintenance storage building and its location be approved.”

The endorsements from the Authority and the Parks Capital Committee will be presented along with this information to the General Forum at its January 28, 2019 meeting.

10. MILLBROOK MARSH NATURE CENTER LEASE (Pam Salokangas and Melissa Kauffman)
This agenda item asks that the Parks Capital Committee review the summary of changes in the revised draft of the Millbrook Marsh Nature Center lease.

Through the 2018 budget process, it was suggested by several Parks Capital Committee members and other elected officials that the Millbrook Marsh Nature Center (MMNC) lease be reviewed and updated before they could consider contributing funding for the Spring Creek Education Building Phase II expansion.

Therefore, during the spring and summer months, COG staff met with the Authority members, Parks Capital Committee members, and the MMNC Advisory Committee members to discuss the current lease in order to prepare lease changes for Penn State. COG Staff met with Penn State in mid-July to present these suggested changes. Penn State took those suggestions into consideration and provided a revised lease draft in September, 2019. After initial review with the MMNC Facility and Finance Committee, the MMNC Advisory Committee, and Clearwater Conservancy, who owns the easement on the 50-acre MMNC parcel that is part of the lease, we created a list of items for further review.

This list was provided to the Authority's solicitor for discussion and consideration so that a revised lease could be provided to Penn State for further review.

It is important to note that through these discussions, it became apparent that the MMNC lease has always been a grounds lease, and the Agency staff opted to remain in a grounds lease for the purpose of lease negotiations with Penn State University. Ms. Salokangas discussed the lease differences during the December Parks Capital Committee Joint Meeting on December 13, 2018.

The new lease does reflect additional years based on when the Spring Creek Education Building's Phase II project is complete, and the lease language has been reviewed particularly for insurance needs, signatories, processes, and the Clearwater Conservancy easement on the 50-acre parcel.

Enclosed (attachment #5) is the draft changes suggested by the Authority's solicitor. These changes need to be provided to Penn State University for their consideration before a final draft lease can be reviewed by the MMNC Advisory Committee, the Authority, and the Parks Capital Committee. If there are additional changes to be requested, they should be identified during this meeting so that they can be included with the Solicitor's changes and forwarded to Penn State.

11. OTHER BUSINESS

- A. Matter of Record -The next Joint Meeting of the Parks Capital Committee and the CRPR Authority will be based on the approved meeting schedule set during the January 10, 2019 Joint Meeting.
- B. Matter of Record - As a member of the General Forum, the Parks Capital Committee members and the CRPR Authority members are invited to a Lunch and Learn session about the State College Borough Water Authority, the main water service provider in the Centre Region.

Mr. Brian Heiser, the Authority's Executive Director, will lead the session. He will provide a brief history of the Authority, water sources, major challenges including growth and regulatory,

infrastructure replacement/improvements (there are some big projects coming up), and financing and rate structures.

The session will start at **12:00 Noon, Wednesday, January 30, 2019**. It will include lunch, and the program will last about 90 minutes. The Lunch and Learn will be held at the Water Authority building, 1201 Branch Road.

If you want to attend please contact Cheryl Stamm, COG Office of Administration, at 231-3077 or cstamm@crcog.net. Also please let Cheryl know if you have any dietary restrictions or if there are other topics you want Mr. Heiser to address.

- C. Matter of Record - The first public meeting for the Centre Region Parks, Recreation, and Open Space Comprehensive Study will be held on Wednesday, January 30 at 7:00 PM at the State College Area High School (formerly South Building). The public meeting will be held in the cafeteria; please watch for signage as you enter the building at the main entrance.

12. ADJOURNMENT

Enclosures:

Attachment #1 - December 13, 2018 Meeting Summary

Attachment #2 - Resolution of Meeting Etiquette

Attachment #3 - Guidelines for Meeting Etiquette.

Attachment #4 - DCNR Determination Letter - Acquisition Grant

Attachment #5 - MMNC Summary of Lease Changes

CENTRE REGION COUNCIL OF GOVERNMENTS

Centre Regional Planning Agency
2643 Gateway Drive, Suite #4
State College, PA 16801
Phone: (814) 231-3050 Fax: (814) 231-3083

TRANSPORTATION & LAND USE (TLU) COMMITTEE

College Township Municipal Building

1481 E. College Avenue

Monday, January 14, 2019

12:15 p.m.

AGENDA

1. CALL TO ORDER AND INTRODUCTIONS – Mr. May will call the meeting to order and provide time for introductions of Committee members and staff.

2. CITIZEN COMMENTS

Members of the public are invited to comment on any items not already on the agenda (**five minutes per person time limit, please**). Comments relating to specific items on the agenda should be deferred until that point in the meeting.

3. ELECTION OF OFFICERS

The TLU Committee should elect a Chair and Vice Chair for 2019. During 2018, Ms. Theresa Lafer (State College Borough) served as the Chair of the Committee, and Mr. Frank Harden (Harris Township) served as the Vice Chair. Mr. May will call for nominations for Chair and turn the meeting over after a successful vote for the Chair.

The 2019 membership of the TLU Committee is as follows:

Steve Lyncha	College Township
Steve Miller	Ferguson Township
Barbara Spencer	Halfmoon Township
Frank Harden	Harris Township
Elliot Abrams	Patton Township
Theresa Lafer	State College Borough
Rob Cooper	Penn State University

4. ACCEPTANCE OF MINUTES

The minutes of the November 5, 2018 TLU Committee meeting are *enclosed*.

5. OPEN DISCUSSION FOR COMMITTEE MEMBERS

This time is provided for open discussion of issues by members.

6. MEETING DATES, TIME, AND LOCATION

The Committee should choose the dates, time, and location for its 2019 meetings. During 2018, the Committee met on the first Monday of the month at 12:15 p.m. in the COG Forum Room. In the past, COG committees have tried to schedule their meetings during the first two weeks of the month. This sequencing provides adequate time to refer issues to the Executive Committee and the General Forum for action. The following table shows meeting dates for 2019, should the Committee continue to meet on the first Monday of the month at 12:15 p.m.

COG TLU COMMITTEE POTENTIAL MEETING DATES – 2019	
February 4	August 5
March 4	September 9 (second Monday to accommodate Labor Day holiday)
April 1 (joint meeting with the Centre Regional Planning Commission at the regular TLU meeting time)	* October 7 – (joint meeting with the CRPC at the regular TLU Committee meeting time)
May 6	November 4
June 3	December 2
July 1	January 13, 2020 (2 nd Monday to accommodate municipal reorganizational meetings)

* Committee members should consider maintaining the regular TLU Committee meeting time for the fall joint meeting with the CRPC. This meeting was generally held on the CRPC meeting date and time. In 2018, the meeting was moved to the TLU time because the CRPC meeting conflicts with a College Township Council meeting. This also requires approval by the CRPC.

7. COG ARTICLES OF AGREEMENT

The CRPA Director will briefly review the COG Articles of Agreement as it relates to the TLU Committee. According to the Articles, the duties of the Committee are:

- i. To study and prepare recommendations on coordinating major land use and transportation plans.
- ii. To discuss, as appropriate, matters considered by the Centre County Metropolitan Planning Organization (CCMPO) [e.g. Centre County Long Range Transportation Plan and Centre County Transportation Improvement Program].
- iii. To meet semi-annually with the Centre Regional Planning Commission to discuss regional planning issues of common interest.
- iv. To provide input to the Centre Area Transportation Authority on an annual basis about proposed changes in service.

- v. To study and prepare recommendations on transportation policy, issues, or projects as requested by the Executive Committee.

Action: This item is for information only.

Attachments: None

Next Steps: None

8. POTENTIAL TLU COMMITTEE ACTIVITIES

This item provides a list of potential agenda items that the TLU Committee may consider in 2019 based upon activities in the CRPA Comprehensive Plan Implementation Program (CHIP) and the CCMPO Unified Planning Work Program (UPWP):

- a. Conduct a joint meeting with the Centre Regional Planning Commission (CRPC) in April to review the status of ongoing CHIP projects for 2019 and preliminary priority projects for 2020 projects.
- b. Conduct a joint meeting with the CRPC in October to potentially develop initial draft priority projects for the 2020 CHIP.
- c. Receive a presentation and review potential methodologies that could be utilized to forecast and project future population growth and growth trends in the Centre Region.
- d. Receive a presentation and review a project to examine the rate of land consumption inside the Regional Growth Boundary and determine potential strategies to reduce the rate of land consumption, such as minimum density requirements.
- e. Receive a presentation and review a project to identify potential future growth locations outside the Regional Growth Boundary.
- f. Prepare for a forum with developers, consultants, municipalities, and the Pennsylvania Housing Research Center at PSU regarding potential improvements to the land development review process in the Centre Region (requested by the COG TLU Committee in 2017).
- g. Potentially review the results of the greenhouse gas emissions inventory for the Centre Region and COG, and review specific elements of the Climate Action and Climate Adaptation Plan as they relate to transportation planning in the Region and Centre County.

- h. Review draft elements of the CCMPO's new Centre County Long Range Transportation Plan (LRTP) 2050, focusing on issues, needs, and candidate projects located within or affecting the Centre Region.
- i. Receive reports about the status of highway, bridge, transit and pedestrian/bicycle improvements being implemented in the Centre Region and surrounding areas, including but not limited to: Atherton Street Drainage/Repaving; I-99/I-80 Exit 161 Interchanges; Route 322/144/45 Corridors; Route 26/45 Intersection; Valley Vista Drive turning lanes; Valley Vista Shared-Use Path; and PennDOT's maintenance paving projects.
- j. Provide input on actions the CRPA, CCMPO, municipalities, and other organizations can take to notify residents and businesses about transportation construction projects that may cause delays on major transportation corridors.
- k. Receive updates about actions taken by the municipalities and Penn State University to implement recommendations in the Centre Region Bike Plan, and potentially amend the Bike Plan to reflect updated information about bike facilities in the Region.
- l. Begin discussing a request to the League of American Bicyclists to renew the Region's designation as a Bicycle Friendly CommunitySM, which must be requested in 2020.
- m. Receive reports about the activities of the Centre Region Bicycle Advisory Committee (CRBAC).
- n. Receive updates about e-scooter legislation in Pennsylvania and its impact on the Centre Region.
- o. Receive a report about CATA's service planning process for fall 2020.
- p. Discuss the advancement of a planning study to identify and assess transit options.
- q. Receive reports on land use/transportation-related projects, such as the potential implementation of a "road diet" on Boal Avenue (Business Route 322) in Harris Township; and potential implementation of recommendations in the Pine Grove Mills Small Area Plan in Ferguson Township. Reports will focus on action items that require regional coordination.

Action: This item is for information only.

Attachments: None

Next Steps: None

9. MEETING GUIDELINES

During its November 26, 2018 meeting, the General Forum adopted the attached Resolution and the corresponding Guidelines for Meeting Etiquette. The intent of these documents is to encourage all COG related entities to foster and maintain an environment in which all individuals are treated with respect and dignity. The *Code of Conduct* section of the Guidelines offers suggestions for behavior at meetings. The *Notes for the Chair* section provides insights for meeting facilitation.

This information was not prepared in response to a particular problem in the COG. Rather, the General Forum believes the Meeting Guidelines can be a useful tool in helping COG related groups to set expectations for creating a respectful environment that is conducive to exploring alternatives and finding solutions that everyone can live with.

Action: This item is for information only.

Attachments: 1. Guidelines for Meeting Etiquette, adopted November 26, 2018
2. Resolution 2018 - 4 Endorsing Meeting Etiquette Guidelines

Next Steps: None

10. OTHER BUSINESS

- A. Matter of Record - The next TLU Committee meeting will be held on Monday, February 4, 2019 at 12:15 p.m. in the COG Building Forum Room, pending approval of the 2019 meeting schedule.
- B. Matter of Record - The next meeting of the CCMPO Coordinating Committee will be held on Tuesday, February 26, 2019 at 6:00 p.m. at the Patton Township Municipal Building. Agenda items will include the election of officers; a status report from PennDOT about highway/bridge projects; an update about the Centre County LRTP 2050, and a presentation about PennDOT's Regional Operations Plan for the central area of Pennsylvania.
- C. Matter of Record - *Enclosed* is the CATA Fiscal Year 2017 - 2018 Annual Report.

11. ADJOURNMENT

CENTRE REGION COUNCIL OF GOVERNMENTS

2643 Gateway Drive, Suite 3

State College, PA 16801

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PUBLIC SERVICES & ENVIRONMENTAL COMMITTEE

College Township - Main Meeting Room

Thursday, January 17, 2019

12:15 PM

Note change of
meeting location

AGENDA

1. CALL TO ORDER

Mr. Hameister will convene the meeting.

2. CITIZEN COMMENTS

Members of the public are invited to comment on any items not already on the agenda (five minutes per person time limit, please). Comments relating to specific items on the agenda should be deferred to that point in the meeting.

3. APPROVAL OF MINUTES

Copies of the minutes from the December 6, 2018 meeting of the COG Public Services & Environmental Committees are *enclosed* for approval.

4. COMMITTEE PICTURE

COG Staff would like to take a picture of Committee members to include on our webpage that discusses the Public Services & Environmental Committee. COG believes it would add a personal touch and help residents identify their elected officials when needing to reach out to them.

5. ELECTION OF OFFICERS

The Committee should elect a Chair and a Vice Chair for 2019. During 2018, Mr. Hameister served as Chair and Ms. Stilson served as Vice Chair. The 2019 membership of the Public Services and Environmental (PSE) Committee is as follows:

Carla Stilson	College Township
Peter Buckland	Ferguson Township
Barbara Spencer	Halfmoon Township
Dennis Hameister	Harris Township
Betsy Whitman	Patton Township
Jesse Barlow	State College Borough

6. MEETING DATES, TIME, AND LOCATION

The Public Services & Environmental Committee should choose the location, time, and dates for its 2019 meetings. During 2018, the Committee met on the first Thursday at 12:15 PM in the Forum Room of the COG Building. In the past, COG committees have tried to schedule their meetings during the first two weeks of the month. This sequencing provides adequate time to refer issues to the Executive Committee and the General Forum for action.

7. COG ARTICLES OF AGREEMENT

The Executive Director will briefly review the COG Articles of Agreement as it relates to the Public Services and Environmental Committee. According to the Agreement the duties of the Committee are:

- To recommend and/or review programs, project initiatives, or other actions relating to the energy/energy conservation and/or environmental sustainability of the Centre Region.
- To recommend bidding specifications for the refuse/recycling program to the General Forum and to recommend actions on major policy issues affecting that program.
- To recommend and/or review actions relating to the operation of sewer, water, stormwater and other public infrastructures.
- To coordinate studies, plans and proposals with the Public Safety Committee as they relate to public utilities and public safety.
- To study and prepare recommendations on public services and the sewage management program as requested by the Executive Committee.

8. MEETING ETIQUETTE GUIDELINES

The Executive Director will briefly review the *enclosed* approved Resolution for Meeting Etiquette as well as the Guidelines for Meeting Etiquette. During its November 26, 2018 meeting the General Forum adopted the Resolution and the corresponding Guidelines for Meeting Etiquette. The intent of these documents is to encourage all COG related entities to foster and maintain an environment in which all individuals are treated with respect and dignity. The *Code of Conduct* section of the Guidelines offers suggestions for behavior at meetings. The *Notes for the Chair* section provides insights for meeting facilitation. In combination the *Code of Conduct* and *Notes for the Chair* sections will help to set a welcoming tone for Committee members who want to offer new ideas or provide comments on agenda items.

9. JOINT FINANCE AND PUBLIC SERVICES & ENVIRONMENTAL COMMITTEE MEETING – *presented by Joe Viglione*

A request is being made to hold a joint Public Services and Environmental (PSE) and Finance Committee meeting in February to discuss and provide direction on a potential joint solar power purchase agreement including the Centre Region municipalities, UAJA, CATA, SCBWA, and SCASD. Currently each entity has its own separate electricity contract, but there is a desire (among some of the elected officials/board members in the Centre Region) to investigate if moving towards a cooperative agreement might be financially beneficial while encouraging environmental sustainability for all the parties. A presentation will be given in January at the Centre Region Finance Officers (CRFO) meeting to discuss whether this process has merit based upon the ability of the various entities to cooperate. The goal is to purchase more environmentally sustainable energy while reducing the electric generation costs for each entity.

The Finance Committee meets generally on the second Thursday of the month at 8:30 am. Staff would like to investigate the ability for the Public Service & Environmental Committee members to meet on February 14, 2019 at 8:30 am. The other option is for the joint meeting to be held on February 14, 2019 at 12:15 pm, the normal meeting time of the PSE Committee. Based on the responses, a date and time for the meeting will be determined.

10. KINBER – *presented by Jeff Luck*

In May of 2016, the COG General Forum allocated \$15,000 to contract with KINBER to identify options and costs for a Wide Area Network to include the six Centre Region municipalities, CATA, UAJA, and COG. The impetus for the study was the end of the regional Comcast WAN agreement. Since that time, several of the participating organizations have contracted with KINBER to replace their WAN connections and most of those builds are now complete.

- CATA - 100MB point-to-point connection and commodity Internet through KINBER
- Patton Township - 100MB point-to-point connection through KINBER
- COG - completing 100MB point-to-point connection through KINBER
- College Township - signed contract, waiting for build, currently using Comcast standalone
- Ferguson Township - currently opting-out, using Comcast standalone

The purpose of the original project was to replace the leased 30Mb WAN with an interconnected 10Gb fiber ring that can be used for multiple purposes. Mr. Luck will provide a presentation about options and cost estimates for completion. To move forward, the committee should provide feedback on how to approach the tasks necessary to finish the project.

This is an informational agenda item, no formal action from the Committee is required.

11. REFUSE & RECYCLING CONTRACT - *presented by Pam Adams*

The current COG/Advanced Disposal contract for residential refuse and recycling services expires December 31, 2019. The contract covers nearly 16,000 properties in Benner, College, Ferguson, Harris, and Patton Townships.

Since June 2018 the Public Services & Environmental Committee has discussed in depth the proposed changes to the bidding specifications for the Regional Refuse and Recycling Contract in anticipation of its re-bidding in January of 2019, for a start date of January 1, 2020. *Enclosed* is a schedule of the tasks for the Request for Bid process.

Two documents define the Refuse and Recycling Residential Program: (1) the Memorandum of Understanding (MOU) with the Centre County Recycling and Refuse Authority (CCRRA) and (2) the Refuse and Recycling Request for Bid (RFB) document.

The MOU defines the CCRRA as the designated subcontractor for collection services of recyclable material in the Request for Bid (RFB), that the CCRRA will perform duties per the RFB and that COG understand the benefits to our community by the additional services provided by the CCRRA. The proposed changes to the *enclosed* draft 2020 MOU with CCRRA are:

- a) Recycling services provided by CCRRA would be expanded to include curbside organics recycling, if approved as a new service. Since the State College Borough (SCB) Compost Facility is the only option for disposal of organics in the region and SCB is not opening its facility to private haulers, CCRRA is the logical option to provide organics collection services. This would mean that CCRRA would offer both the red bin recycling service as well as the green organics (food and yard waste) recycling service.
- b) The previous timeframe for the MOU was 5 years, but a 10-year MOU is under consideration for 2020.
- c) The rate for recycling will be \$5.65/month/household.

A summary of the pros and cons of the proposed changes and CCRRA services are *enclosed*. The PSE Committee should review the MOU and determine:

- (1) if the proposed changes should be finalized or if they have any additional comments and
- (2) when the MOU should be presented to the General Forum for approval.

The proposed changes (a and b above) to the MOU were made as a reflection of implementing an organics curbside collection program and that final determination will not be made until May of 2019. *Enclosed* is a cost benefit analysis that summarizes the information that was presented to the PSE Committee at its December 6, 2019 meeting.

Enclosed is the third draft copy of the RFB, which includes all the highlighted changes in yellow. It includes input from Municipal Managers, Centre County Recycling and Refuse Authority (CCRRA) and potential bidders. Legal counsel's comments will be communicated at the meeting.

Main changes to the 2020 Refuse and Recycling Request for Bid (RFB) specifications include:

- A. Alternate Bid #A: A bid for automated cart system for the refuse collection (3 service levels for refuse)
- B. Bid Price Forms ask for cost information on
 - i. the Fee for Billing-Payment. The contractor must provide a line item for the administrative costs for billing and payment service that COG would be able to deduct from the total monthly rate if COG or its subcontractor decide to provide the billing and payment service.
 - ii. The cost for refuse service if an organics collection program is implemented. The RFB would allow for an organics collection program to be implemented at some point during the contract period if COG elects to do so.
- C. An MOU with CCRRA for 10 years that defines that they could provide curbside organics collection modeled after the State College Borough Program.
- D. The administrative fee was adjusted to change from a part-time to a full-time administrator of the program.
- E. Improved language to enhance customer service, define how bulk and excess refuse will be handled outside of Bulk Waste Collection weeks and improved education options for on-line users.

To proceed with the releasing of the RFB, the Executive Director recommends that the Public Services & Environmental Committee approve the following motion:

“That the General Forum, as recommended by the Public Services & Environmental Committee, authorizes the COG Office of Administration to advertise a Request for Bids (RFB) for the regional refuse and recycling contract.”

If approved, the PSE Committee's recommendation will be referred to the General Forum for consideration at its January 28, 2019 meeting.

12. VACANCY POLICY

COG Refuse and Recycling Policies are included in Appendix E in the Refuse and Recycling Request for Bid (RFB) and they include: Extreme Weather Cancellation Policy, Exemption Policy and Vacant Property Policy. The Vacant Property Policy that is included in the RFB is a draft in response to the PSE Committee's discussion at its November 1, 2019 meeting. The draft defines 2 types of vacancies: a) unplanned and b) planned. Examples for unplanned vacancies include:

- a) Foreclosure
- b) House for sale, but vacant
- c) Purchase of a home, rental and renovating it
- d) Death of the owner
- e) Medical condition requiring owner to move to a rehabilitation facility or nursing home
- f) Rental property in between tenants

For this type of unplanned vacancies, the draft language is stating that a credit can be applied to the property while the property remains vacant.

Examples for planned vacancies include:

- a) Vacation home
- b) Snow birds

For this type of planned vacancies, the draft language is stating that the property owner will be allowed 1 quarter's credit, which is like the State College Borough's program. They will then be responsible for the base cost for refuse and recycling service for the remainder of the year.

The PSE Committee should discuss the draft Vacant Property Policy and provide feedback. Any updates to the policy can be presented at the February PSE Committee meeting and at the February 15, 2019 pre-bid meeting with potential contractors for the RFB.

13. FUTURE COMMITTEE ACTIVITIES

For 2019, the following is a list of potential agenda items that may be considered by the Public Services & Environmental Committee:

- Review and award the Refuse and Recycling 2020 - 2024 Contract (April and May 2019)

- Develop plan for reducing organic waste going to the landfill and offering options for residents interested in organics recycling.
- Update by Code Director on provided Sewage Enforcement Officer services to College, Ferguson, Halfmoon Township and State College Borough beginning in 2019. (March 2019)
- Informational update by Code Director on (1) the Sewage Management Program, including a review of changing the pumping period for septic tanks from 3 to 6 years, and (2) the new Sewage Enforcement Officer services for College, Ferguson, Halfmoon Township and State College Borough provided by the Code Agency. (March 2019)
- Complete the greenhouse gas inventory and review a draft Climate Action Plan.
- Consider a Development of Regional Impact (DRI) request to expand the Regional Growth Boundary and Sewer Service Area (RGB / SSA) in Halfmoon Township. (May 2019)
- Consider a potential Act 537 Plan Special Study to extend public sewer along Meeks Lane. This is related to the Halfmoon Township DRI and may be requested by UAJA.
- Review and potentially approve a Task Activity Report (TAR) to update the Centre Region Act 537 Plan. This would include an evaluation of the Beneficial Reuse Service Area. This is being prepared by the CRPA in conjunction with the UAJA and their consultants. If approved this will result in initiation of an update to the Act 537 Plan.
- Review final agreement regarding Penn State connection to the UAJA system when completed by PSU and UAJA.
- Begin discussions regarding the preparation of a watershed-wide integrated water resources plan with other stakeholders in the Spring Creek Watershed.
- Meet twice during a regular PSE Committee meeting with the Source Water Protection Project Management Team (PMT) and occasionally receive updates on PMT activities.
- Joint meeting with Public Safety Committee to discuss current issues as they relate to the use of public safety resources (fire, police, etc.) for managing utility and road construction projects or incidents. (November 2019)

14. OTHER BUSINESS

- A. Matter of Record - As a member of the General Forum you are invited to a Lunch and Learn session about the State College Borough Water Authority, the main water service provider in the Centre Region.

Mr. Brian Heiser, the Authority's Executive Director, will lead the session. He will provide a brief history of the Authority, water sources, major challenges including growth and regulatory, infrastructure replacement/improvements (there are some big projects coming up), and financing and rate structures.

The session will start at **12:00 Noon, Wednesday, January 30, 2019**. It will include lunch and lasts about 90 minutes. The Lunch and Learn will be held at the Water Authority building, 1201 Branch Road. If you want to attend please contact Cheryl Stamm, COG Office of Administration, at 231-3077 or cstamm@crcog.net. Also please let Cheryl know if you have any dietary restrictions or if there are other topics you want Mr. Heiser to address.

15. ADJOURNMENT

CENTRE REGION COUNCIL OF GOVERNMENTS

2643 Gateway Drive, Suite 3

State College, PA 16801

Phone: (814) 231-3077 • Fax: (814) 231-3083 • E-Mail: jsteff@crcog.net

STEERING COMMITTEE

PARKS AND RECREATION REGIONAL COMPREHENSIVE PLAN

College Township Municipal Building

1481 E. College Avenue, State College, PA 16801

Tuesday, January 8, 2019

12:00 Noon

AGENDA

1. CALL TO ORDER

Chair Bruce Lord will convene the meeting.

2. CITIZEN COMMENTS

Members of the public are invited to comment on any items not already on the agenda (five minutes per person time limit, please). Comments relating to specific items on the agenda should be deferred until that point in the meeting.

3. APPROVAL OF MINUTES

A copy of the minutes of the December 4, 2018 Steering Committee meeting is *enclosed*.

4. UPDATE ON WORK COMPLETED

Ms. Landes and Ms. Yost will update the committee on the work completed to date.

5. REVIEW OF SURVEY QUESTIONS AND COVER LETTER

Penn State University students have created the survey and the committee reviewed the questions at its December meeting to send the group changes/additions to be made. The questionnaire has been revised to reflect the comments received from the committee, but the format of the questionnaire is not complete. *Enclosed* is a draft of the updated survey for the committee's final review.

The committee should also review the *enclosed* draft cover letter that will accompany the survey and note areas of concern.

Mr. Alan Graefe from Penn State is hoping to attend the meeting to answer any questions the committee may have.

6. SURVEY POPULATION

Mr. Steff will report on possible sources of information for developing a distribution list of individuals who will receive a questionnaire. It should be noted that there is no data list that names the individuals who live at a specific rental property.

7. PARKLAND INVENTORY AND ASSESSMENT

On December 10, 2018, Ms. Landes and Ms. Yost joined the CRPR Parks Manager, CRPR Director, and Mr. Steff to visit the park sites in the Centre Region. The consultants will share their general observations with the committee.

8. PROGRAM INVENTORY

Ms. Landes and Ms. Yost will provide a draft Program Inventory for the committee to review during the next several weeks. Committee comments should be forwarded to Ms. Cheryl Stamm for compilation and referral to the consultants.

9. PROMOTION OF JANUARY 30 PUBLIC MEETING

The State College High School is reserved for Wednesday, January 30th to hold the first public meeting. A snow date for February 6th is also confirmed. The event is posted on the CRPR and COG's websites. *Enclosed* is the flyer.

The committee should discuss the event, set-up logistics, and promotional ideas.

10. NEXT STEPS

Ms. Landes and Ms. Yost will outline the next steps for preparing the Parks and Recreation Regional Comprehensive Plan.

Committee comments are welcomed.

11. 2019 MEETING DATES

The committee should choose the location, time, and dates for its 2019 meetings. During 2018, the committee met on the first Tuesday of the month at 12:00pm in the COG Forum Room. If the Steering Committee meetings continue the first Tuesdays in 2019, the following dates would be scheduled:

	May 7	September 3
February 5	June 4	October 1
March 5	July 2	November 5
April 2	August 6	December 3

12. OTHER BUSINESS

- A. Matter of Record - If the committee chooses the dates listed above, the next meeting will be on Tuesday, February 5, 2019 at 12:00pm at the COG Building.
- B. Matter of Record - *Enclosed* is the COG Resolution for Meeting Etiquette as well as the Guidelines for Meeting Etiquette adopted by the General Forum at its November 26, 2018 meeting.

The intent of these documents is to encourage all COG related entities to foster and maintain an environment in which all individuals are treated with respect and dignity. The *Code of Conduct* section of the Guidelines offers suggestions for behavior at meetings. The *Notes for the Chair* section provides insights for meeting facilitation. In combination the *Code of Conduct* and *Notes for the Chair* sections will help to set a welcoming tone for Committee members who want to offer new ideas or provide comments on agenda items.

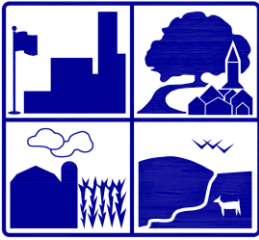
- C. Matter of Record - Ms. Landes and Ms. Yost will be meeting with the Municipal Managers following the committee meeting on January 8, 2019. It will be an opportunity for the consultants to hear ideas and concerns for each municipality.

13. ADJOURNMENT



Manager's Report January 21, 2019

1. I attended a Municipal Manager Committee meeting of the Chamber of Business and Industry of Centre County on January 15th. Topics discussed included updates on several economic development projects including KCF Technologies and Morgan Advanced Materials. Also discussed was the planned Economic Development Summit scheduled for Saturday, January 26th. Unfortunately, due to lack of attendees, this summit will be postponed to a later date.
2. I attended the kickoff meeting of the Agritourism Committee of the Chamber of Business and Industry of Centre County on January 16th. A verbal report on the topics discussed will be provided to the Board.
3. The Ferguson Township Parks and Recreation Committee met on Monday, January 14th to conduct its reorganizational meeting and discuss goals and priorities for 2019.
4. The Ferguson Township Non-Uniformed Pension Advisory Committee met on January 16th to receive a presentation from an Accredited Investment Fiduciary (AIF) to discuss potential services to the non-uniformed pension plan relative to the selection of investment options offered. The Committee will meet again to debrief on the presentation and a recommendation may be forthcoming to the Board to engage an AIF to provide this service.
5. I attended a joint meeting of the Centre Region Parks and Recreation Authority and COG Parks Capital Committee on January 10th. Discussion topics included the amendment to the Whitehall Road Regional Park Master Plan and modifications to the Millbrook Marsh Nature Center lease. A separate meeting of the Centre Region Parks and Recreation Authority took place on January 17th. A brief verbal report will be provided on the discussion topics from that meeting.
6. Work continues on the concept plan for the Suburban Park Master Plan update. A public meeting was held on January 17th to receive input from the adjoining neighborhood and all public interested in participating.
7. Staff is currently working on a resolution to concerns expressed to the Board relative to the UAJA Greenbriar Demonstration Project.



TOWNSHIP OF FERGUSON

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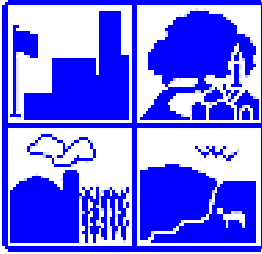
Planning & Zoning Director's Report Monday, January 21, 2019

PLANNING COMMISSION

Planning Commission will reconvene for their Organizational and Regular Meeting on January 28, 2019.

LAND DEVELOPMENT PLANS AND OTHER PROJECTS

- An Active Plan List is attached for the Board of Supervisors consideration (1/16/19).
- **ZONING AND SALDO UPDATE**
Staff met with Carolyn Yeagle on January 9, 2018 at 1:00 p.m. to review final comments from Planning & Zoning staff, Arborist and Tree Commission. The fifth draft of both documents will be available by January 18, 2019 for further review and comment.
- **SOURCE WATER PROTECTION OVERLAY**
Planning & Zoning staff addressed Planning Commission and SCBWA comments from the January 7, 2019 Board of Supervisors meeting.
- **PINE HALL – GENERAL MASTER PLAN SUBMISSION**
Planning & Zoning staff has been working on recommendations for the Workforce Housing Agreement and the Terms & Conditions prior to final General Master Plan consideration.
- **PINE GROVE MILLS SMALL AREA PLAN**
The Steering Committee met with Jim May and Planning & Zoning staff on Thursday, January 10, 2019 and received the Preliminary draft of Existing Conditions, preliminary draft of the approach to the Implementation of the Small Area Plan and an example of the goals, objectives, and action can be listed for each of the themes. Steering Committee members spent a majority of meeting reinforcing ideas behind each of the eight identified themes of the plan. A progress report will be given to the Board of Supervisors and Planning Commission at an upcoming meeting.
- **ORDINANCE ENFORCEMENT OFFICER**
Serina Weaver resigned from the position on December 28, 2018. Staff are currently conducting interviews for her replacement. In the meantime, the Zoning Administrator and Police Department will be assuming OEO regular duties related to sidewalk snow removal, parking and animal calls.
- **PLANNING COMMISSION MEMBERSHIP**
The Planning & Zoning Director forwarded a “Member Starter Kit” to Mr. Jerry Binney that contains a copy of the Municipalities Planning Code, Planning Series booklets for Subdivision and Land Development, Comprehensive Planning and the Planning Commission along with sample meeting agendas and minutes.



TOWNSHIP OF FERGUSON

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TO: Ferguson Township Board of Supervisors

FROM: Lindsay K. Schoch, Community Planner
Raymond J. Stolinas, AICP, Planning & Zoning Director

DATE: January 16, 2019

SUBJECT: Active Plans in the Township

In an effort to keep the Planning Commission and Board of Supervisors up-to-date on current developments, staff is providing a list of Active Plans and other Projects in the Township.

Currently, the Township has two (2) Active Plans and one (1) Proposed Concept Plan.

Harner Farm Proposed Concept Plan: The Planning Commission held a preapplication conference with Aspen Whitehall Partners, LLC, Aspen Route 26 Partners, LLC, Penn Terra Engineers, and representatives from Sheetz on Tuesday, December 4, 2018. The proposal is for approximately 27 acres encompassing the southeastern portion of the Harner Farm. The developer is proposing a 6,077 square foot Sheetz convenience store, a multi-use building with retail on the first floor and apartments on the second floor, and a 36 lot residential subdivision. The Planning Commission had the opportunity to make comments and ask questions, but did not have major concerns about the project as it is proposed in the Concept Plan. ***A Traffic Scoping Meeting was held on December 19, 2018 at which time the Township Engineer, Consulting Traffic Engineer and Community Planner met with PennDOT, PennTerra, Wooster Engineers, and Aspen Route 26 Partners to discuss the scoping application. The scoping application has been amended and resubmitted for signatures. The scoping application must be approved and signed prior to the Traffic Impact Study being conducted.***

King Wealth Strategies Land Development Plan: This Plan, submitted on June 26, 2018 by Penn Terra Engineering, Inc. on behalf of the owners/applicants, Laura and Thomas King, is proposing a conversion of the existing residential rental property located at 222 Blue Course Drive to their financial planning business office. Tax Parcel 24-12-12 contains .369 acres and is zoned General Commercial and lies within the Corridor Overlay. The existing building is 2,800 square feet with 1,400 on both the first floor and the basement. Prior to the submission of the plan, five (5) variances were approved by the Zoning Hearing Board. They are as follows: Reduction of the required parking spaces by 2 spaces; Reduction of the 50' front parking setback by 34'; Reduction of the 15' flexible buffer yard by 7.5'; Reduction of the 75' required minimum distance between driveway entrances by 15'; and Reduction of the 18' required parking stall length by 2'. The Planning Commission made its initial review and comment on the Plan at its July 9, 2018 meeting. The applicant is requesting a variance and two appeals. The Variance (granted) for relief from Section 27-206, Yard Requirements and the Appeals (***withdrawn***) for the interpretation of Section 27-206 and Chapter 26, Stormwater. The Plan was resubmitted to staff for review along with a request for consideration of a modification from Chapter 22, Subdivision and Land Development. The request for modification is relief from Chapter 22, Part 5, Section 22-510.2.C Grading, which states: "in all cases, the bottom of the excavations or fills shall be a minimum of five feet from the property line of developed lots. ***The Request for Modification is on the January 21, 2019 Board Agenda for Consideration. Plan Expiration: April 2, 2019.***

Pine Hall Traditional Town Development General Master Plan: On February 21, 2018 Residential Housing Development, LLC submitted a General Master Plan for the Pine Hall TTD. A Master Plan currently exists for Pine Hall, but Residential Housing Development, LLC has a different vision, therefore is proposing a new General Master Plan. The Plan was at a stay until decisions were made from both the Zoning Hearing Board concerning the validity challenge and the Court of Common Pleas concerning the procedural challenge—both decisions have been denied and since, appealed by Circleville Partners. Staff submitted initial plan comments to the developer on Friday, March 30, 2018. The Board of Supervisors reviewed the Plan and made initial comments at its April 16, 2018 meeting and the Planning Commission reviewed and made initial comments at its April 23, 2018 meeting. Staff met with the Pine Hall Development Team to discuss initial comments. A Joint Public Work Session with the Board of Supervisors and Planning Commission was held on June 5, 2018. The Pine Hall Design Team submitted a summary of the meeting to staff. Trans Associates submitted the Traffic Impact Study to staff on Monday, July 30, 2018 for review. The General Master Plan was formally submitted to staff for review on August 1, 2018, which started the 90-day review period for the Board of Supervisors to consider approval of the Plan. The Planning Commission reviewed the proposed plan on Monday, August 27, 2018 and had minimal comments and some public comment. Staff has prepared a schedule to move the Plan forward. The traffic study is under review, terms and conditions and agreements are being prepared in preparation for a Public Hearing. Circleville Partners appealed the decision of the Zoning Hearing Board (to the Court of Common Pleas) and the Court of Common Pleas decision (to the Commonwealth Court). Plan review comments were submitted to the developer on September 19, 2018. Staff had a meeting with the Design Team on October 2, 2018 to discuss the various agreements, terms and conditions, and other items. On October 30, 2018, the plan was resubmitted to staff, reviewed, and comment letter was sent to the developer and their team on November 14, 2018. The traffic impact study is still in discussions and the developer's transportation engineer is reviewing township comments. Plan Expiration is January 24, 2019. ***Traffic Impact Study is still undergoing review and staff is working on the agreements that go along with the plan. No Update.***



TOWNSHIP OF FERGUSON

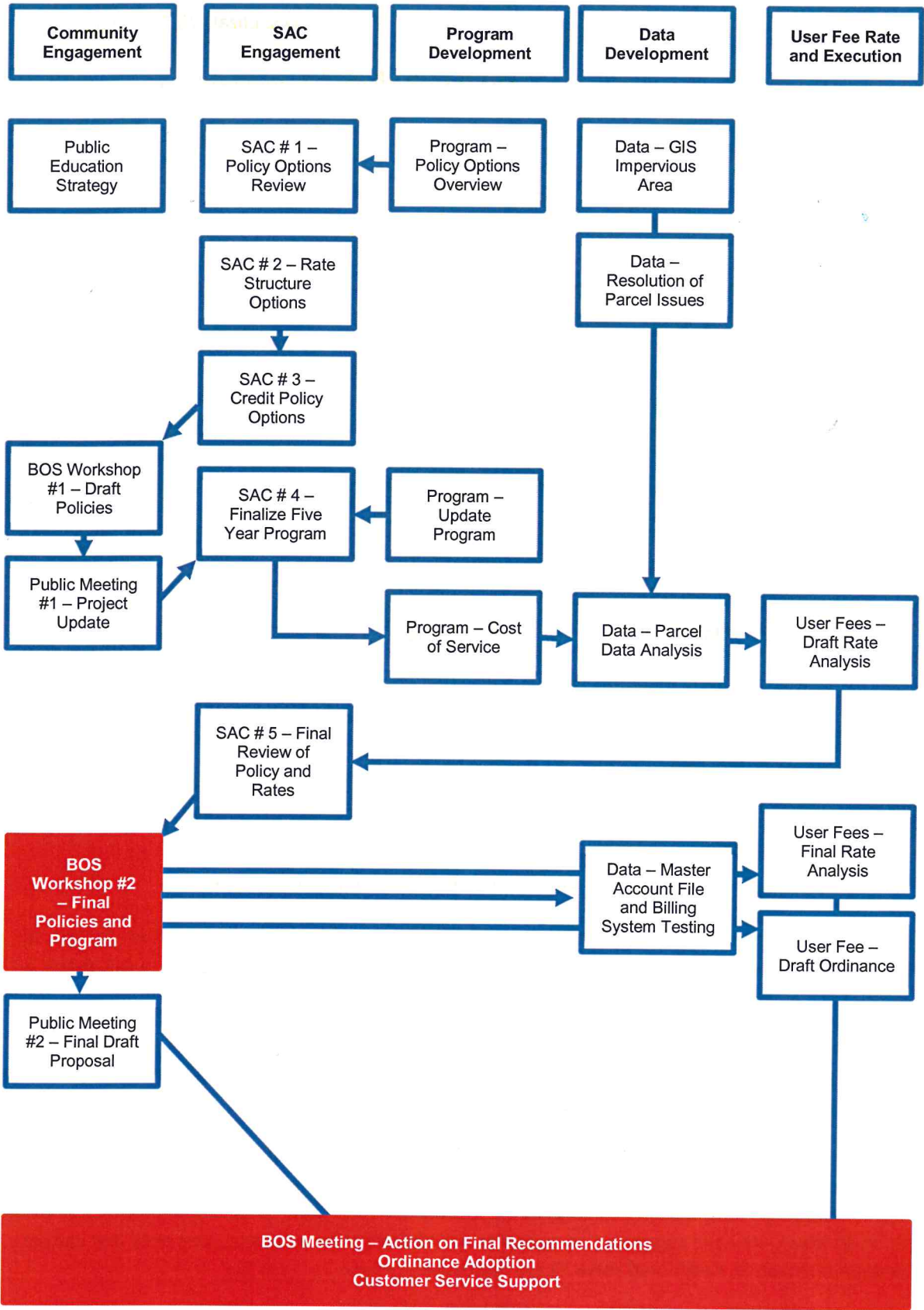
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Public Works Director's Report to the Board of Supervisors for the regular meeting on January 12, 2019

- 1. Transportation Mobility Study** – This study led by McCormick Taylor focuses on identifying improvements for walking, biking, driving, and using transit in the areas of N. Atherton St., Martin St., Blue Course Dr., Cherry Ln., Clinton Ave., and Aaron Dr. A working group will meet at the end of January to review public comments, safety audits, and discuss suggested improvements. Deliverables include a recommended list of projects with cost estimates and a report to the Board of Supervisors.
- 2. LEED Gold Public Works Building** – This project is in the design phase with an anticipated let date (bidding) in July, 2019. Staff provided comments on a 90% land development submission. Staff is reviewing policies related to green cleaning, sustainable purchasing, and solid waste management for adoption as part of the LEED certification.
- 3. Stormwater Fee Feasibility Study** – The Township will enter into a contract with Wood in 2019 to complete phase 2 of this study. Staff will contact interested individuals and re-establish the stormwater advisory committee. [See attached study schedule.](#)
- 4. Arborist and Ferguson Township Tree Commission** – The FTTC meets on January 28th at 5:30pm. Agenda items may include discussing: a tree give-away program, a tree preservation ordinance, concerns regarding road standards, SALDO/zoning update, the tree planting contract, a tree issue at 2319 Falconpointe Drive.
- 5. Maintenance Section:** Maintenance work is weather dependent and includes winter storm fighting operations, vehicle maintenance, building maintenance, work orders.
- 6. Engineering Section:** Engineer staff continues work on the design of 2019 road capital projects with support from GIS staff. [See attached 2019 project list.](#)

Figure 1



D. Proposed Schedule for Feasibility Study

Upon review of the components of the project, the Team agrees that the timeline presented below is appropriate to achieve a goal of new revenue in FY2020. The overall strategy for the Implementation Plan is to be flexible and adjust to accommodate the Advisory Committee meetings aligned to work flow. We anticipate that the Advisory Committee will meet 4 to 6 weeks apart, while policy and finalization of cost models is drafted and/or completed. Implementation of the billing of fees is anticipated to occur in January 2020. The June meeting of the Board of Supervisors is to gauge continuing support for adoption of fees. It is a “go/no-go” decision point and the discussion will focus on funding policies and rate options.

The final decision to implement will occur during the annual budget process, including public meetings, Board briefings and public hearings to adopt the enabling legislation.

This timeline can be confirmed during negotiation of the full scope of work, as presented in our Project Understanding in Section A above.

<i>Task</i>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Project Administration												
Advisory Committee Activities												
5 meetings (Prep, event, follow-up)		X		X	X	X		X				
Program Evaluation												
Finalize Future Program												
Funding and Rate Analysis												
GIS Data Review												
Master Account File Development												
Billing System Integration												
Credit Policy and Ordinance Draft												
Public Education (5 presentations)												
Board of Supervisors						X					X	
General Public							X		X			
Customer Service Training												X
Continuing Support *												

*The Wood Team will continue to support the Township staff during the first six months of implementation. It is assumed that this support will be accomplished by web-conferencing and primarily focus on potential account appeals, credit review, and over all policy issues. If the hours budgeted in the cost proposal below for continuing support are not sufficient, Task 10 can be utilized to extend labor hours by amendment to the project budget using the provided rate schedule in Section E.

FERGUSON TOWNSHIP DEPARTMENT OF PUBLIC WORKS

2019 CONTRACTS

Red font indicates tentative

REPORT DATE: January 15, 2019

CONTRACT #	DESCRIPTION	Project Manager	Budget	Engineer's Estimate	Bid Amount	Year End Projection with change orders	Amount to be re-budgeted in 2019 and not in current 2020 CIP	Low Bidder	CONTRACT DURATION (DAY)	PUBLIC MEETING	AD BID	Pre-Bid Meeting	Bid Opening	AWARD	Sent Notice of Award	Recv'd Notice of Award	Recv'd Insur	Recv'd Bonds	Signed Agreement	Notice to Proceed	Pre-con Mtg	Complete Date
2019-C13	Street Trees	LK	\$35,760	\$35,760					90	n/a	1/8/19	n/a	1/29/19	2/4/19								
01.455.375	New street trees		combined																			
01.455.375	Street Tree Replacements		combined																			
2019-C14	Stump Removal	LK	FTPW	\$0.00	\$0.00	\$0.00	\$0.00	n/a		no	n/a											
	Completed by FTPW		\$0																			
2019-C15	Street Tree Pruning	LK	\$41,250																			
01.400.455.450																						
2019-C16	Tree Treatment	LK	\$25,000	\$25,000.00	\$25,000.00	\$25,000.00	\$0.00	Bartlett	365	no	extension											
01.455.450	Oak Wilt mitigation		\$25,000																			
01.455.450	Ash tree injections		\$0																			
2019-C17	Guide Rail Repair	RTS	\$5,000	As needed																		
35.439.610	As needed																					
2019-C18	Traffic Calming Study & Implementatation	RAS	\$100,000																			
32.439.610	As needed																					
2019-C19	MS4 Chesapeake Bay Pollutant reduction Plan Implementation	RAS	\$105,000																			
30.446.610																						
2019-C20	Science Park Traffic Signal	RAS	\$25,000																			
32.408.314																						
2019-C21	Pine Grove Mills LED Light Conversiion	DJM	\$32,000																			
30.434.372																						
2019-C22	Playground Safety & Upgrade	RTS	\$37,500	As needed																		
30.454.750																						
2019-C23	Paving Sections of Various Parks	SM	\$12,000																			
30.430.750																						
2019-C24	West Blade Turn around - ROW	DJM	\$16,000																			
32.439.313																						
2019-C25	Left Turn Arrows Teaberry / Blue Course	RAS	\$21,000																			
32.439.610																						
2019-C26	Signal Cabinet Installation	RAS	\$10,500																			
30.430.750																						
2019-C27	GLG Round 4 Detection Upgrade	RAS	\$100,000																			
32.439.610																						
2019-C28	SW Fee Feasibility, Ph 2	DJM	\$125,000																			
30.446.313																						
2019-C29	Bike Path Feasibility Study		\$25,000																			
30.454.750																						
2019-C30	Overhead Luminare LED	RAS	\$3,780																			
30.430.750																						
	Drinking Fountain Replacement	SM	\$10,000																			
30.454.750	1) Fairbrook (upper), 2) Greenbriar/Saybrook																					



FERGUSON TOWNSHIP POLICE DEPARTMENT

December 2018 Calls for Service

Part I Crimes Summary	Previous Month Dec. 2017	Current Month Dec. 2018	Previous YTD Dec. 2017	Current YTD Dec. 2018
Homicide	0	0	0	0
Rape	0	0	0	2
Robbery	0	1	3	2
Assault	2	4	34	25
Burglary	2	3	9	18
Theft	6	9	83	70
Auto Theft	0	0	4	4
Arson	0	0	0	0
Total	10	17	133	121

Part II Crimes Summary	Previous Month Dec. 2017	Current Month Dec. 2018	Previous YTD Dec. 2017	Current YTD Dec. 2018
Forgery	1	0	8	6
Fraud	10	3	101	73
Embezzlement	0	0	0	0
Receiving Stolen Property	0	0	0	0
Criminal Mischief	7	2	53	30
Weapons Violation	0	0	1	1
Prostitution and Commercialized Vice	0	0	1	0
Sex Offense	0	0	11	11
Drug Violation	0	2	28	16
Offenses Against Family	0	1	2	3
DUI	0	2	51	33
Liquor Laws (minors law, furnishing, false ID)	1	1	22	12
Public Intoxication	4	1	30	35
Disorderly Conduct	19	17	301	298
Vagrancy	0	1	0	2
All Other Criminal	1	4	51	38
Total	43	34	660	558

Total Crimes	Previous Month Dec. 2017	Current Month Dec. 2018	Previous YTD Dec. 2017	Current YTD Dec. 2018
Part I Crimes	10	17	133	121
Part II Crimes	43	34	660	558
Total	53	51	793	679



FERGUSON TOWNSHIP POLICE DEPARTMENT

December 2018 Calls for Service

Other Calls for Service	Previous Month Dec. 2017	Current Month Dec. 2018	Previous YTD Dec. 2017	Current YTD Dec. 2018
Vehicle Code - Crashes	35	19	331	302
Vehicle Code - Other Traffic Incidents	54	38	668	676
Health and Safety – EMS Assist	57	65	745	691
Health and Safety – Fire Assist	12	8	124	115
Other Health and Safety Incidents	12	11	292	229
Alarms	17	11	193	223
Suspicious Activity	31	45	360	379
Unsecure Property	2	3	18	14
Found Property	5	2	71	49
Lost Property	2	5	43	54
Community Relations/ Crime Prevention	3	5	72	82
Car Seat Check	1	1	15	15
School Check	16	20	174	249
Township Ordinances	9	7	86	61
Request for Assistance – Attempt to locate	2	5	44	43
Request for Assistance – Can-Help	0	1	15	14
Request for Assistance – Civil Matter	10	6	116	91
Request for Assistance - Other	51	51	577	544
Missing Persons/ Runaways	0	0	12	6
Animal Complaints	6	9	227	189
Department Information	3	2	59	60
Assist Other Agencies	16	5	116	113
Total	344	319	4358	4199

Total Calls for Service	Previous Month Dec. 2017	Current Month Dec. 2018	Previous YTD Dec. 2017	Current YTD Dec. 2018
Part I Crimes	10	17	133	121
Part II Crimes	43	34	660	558
Other Calls for Service	344	319	4358	4199
Total	397	370	5151	4878



FERGUSON TOWNSHIP POLICE DEPARTMENT

DECEMBER 2018

	2017	2018	Previous YTD	Current YTD	Notes:
Traffic Citations	45	12	690	754	
Parking Tickets	130	129	1004	1268	
Traffic Stops	125	62	1928	2104	
Criminal Arrests	9	19	194	175	
Supplements	170	215	2672	2316	
Hearings	17	12	251	221	
Med Return	19.34	20.55	315.53	281.74	

Note:

- *Traffic Stops may not include pre-scheduled selective enforcement details where two or more police vehicles are assigned for specific enforcement purposes (such as Aggressive Driving Grant details).*
- *Criminal Arrests are the number of people arrested, not the number of charges, counts or cases cleared. These include arrests made at the time of the incident as well as those filed after an extended investigation.*

Department Notes:

- A 51-year-old male died from a drug overdose. Detectives are working to identify the source of the drugs.
- Officers administered Narcan to a 26-year-old male experiencing a possible drug overdose. The man was transported to the hospital for treatment. He survived the overdose.
- A 24-year-old male was struck by a car as he was crossing Blue Course Drive near Northland Shopping Center. The man sustained minor injuries. It was dark, rainy and the pedestrian was wearing dark clothing.

- The department is investigating a robbery. The victim reported that he was knocked to the ground, kicked and punched by the suspects. His wallet was taken during the incident. The suspects were described as: (Suspect 1) white male, approximately 6 feet tall, average build; (Suspect 2) black male, approximately 6 feet tall, heavy set. The investigation continues.
- Three males stole \$5,400 of merchandise from a retail store. The individuals are part of a group traveling the east coast stealing electronics. The investigation continues.
- A 23-year-old male Penn State student was arrested after he entered numerous apartments in the 900 and 1000 blocks of West Aaron Drive. He was charged with multiple counts of Criminal Trespass, Loitering and Prowling at Night. The investigation continues.
- A 19-year-old male was charged with Theft after he stole \$900 from his employer.
- A 29-year-old male was arrested and charged with simple assault after he assaulted his girlfriend.
- A 28-year-old male was arrested and charged simple assault after he threw a coffee mug at his girlfriend and injured her eye.
- Update – The 23-year-old male that shot himself at Tudek Park has been released from the hospital.

Community Relations:

- Officers conducted Run / Hide / Fight training at a medical office.
- Officers performed a threat assessment at a local business.



Ferguson Township Report Activity

1/7/2019

For Incidents Reported 12/1/2018 12:00:01AM to 12/31/2018 11:59:59PM

<u>OCCURR DATE</u>		<u>Reporting Area</u>
	911 CALLER DISCONNECT	
12/31/18	911 ACCIDENTAL	Park Hills Area
12/31/18	911 Disconnect	Blue Golf Course
	ALARM, BURGLAR	
12/22/18	Individual house sitting set off alarm.	Greenbriar/Chestnut Ridge Area
	ALCOHOL, MINORS LAW	
12/15/18	Traffic Stop-4 passengers under 21 had been drinking.	Park Crest Terrace Apts.
	ANIMAL, DOG AT LARGE	
12/19/18	Caller's dog was attacked by neighbor's dog	Teaberry Ridge
12/17/18	dog found on N. Allen St	Overlook Heights
	BURGLARY, EARLIER	
12/29/18	Burglary with property taken.	Park Hills Area
12/18/18	Residential structure with items stolen from it	StoneBridge/Coral Acres/Good T
	BURGLARY, NOW	
12/10/18	Unknown male took items from caller's room	Aaron/Clinton
	COMMUNITY RELATIONS, COP	
12/3/18	run/hide/fight training for medical clinic staff	Station Report
12/19/18	Threat Assessment of Medical Clinic	StoneBridge/Coral Acres/Good T
	CRIMINAL MISCHIEF, EARLIER	
12/23/18	Caller returned home to find damage to his front door (attempted break in)	Pine Grove Mills
	DEPARTMENTAL INFORMATION	
12/15/18	Duplicate case created.	Aaron/Clinton
12/21/18	Megans Law notification received	Station Report
12/3/18	Caller reporting possibly drug use, threats, and wanted person	Sylvan View
12/1/18	Man wanted statement by girlfriend documented	Aaron/Clinton
	DISORDERLY CONDUCT, LOUD MUSIC	
12/7/18	Loud Party	StoneBridge/Coral Acres/Good
	DISORDERLY CONDUCT, LOUD VOICES / YELLING	
12/21/18	Loud voices on back porch	Park Hills Area
12/31/18	Noise complaint	StoneBridge/Coral Acres/Good
12/26/18	Verbal argument between roommates over a door being left open	Aaron/Clinton
12/31/18	49 yo female became aggitated and threw items	Overlook Heights
	DISORDERLY CONDUCT, PERSON(S)	
12/11/18	roommate dispute over dirty living environments	Glenview/Haymarket
	DOMESTIC DISPUTE, EARLIER	
12/21/18	Caller's estranged wife came to his house and pushed him	
12/8/18	Verbal disagreement	
	DOMESTIC DISPUTE, NOW	
12/20/18	Verbal domestic dispute between husband and wife.	
12/12/18	Husband threw mug at wife and gave her a black eye	
12/13/18	verbal domestic, no physical contact	
12/26/18	Verbal dispute between boyfriend and girlfriend	
12/30/18	Verbal domestic dispute between male and female	
12/25/18	Argument between husband and wife	
12/23/18	Physical domestic dispute between male and female	
12/22/18	2 party domestic, verbal, pushing and shoving	
	DUI	
2/14/18	18 yom arrested for DUI.	Park Crest Terrace Apts.



Ferguson Township Report Activity

1/7/2019

For Incidents Reported 12/1/2018 12:00:01AM to 12/31/2018 11:59:59PM

OCCURR DATE

Reporting Area

HARASSMENT, BY COMMUNICATIONS

12/11/18 Report of threatening facebook messages
 12/2/18 Individual received unwanted text messages
 12/4/18 Report of unwanted threatening text messages

Aaron/Clinton
 Science Park Rd/Gatesburg Rd A
 unknown

HARASSMENT, EARLIER

12/8/18 Third party report of an assault at a party
 12/10/18 Neighbor dispute
 12/24/18 Male sprayed duster in victim's drink.
 12/10/18 Male left love notes on male's car

Overlook Heights
 Park Hills Area
 Aaron/Clinton
 Overlook Heights

HEALTH AND SAFETY, ASSIST INVALID

12/11/18 86 yof fall patient no injuries

StoneBridge/Coral Acres/Good t

HEALTH AND SAFETY, EMS ASSIST

12/12/18 89 yof ground level fall
 12/11/18 76 yof - trouble breathing
 12/12/18 52 yof fall patient with knee and arm pain
 12/10/18 82 yof - stroke symptoms
 12/11/18 51 yof with high blood pressure
 12/11/18 90 yof trouble breathing
 12/9/18 82 yof slid off of her bed and needed assistance.
 12/9/18 86 YOF ground level fall.
 12/2/18 24 yom - conscious alcohol overdose
 12/8/18 83 yof with low blood pressure.
 12/6/18 82 yom feeling weak. Taken to MNMC.
 12/6/18 86 yof - ground level fall
 12/6/18 86 YOF low BP and AFIB.
 12/5/18 67 yof with rectal bleeding
 12/5/18 64 yom illness
 12/6/18 34 YOM uncontrolled nose bleed.
 12/6/18 72 YOF fainted and unresponsive.
 12/4/18 52 yof shortness of breath
 12/5/18 63 YOM with possible kidney stones
 12/4/18 79 yof with shortness of breath
 12/1/18 58 yom who had fallen
 12/1/18 76 yof who had fallen
 12/2/18 58 YOM took more medication than prescribed
 12/1/18 70 yom with knee pain
 12/3/18 82 yof with chest pain
 12/15/18 84 yom ground level fall.
 12/16/18 84 yom fell and needed assistance getting up.
 12/14/18 28 yom passed out at the bar.
 12/14/18 22 yom fell off bike and cut head
 12/14/18 60 yo male on Hospice transported to the MNMC
 12/14/18 52 yof feeling ill.
 12/13/18 73 yom with many health issues needs ride to MNMC.
 12/19/18 72 yof - possible UTI
 12/19/18 45 yof was having trouble breathing.
 12/19/18 72 yof with chest pains
 12/25/18 47 yom with back pain
 12/26/18 51 YOF lethargic after dialysis
 12/26/18 9 yof, having seizure.
 12/27/18 48 YOF trouble breathing

Tadpole Rd.
 Pine Grove Mills
 Aaron/Clinton
 Park Hills Area
 Whitehall/Nixon/Plainfield
 Pine Grove Mills
 Overlook Heights
 Tadpole Rd.
 unknown
 StoneBridge/Coral Acres/Good t
 Park Hills Area
 StoneBridge/Coral Acres/Good t
 Science Park Rd/Gatesburg Rd A
 Greenbriar/Chestnut Ridge Area
 StoneBridge/Coral Acres/Good t
 Science Park/Pine Hall Dr
 Greenbriar/Chestnut Ridge Area
 Overlook Heights
 StoneBridge/Coral Acres/Good t
 Whitehall/Nixon/Plainfield
 Park Hills Area
 Greenbriar/Chestnut Ridge Area
 StoneBridge/Coral Acres/Good t
 Aaron/Clinton
 Science Park/Pine Hall Dr
 StoneBridge/Coral Acres/Good t
 Glenview/Haymarket
 Overlook Heights
 Overlook Heights
 StoneBridge/Coral Acres/Good t
 Overlook Heights
 Park Hills Area
 Overlook Heights
 Overlook Heights
 StoneBridge/Coral Acres/Good t
 StoneBridge/Coral Acres/Good t
 Science Park Rd/Gatesburg Rd A
 StoneBridge/Coral Acres/Good t
 Glenview/Haymarket



Ferguson Township Report Activity

1/7/2019

For Incidents Reported 12/1/2018 12:00:01AM to 12/31/2018 11:59:59PM

<u>OCCURR DATE</u>	<u>HEALTH AND SAFETY, EMS ASSIST</u>	<u>(Continued)</u>	<u>Reporting Area</u>
12/27/18	21 YOM fainted		StoneBridge/Coral Acres/Good H
12/30/18	40 yof semi-unresponsive due to drug/alcohol combination.		Aaron/Clinton
12/29/18	57 YOM with chest pains		Aaron/Clinton
12/28/18	52 yof with high ammonia levels.		Overlook Heights
12/16/18	Unattended death, possible drug overdose.		Overlook Heights
12/24/18	75 yof with pain in left leg		Glenview/Haymarket
12/23/18	82 yof feeling weak.		Northland Bowl Complex
12/24/18	20 YOF overdose on Tylenol		Park Hills Area
12/15/18	66 yo male rectal pain		Science Park/Pine Hall Dr
12/15/18	76 yom with abdominal pain		Greenbriar/Chestnut Ridge Area
12/31/18	77 yom passed out multiple times		Gatesburg Rd.
12/31/18	90 yo female flu like symptoms		Glenview/Haymarket
12/31/18	64 yo female fell and hurt her hip		Overlook Heights
12/31/18	85 yof nose bleed		Park Hills Area
12/31/18	62 yof low blood sugar.		Sylvan View
12/31/18	30 yom with chest pains		Pine Grove Mills
12/31/18	84 yom hip pain.		Park Hills Area
12/31/18	90 yof trouble breathing.		Pine Grove Mills
HEALTH AND SAFETY, FIRE ASSIST			
12/20/18	fire at Elementary School-was bad element in dishwasher-all kids were fine		Pine Grove Mills
12/4/18	Small oven fire		Pine Grove Mills
12/15/18	Small garage/kitchen fire.		StoneBridge/Coral Acres/Good H
HEALTH AND SAFETY, OTHER-NON URGENT			
12/5/18	Concerns about male's behavior		Pine Grove Mills
HEALTH AND SAFETY, OTHER-URGENT			
12/19/18	Dispatch said a person told a friend they were going to hurt themself.		SC Park Apts.
12/31/18	9 yom left home alone overnight. Mother arrested for DUI by PTPD.		Science Park/Pine Hall Dr
12/13/18	23 yom - suicide attempt		Aaron/Clinton
12/15/18	Caller said older woman was going to drive through their yard and she stated she was lost.		Aaron/Clinton
12/29/18	Check apartment for female		StoneBridge/Coral Acres/Good H
MISSING PERSON, RUNAWAY			
12/8/18	Caller said 17 yom son crawled out window and ran off to be with friends.		Aaron/Clinton
12/10/18	13 yom did not return home from school in Bellefonte.		Aaron/Clinton
ORDINANCE VIOLATIONS, OTHER			
12/6/18	Worker running generator overnight and starting before 7 AM.		Science Park/Pine Hall Dr
ORDINANCE VIOLATIONS, SOLICITING			
12/20/18	Door to door sales without a permit.		Aaron/Clinton
OUTSIDE AGENCY ASSIST, 34 URGENT			
12/10/18	called to check the status of a male who sent alarming text messages		Park Hills Area
OUTSIDE AGENCY ASSIST, 38 URGENT			
12/5/18	Assist PTPD with 26 yom drug acting erratic / narcan administered		Patton Township
OUTSIDE AGENCY ASSIST, OTHER ROUTINE			
12/6/18	Assist CC Drug Task Force warrant service		unknown
PFA, RECEIVED			
12/27/18	Notice of hearing and order		Station Report
PFA, VIOLATION			
12/15/18	Caller said Ex was violating the PFA.		Aaron/Clinton
PROPERTY, FOUND			



Ferguson Township Report Activity

1/7/2019

For Incidents Reported 12/1/2018 12:00:01AM to 12/31/2018 11:59:59PM

<u>OCCURR DATE</u>	<u>PROPERTY, FOUND</u> (Continued)	<u>Reporting Area</u>
12/28/18	Found duffle bag - returned to owner	Shingletown
12/28/18	Complainant found a wallet which was returned to owner	StoneBridge/Coral Acres/Good f
	PROPERTY, LOST OR STOLEN	
12/21/18	Lost passport	Aaron/Clinton
12/14/18	Caller believed she lost a credit card in an Uber	Overlook Heights
12/14/18	lost documents and Amazon box	Park Hills Area
	PUBLIC INTOXICATION, WITH SUSPECT	
12/29/18	27 yom - public drunkenness	Pheasant Glen
	REQUEST FOR ASSISTANCE, CIVIL DISPUTE EARLIER	
12/16/18	Civil dispute over payment for a vehicle	StoneBridge/Coral Acres/Good f
12/3/18	Caller and roommate had a dispute over burn mark in the kitchen.	Aaron/Clinton
12/12/18	Civil dispute with a contractor.	Greenbriar/Chestnut Ridge Area
12/5/18	Rommate dispute over smell of cooked food late a night.	Aaron/Clinton
	REQUEST FOR ASSISTANCE, CIVIL DISPUTE NOW	
12/12/18	Verbal argument with an Uber driver	Glenview/Haymarket
12/26/18	Dispute over daughter being in deceased mother's residence	StoneBridge/Coral Acres/Good f
12/28/18	Complaint over determining why a vehicle was towed.	StoneBridge/Coral Acres/Good f
	REQUEST FOR ASSISTANCE, LOCATE OR CONTACT	
12/15/18	Could not contact male who overslept.	SC Park Apts.
12/4/18	Caller has not heard from his friend and was concerned.	StoneBridge/Coral Acres/Good f
12/9/18	Caller requested an attempt to locate male, no longer resides at address.	Park Hills Area
12/4/18	Sutdent concerned for the welfare of a friend.	Aaron/Clinton
	REQUEST FOR ASSISTANCE, OTHER	
12/2/18	Subject requested information on PFA.	SC Park Apts.
12/9/18	Complainant thought she heard a laugh she recognized	Aaron/Clinton
12/12/18	Caller asked an officer to respond and remove 66 yom with MHID issues	Pine Grove Mills
12/1/18	Caller is requesting help in completeing a claim form.	Pheasant Glen
12/7/18	Two dogs left in house, caller does not see anyone taking care of them.	Science Park/Pine Hall Dr
12/9/18	Male burning leaves	Fairbrook/Ramblewood/PA Furnc
12/11/18	Report of two children being hit by mother's paramour	Sylvan View
12/17/18	Duplicate case created.	Station Report
12/25/18	Complainant received unusual items on door step	StoneBridge/Coral Acres/Good f
	RETAIL THEFT, EARLIER	
12/2/18	Individuals stole electronics from retail store	Aaron/Clinton
	ROBBERY, EARLIER	
12/31/18	2 unknown males robbed complainant/assault	Aaron/Clinton
	SUSPICIOUS ACTIVITY, OTHER	
12/30/18	Caller noticed car lights left on	unknown
12/31/18	Neighbor noticed a change in the pattern with a neighbor was was concerned.	Pine Grove Mills
12/24/18	Caller heard two loud bangs like large firecrackers.	Science Park Rd/Gatesburg Rd A
12/12/18	2 juveniles 1 adult in vehicle with odor of alcohol	StoneBridge/Coral Acres/Good f
12/18/18	Unknown person making noise	Overlook Heights
12/16/18	Unknown person attempting at acess caller Apple ID.	Pheasant Glen
12/3/18	suspicious call asking for \$1000.00	StoneBridge/Coral Acres/Good f
12/26/18	Male taking pitcures of homes off of Meadowview dr.	Pine Grove Mills
12/10/18	Unsecure property	StoneBridge/Coral Acres/Good f
12/1/18	Individual thinks her phone is being hacked into	Aaron/Clinton
12/1/18	Male left a note on his bill.	Blue Golf Course



Ferguson Township Report Activity

1/7/2019

For Incidents Reported 12/1/2018 12:00:01AM to 12/31/2018 11:59:59PM

<u>OCCURR DATE</u>	<u>SUSPICIOUS ACTIVITY, OTHER</u>	<u>Reporting Area</u>
	(Continued)	
12/3/18	Suspicious faxes received	Sylvan View
12/1/18	Scam Call - individual from overseas hacked into caller's computer	Greenbriar/Chestnut Ridge Area
12/4/18	Unknown vehicle in callers drieveway	Fairbrook/Ramblewood/PA Furnc
12/13/18	email scam involving bomb threat and bit coin	Glenview/Haymarket
12/15/18	Comp. thought someone had been inside her apartment.	unknown
12/16/18	Person received robo message saying the Social Security Admin was ending his number. SCAM	Whitehall/Nixon/Plainfield
12/20/18	Neighbor has not seen elderly neighbor in a few days and garage door is open.	Glenview/Haymarket
12/15/18	Suspicious Activity	Glenview/Haymarket
12/10/18	Two older white males in gold older Chevey Tahoe looking in mail boxes.	Science Park Rd/Gatesburg Rd A
12/11/18	tan SUV driving by and looking in house windows	Science Park/Pine Hall Dr
	SUSPICIOUS ACTIVITY, PACKAGE(S)	
12/3/18	USPS postmaster placed scan tool in resident's mailbox	Fairbrook/Ramblewood/PA Furnc
12/26/18	Sheriff found a yellow balloon with fine white powder in it.	Aaron/Clinton
	SUSPICIOUS ACTIVITY, PERSON(S) - EARLIER	
12/27/18	Male knocked on woman's window offering popcorn	Overlook Heights
12/1/18	delivery driver was chased by a male	Park Hills Area
12/10/18	Suspicious Persons, Possible Retail Theft	Overlook Heights
12/21/18	Complainant saw an individual driving near residence that was not welcome there	Park Hills Area
	SUSPICIOUS ACTIVITY, PERSON(S)-NOW	
12/22/18	Male writing down license numbers in lot	Overlook Heights
12/16/18	Someone knocking on doors in the complex.	Park Hills Area
12/9/18	81 yom receiving blackmail phone calls	Glenview/Haymarket
12/13/18	Unknown female was at Comp. door.	StoneBridge/Coral Acres/Good F
12/29/18	Man walking on the roadway	Blue Golf Course
12/17/18	Caller heard someone trying to open her back door.	Aaron/Clinton
	SUSPICIOUS ACTIVITY, VEHICLE(S) - EARLIER	
12/24/18	suspicious vehicle driving in the parking lot	Science Park Rd/Gatesburg Rd A
	SUSPICIOUS ACTIVITY, VEHICLE(S) - NOW	
12/17/18	suspicious vehicle parked on the street	Park Hills Area
12/4/18	Vehicle parked along private lane	Whitehall/Nixon/Plainfield
	TERRORISTIC THREATS, EARLIER	
12/17/18	4th grader made bomb threat on bus	Glenview/Haymarket
	THEFT, EARLIER	
12/4/18	Theft of coin box from washing machine	Aaron/Clinton
12/6/18	Caller's PayPal account was used to purchase and pickup computer.	Aaron/Clinton
12/13/18	Employee theft of money	Overlook Heights
12/28/18	Walk up complaint of a package theft.	Aaron/Clinton
	THEFT, FROM VEHICLE	
12/10/18	Theft of a food mixer from a vehicle	Northland Bowl Complex
	TRAFFIC STOP	
12/31/18	Suspended Reg - Insurance Cancellation	Overlook Heights
	TRAFFIC, HAZARDS (ICE / SNOW / DEBRIS)	
12/16/18	Tree on wires	Pine Grove Mills
	TRAFFIC, RECKLESS OPERATIONS - EARLIER	
12/1/18	SCPD received report of reckless operation in AM and same car reported to FTPD in afternoon.	Station Report



Ferguson Township Report Activity

1/7/2019

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<u>OCCURR DATE</u>		<u>Reporting Area</u>
	TRAFFIC, RECKLESS OPERATIONS - NOW	
12/31/18	Caller reported the vehicle he was following was all over the roadway	Aaron/Clinton
	TRESPASS, EARLIER	
12/15/18	someone entered the complainants apartment	Aaron/Clinton
	TRESPASS, NOW	
12/14/18	Ex boyfriend refused to leave caller's apartment when asked to	Park Crest Terrace Apts.
12/15/18	Resident woke to find unknown male in her room	Aaron/Clinton
	UNSECURED PROPERTY	
12/21/18	Perimeter fence open	Glenview/Haymarket
12/8/18	Front door of unoccupied residence open	StoneBridge/Coral Acres/Good f
	VACATION HOME CHECK	
12/3/18	Vacation home check	Greenbriar/Chestnut Ridge Area
12/21/18	Vacation home check requested	Greenbriar/Chestnut Ridge Area
12/21/18	Vacation home check	StoneBridge/Coral Acres/Good f
12/11/18	Vacation home check	StoneBridge/Coral Acres/Good f
12/7/18	VACATION HOME CHECK	Greenbriar/Chestnut Ridge Area
12/4/18	Vacation home check	StoneBridge/Coral Acres/Good f
12/17/18	Vacation home check requested	StoneBridge/Coral Acres/Good f
12/15/18	Vacation home check request.	StoneBridge/Coral Acres/Good f
12/18/18	Vacation home check	Greenbriar/Chestnut Ridge Area
	VEHICLE CRASH - POLICE, EARLIER	
12/29/18	2 Car non reportable crash	Aaron/Clinton
12/31/18	Deer struck. Dispatched.	Pine Grove Mills
12/5/18	Minor one vehicle crash	Aaron/Clinton
	VEHICLE CRASH - POLICE, HIT AND RUN	
12/5/18	Report of a vehicle crash that occurred earlier	Park Crest Terrace Apts.
12/21/18	Hit & Run Crash	Glenview/Haymarket
12/30/18	vehicle struck a parked car and departed the area without leaving information	Glenview/Haymarket
12/13/18	Car struck yesterday	Park Hills Area
	VEHICLE CRASH - POLICE, NO INJURIES	
12/26/18	Vehicle crash - no injuries	unknown
12/15/18	Two vehicle reportable DUI crash.	Fairbrook/Ramblewood/PA Furnc
12/29/18	1 vehicle crash/ with DUI arrest	Aaron/Clinton
12/28/18	2 vehicle crash/no injuries/1 tow	Aaron/Clinton
12/27/18	Two vehicle crash. No injuries. Reportable.	Aaron/Clinton
12/23/18	Single vehicle reportable crash	Pine Grove Mills
12/19/18	Vehicle crash between bike and vehicle.	Overlook Heights
12/12/18	Two vehicle crash with no injuries, disabling damage. Reportable crash.	Glenview/Haymarket
12/14/18	SCASD Bus VS car accident, no injuries or children involved.	Aaron/Clinton
12/2/18	One vehicle crash - no injuries	unknown
12/3/18	2 vehicle crash no injuries	Science Park/Pine Hall Dr
12/3/18	Two vehicle crash with no injuries or disabling damage	Aaron/Clinton
12/6/18	Two car non reportable crash	Shingletown
12/3/18	Rear end accident	Pine Grove Mills
12/1/18	Side swipe same direction accident. Alleged road rage incident.	Glenview/Haymarket
12/11/18	Car v. Deer accident	Nixon Road/ Wheel Estate Acres
	VEHICLE CRASH - POLICE, WITH INJURIES	
12/20/18	Pedestrian struck by a vehicle. Reportable crash report to be completed.	SC Park Apts.
	WARRANT SERVICE	



Ferguson Township Report Activity

1/7/2019

For Incidents Reported 12/1/2018 12:00:01AM to 12/31/2018 11:59:59PM

OCCURR DATE

WARRANT SERVICE

(Continued)

Reporting Area

12/4/18 24 yom picked up on Centre County Bench Warrant
12/10/18 302 Warrant served

Patton Township
Park Hills Area