FERGUSON TOWNSHIP BOARD OF SUPERVISORS

Regular Meeting Agenda
Tuesday, November 1, 2022

7:00 PM

MEETING PARTICIPATION OPTIONS

VIRTUAL:

Join Zoom Meeting Link:
https://us02web.zoom.us/j/87031665680
Meeting ID: 870 3166 5680
Zoom Access Instructions

IN-PERSON:

Ferguson Township Municipal Building
Main Meeting Room
3147 Research Drive
State College, PA

I. CALL TO ORDER

II. PLEDGE OF ALLEGIANCE

III. CITIZENS INPUT

IV. APPROVAL OF MINUTES

V. AUTHORITIES, BOARDS, AND COMMISSION REPORTS

VI. SPECIAL REPORTS

VII. COG REGIONAL REPORTS

VIII. STAFF REPORTS

IX. UNFINISHED BUSINESS

1. Public Hearing – Amending Chapter 27, Zoning, Part 7, Supplemental Regulations, Section 710 Tower-Based Wireless Communications Facilities and Part 11, Section 1102

X. NEW BUSINESS

1. Consent Agenda
2. 2023 Centre Region Council of Governments Summary Budget
3. Salvation Baptist Church Preliminary LDP
4. Award contract 2018-C2OU, Park Hills Drainageway Utility Relocation
5. Award contract 2019-C21, Pine Grove Mills LED Street Light Conversion

XI. COMMUNICATIONS TO THE BOARD

XII. CALENDAR ITEMS

XIII. ADJOURNMENT

TOWNSHIP OF FERGUSON
3147 Research Drive • State College, Pennsylvania 16801
Telephone: 814-238-4651 • Fax: 814-954-7642
www.twp.ferguson.pa.us

BOARD OF SUPERVISORS
Regular Meeting Agenda
Tuesday, November 1, 2022
7:00 p.m.

I. CALL TO ORDER

II. PLEDGE OF ALLEGIANCE

III. CITIZEN'S INPUT 5 minutes per resident

IV. APPROVAL OF MINUTES

1. October 11, 2022, Board of Supervisors Worksession Minutes
2. October 18, 2022, Board of Supervisors Meeting Minutes

V. AUTHORITIES, BOARDS, AND COMMISSIONS REPORT 20 minutes

1. State College Borough Water Authority – Ford Stryker
2. Centre Region Parks and Recreation Authority – Bill Keough

VI. SPECIAL REPORTS AND ACKNOWLEDGEMENTS 20 minutes

1. Diversity, Equity, and Inclusionary Acknowledgements – *National Native American, American Indian, and Alaskan Native Heritage Month, Veterans Day, Thanksgiving*
2. Township and Fiscal Responsibility – *Millbrook Marsh and Boardwalk Presentation*
3. Community and Economic Development – no report
4. Environment – no report.

VII. COG AND REGIONAL COMMITTEE REPORTS 25 minutes

1. **COG COMMITTEE REPORT**
   a. Facilities Committee
   b. Executive Committee

2. **OTHER COMMITTEE REPORTS**

VIII. STAFF REPORTS

1. Township Manager's Report – no report.
2. Public Works Director Report
3. Planning and Zoning Report

IX. UNFINISHED BUSINESS

1. PUBLIC HEARING ON AN ORDINANCE OF THE TOWNSHIP OF FERGUSON, CENTRE COUNTY, PENNSYLVANIA, ESTABLISHING CHAPTER 21, STREETS AND SIDEWALKS; PART 6, NON-TOWER SMALL CELL WIRELESS COMMUNICATION FACILITIES IN THE RIGHT-OF-WAY, AND AMENDING CHAPTER 27, ZONING; PART 7, SUPPLEMENTAL REGULATIONS; SECTION 710, TOWER-BASED WIRELESS COMMUNICATIONS FACILITIES, AND PART 11, DEFINITIONS; SECTION 1102, DEFINITIONS. 10 minutes

Jenna Wargo, Director of Planning and Zoning

Narrative

The Small Wireless Facilities Deployment Act (Act 50) was signed into law on June 30, 2021 and was drafted in unison with the Pennsylvania Municipal League and telecommunications providers. The legislation provides for fair and equitable treatment of small wireless facilities and comprehensive protections for the municipality to ensure proper maintenance of public rights-of-way. At a Regular Meeting held on September 20, 2021, the Board of Supervisors authorized staff to prepare an amendment to the Wireless Communications Facilities Ordinance.

After further review by the Township Solicitor, staff has updated the draft amendments and included redlined drafts provided with the agenda for amendments to §27-710—Wireless Communications Facilities, §27-1102—Definitions and the establishment of Chapter 21, Streets and Sidewalks, Part 6, Non-Tower-Based or Small Wireless Communications Facilities in the Right-of-Way. The Board reviewed the drafts at their September 6, 2022 meeting and authorized the advertisement of a public hearing for November 1, 2022.

Planning Commission reviewed the draft amendments at the September 12, 2022, meeting and recommended approval to the Board of Supervisors. Provided with the agenda, is a copy of the ordinance as provided and reviewed by all local, regional and county reviewers and as advertised for public hearing. The document has been made available for inspection at the Township office.

Recommended Motion: That the Board of Supervisors adopt the ordinance establishing Chapter 21, Streets and Sidewalks, Part 6, Non-Tower-Based or Small Wireless Communications Facilities in the Right-of-Way, and amending Chapter 27, Zoning, Part 7, Supplemental Regulations, Section 710, Tower-Based Wireless Communication Facilities, and Part 11, Definitions, Section 1102 Definitions.

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

X. NEW BUSINESS

1. CONSENT AGENDA 5 minutes

a. Voucher Report – August 2022
b. Voucher Report – September 2022
c. Contract 2016-C11, Pay App 5: $46,123.93
d. Contract 2022-C8, Pay App 5: $6,085.85
e. Acceptance of letter from the Pine Grove Mills Small Area Plan Advisory Committee

2. 2023 CENTRE REGION COUNCIL OF GOVERNMENTS SUMMARY BUDGET

Centrice Martin, Township Manager 45 minutes

Narrative

At the October 24th COG General Forum Meeting, the draft 2023 COG Summary Budget was reviewed and referred to the member municipalities for consideration. Comments are due back to the COG Executive Director by November 17th. Eric Norenberg, COG Executive Director and Joe Viglione, COG Finance Director will be present to respond to any questions the Board may have. Below is a link to the 2023 Summary Budget. Attached with the agenda packet is the detailed budget municipal contributions analysis prepared by CRCOG Finance Committee.

2023 DRAFT Centre Region Council of Governments Summary Budget

2023 DRAFT Centre Region Council of Governments Detailed Budget

Recommended Motion: That the Board of Supervisors direct the Township Manager to forward its comments on the draft 2023 COG Summary Budget to the Executive Director.

Staff Recommendation
That the Board of Supervisors ***discuss*** the 2023 COG Summary Budget.

3. SALVATION BAPTIST CHURCH PRELIMINARY LAND DEVELOPMENT PLAN 10 minutes

Jenna Wargo, Director of Planning and Zoning

Narrative

Provided with the agenda is the Salvation Baptist Church Preliminary Land Development Plan, last revised on October 19, 2022. This land development plan is located at 3645 West College Avenue (TP: 24-004-078-0000). The parcel is approximately 60.61 acres and is zoned Rural Agricultural (RA) and Corridor Overlay (COD).

This land development plan proposed a fellowship hall and garage, totaling 13,626 SF. At the time of the original land development plan, a fellowship hall and garage were proposed adjacent to the church and was never constructed. Since it has been more than (5) years since the original land development plan was approved, a new plan is required.

Staff has reviewed the resubmission and is recommending conditional approval of the plan. Provided with the agenda is a memorandum from the Director of Planning & Zoning dated October 26, 2022, describing the conditions.

Recommended Motion: That the Board of Supervisors conditionally approve the Salvation Baptist Church Preliminary Land Development Plan subject to the conditions described in the Planning Director's memorandum dated October 26, 2022.

Staff Recommendation
That the Board of Supervisors ***conditionally approve*** the preliminary land development plan.

4. AWARD OF CONTRACT 2018-C20U, PARK HILLS DRAINAGEWAY UTILITY RELOCATION
David Modricker, Director of Public Works 10 minutes

Narrative
On October 11, 2022, bids were opened publicly and read aloud for contract 2022-C20U. The bid was advertised in the Centre Daily Times and was sent to potential bidders. The contract involves the installation of underground conduit by directional boring necessary to relocate power and communication facilities in advance of the Park Hills Drainageway Improvement Project. Provided with the agenda is a memorandum from Ron Seybert, Township Engineer, dated October 18, 2022, recommending award of the contract.

Recommend Motion: That the Board of Supervisors award Contract 2018-C20U, Park Hills Drainageway Utility Relocation, to RAVAN INC., dba Tru-Tek Drilling in accordance with their bid in the amount of $453,016.83.

Staff Recommendation
That the Board of Supervisors ***award*** the contract.

5. AWARD OF CONTRACT 2019-C21, PINE GROVE MILLS LED STREET LIGHT CONVERSION
David Modricker, Director of Public Works 10 minutes

Narrative
On October 25, 2022, bids were opened publicly and read aloud for contract 2019-C21. The bid was advertised in the Centre Daily Times and was sent to potential bidders. The contract involves rewiring existing ornamental lights in Pine Grove Mills and installing new power supplies and new power cutoffs to allow them to be serviced by FTPW. This work removes the lights from the WPP tariff and installs meters. High-pressure sodium lamps will be removed and the light fixtures retrofitted with 2700K LED lamps. Work includes the installation of underground conduit by directional boring. Provided with the agenda is a memorandum from Ron Seybert, Township Engineer, dated October 25, 2022, recommending award of the contract.

Recommend Motion: That the Board of Supervisors award Contract 2019-C21, Pine Grove Mills LED Street Light Conversion, to M&B Services, LLC, in accordance with their bid in the amount of $292,792.86.

Staff Recommendation
That the Board of Supervisors ***award*** the contract.

XI COMMUNICATIONS TO THE BOARD

XII CALENDAR ITEMS – November

a. Election Day, November 8
b. Fall 2022 Neighborhood Association Open Forum – November 9
c. Special Meeting on DRAFT 2023 Operating Budget, November 9
d. Special Meeting on DRAFT 2023 Operating Budget, November 10
e. Parks & Recreation Committee, November 10
f. Administrative Offices Closed in Observance of Veterans Day, November 11
g. Planning Commission - November 14

h. Pine Grove Mills SAP Advisory Committee - November 17
i. Tree Commission - November 21
j. Administrative Offices Closed in Observance of Thanksgiving, November 24

XIII. ADJOURNMENT

BOARD OF SUPERVISORS
Monthly Work Session Minutes
Tuesday, October 11, 2022
2:00 p.m.

ATTENDANCE

The Board of Supervisors held a worksession on Tuesday October 11, 2022. The meeting was in a hybrid format. In attendance were:

Board:	Laura Dininni, Chair	**Staff:**	Centrice Martin, Township Manager
	Lisa Strickland, Vice-Chair		Jaymes Progar, Assistant Manager
	Patty Stephens		Dave Modricker, Public Works Director
	Tierra Williams		Aaron Jolin, Stormwater Engineer
	Jeremie Thompson		

Others in attendance included: Mr. Dreibelbis

I. PRESENTATION UPDATE ON THE 2022 STORMWATER UTILITY FEE

Jaymes Progar, Assistant Township Manager, presented a PowerPoint overview of the Stormwater Utility Fee and infrastructure.

Why the fee? Unfunded mandated requirements at federal and state levels that include the NPDS (National Pollutant Discharge System) for a 5-year permit reported annually that the Township is required to do a number of BMP control measures to maintain that permit. As a result, we have an ordinance under Chapter 1, Part 14 to collect utility fees/programming costs for adequate stormwater management and the health, safety and welfare of residents.

The calculations are completed parcel-by-parcel of the impervious areas by ERUs (equivalent residential unit) within the Township limits of 3,097 square feet. Other factors include: (1) determining RBG (regional growth boundary); (2) the impervious area in square feet, which is used to divide by the Township's square feet of 3,097 to determine the ERUs assigned to a parcel and round that number down or up to a whole number depending on the calculation. The ERU is then multiplied by the rate established by the resolution (policy established in 2021) and approved by the Ferguson Township Board of Supervisors. The next step is to determine credits and/or exemptions for the parcel once approved. Different categories include single-family residents, commercial properties, and properties outside the RGB. Details followed on credits and how they are applied. The goal is to incentivize residents and give them a discount for having a positive impact on public infrastructure as well as reducing the cost of stormwater management overall to the Township. Mr. Progar noted that there are a number of things that residents, HOAs, or commercial properties with multiple businesses can do to apply for credits.

The breakdown of credits was Non-structural credits (1,100 awarded), i.e., disconnected downspouts, things that don't require a stormwater BMP vs Structural credits (460 awarded) that need to be put in place-being connected or stormwater managed by a structural BMP. A total of 13,055 parcels were awarded credits this past year in the Township, which accounts for 18% of all parcels receiving some type of credit. The total credits awarded were 1,592, which accounted for over 200 parcels that

received two or more credits. Three exemptions for financial hardship, i.e., could be a non-profit. The billing process and obstacles in the process were explained. It took some time to comb through 6,300 parcels to determine what was a non-profit business. Other considerations were that the RBA database does not send a bill to every taxed parcel and the database determines whether your tax (and stormwater) payment was on time or if there was a penalty for paying late bills. The Township is a template for other surrounding municipalities to go by so getting an accurate assessment among other things right the first time was a challenge.

Cost-saving measures, i.e., labor, equipment, materials. Still under review by staff are exemption application submissions for Ag properties' for the following year. Another item staff is looking at is whether the stormwater utility fees are under the same penalties as the tax parcels billed (by RBA).

The application period is from May 1 - September 30 of each year. Within a month following the closing date, the Township responds to the credit applications on whether approved, denied or if more information is needed. Appeals can be made until November 30 of the same year the application was submitted. Appeal decisions are completed no later than December 31 of the same calendar year.

Ms. Martin thanked those attending and available to answer questions including Aaron Jolin, Stormwater Engineer; Dave Modricker, Public Works Director; and Jaymes Progar, Assistant Township Manager, for preparing and presenting the presentation.

Mr. Modricker noted regarding one of the slides on cost, they are captured under Fund 20, which includes Road Crew time, Traiser software costs and contracted services.

Ms. Dininni turned the hosting of the meeting over to Ms. Strickland. Mr. Thompson had a question on credits. Discussion followed with engineering staff on credits, assessments, and structural BMPs. Ms. Strickland noted questions on the credit manual and that clarification is needed on interpretation and tracking. Engineering staff noted as they review the approved policy in the resolution, language can be brought forward for consideration as well as the impervious area guidance document that is still under review with the consultant. Discussion followed on qualifiable tracking. Ms. Strickland asked for clarification on HOAs separate billing and revenue. Mr. Modricker clarified the slides are a summary of costs and that some projects listed may not start until next year. Ms. Strickland asked if that information could be forwarded by email. Mr. Modricker continued a detailed review of line items. Ms. Strickland thanked the staff for the update.

II. Ms. Strickland noted that Item 2, *Discussion on the Second Allocation of the American Rescue Plan Act of 2021*, is tabled for another meeting discussion.

III. ADJOURNMENT

With no further business to come before the Board of Supervisors, Ms. Stephens motioned to ***adjourn*** the meeting. The meeting adjourned at approximately 2:45 p.m.

Respectfully submitted,

Centrice Martin, Township Manager
For the Board of Supervisors

FERGUSON TOWNSHIP BOARD OF SUPERVISORS
Regular Meeting
Tuesday, October 18, 2022

ATTENDANCE

The Board of Supervisors held its second regular meeting of the month on Tuesday, October 18, 2022 as a hybrid meeting. In attendance were:

Board:	Lisa Strickland, Vice Chair	**Staff:**	Centrice Martin, Township Manager
	Patti Stephens		Dave Modricker, Director, Public Works
	Jeremie Thompson		Jaymes Progar, Assistant Township Manager

Others in attendance included: Rhonda Demchak, Recording Secretary; Sue Werner, Schlow Centre Region Library; Shawn Kauffman, Emergency Management Coordinator, Centre Region Council of Governments; Greg Scott, Executive Director; Chamber of Business and Industry of Centre County; Diana Griffith, Agricultural Land Preservation Coordinator

I. CALL TO ORDER

Ms. Strickland called the Tuesday, October 18, 2022, regular meeting to order at 7:00 p.m.

II. PLEDGE OF ALLEGIANCE

Ms. Martin thanked and welcomed everyone to the meeting and noted that the Board of Supervisors meeting had been advertised in accordance with the PA Sunshine Act as a hybrid meeting with an option to attend online utilizing zoom and the main meeting room for any public members to participant. Persons attending the meeting as members of the public and wanted to participate were asked to state their name, municipality, and topic. Members of the public are to be muted during the meeting and must be acknowledged by the Chair. Board members are asked to indicate their name when motioning or seconding a motion so that the minutes are accurate. Ms. Martin took Roll Call and there was a quorum.

Ms. Strickland asked for a motion to amend the agenda to add an item.

Mr. Thompson moved that the Board of Supervisors ***add*** the letter of resignation submitted by Supervisor Williams to the agenda. Ms. Stephens seconded the motion. The motion passed unambiguously.

III. CITIZENS INPUT

IV. APPROVAL OF MINUTES

Mr. Thompson moved that the Board of Supervisors ***approve*** the regular meeting minutes of September 20, 2022, and October 3, 2022. Ms. Stephens seconded the motion. The motion passed unanimously.

V. AUTHORITIES, BOARDS, AND COMMISIONS REPORT

1. Schlow Centre Region Library
   Ms. Sue Werner, Schlow Centre Region Library, noted her report is included in the agenda packet.

   Ms. Stephens and Ms. Strickland thanked Ms. Werner for the report.

2. C-NET Report

   Mr. Jaymes Progar noted that his report is included in the agenda packet.

VI. SPECIAL REPORTS

1. Diversity, Equity, and Inclusionary Initiatives – Domestic Violence Awareness Month, Filipino-American Heritage Month, German-American Heritage Month, Italian-American Heritage Month, Polish-American Heritage Month

2. Township and Fiscal Responsibility – Emergency Management: Roles and Responsibilities

   Mr. Shawn Kauffman, Emergency Management Coordinator, Centre Region Council of Governments gave a presentation that was included in the agenda packet.

   Ms. Stephens suggested that each Board member take the special trainings that is required, and she will create a spreadsheet.

   Sergeant Hendricks thanked Mr. Kauffman for the information.

3. Community And Economic Development - Overview and Updates on the Chamber of Business and Industry of Centre County (CBICC)

   Mr. Greg Scott, Executive Director, CBICC reported that he completed his first full year as the Executive Director. Mr. Scott noted that he is getting to know chamber members, investors, government entities, elected officials, farmers, academics, entrepreneurs, and business owners. It is the mission of the chamber to be a voice for Centre County. The collaborative approach for economic development is partnering with the county and township officials to bring new business and investments to the region. Mr. Kauffman stated there are some challenges and noted the Pine Grove Mills Small Area Plan and the lack of specific incentives to attract new businesses.

   Mr. Scott reported there will be a new Economic Development Council that will be introduced in 2023. Mr. Scott asked for the Township to reconsider investing in the CCEDP in 2023.

   Community And Economic Development - Informational Overview on the Centre County's Purchase of Agriculture and Conservation Easement Program

   Ms. Diana Griffith, Agricultural Land Preservation Coordinator, presented a PowerPoint from the overview that was included in the agenda packet.

   Ms. Griffith reported that they value Ferguson Township's participation as one of the three Centre County municipalities helping to preserve farmland through the Municipal Partnership Program.

   Ms. Griffith will send the Board the presentation that she gave.

4. Environment – no report.

VII. COG AND REGIONAL COMMITTEE REPORTS

1. COG COMMITTEE REPORTS

All committee reports are included in the agenda packet.

a. Joint Facilities Committee and Centre Region Parks and Recreation

b. Climate Action Sustainability Committee

Mr. Thompson highlighted from his report the Regional Refuse and Recycling Customer Survey, Letters of Support for Community Solar and the Commercial Property Assessed Clean Energy education event. The next meeting will be held on November 14, 2022.

c. Public Safety Committee

Ms. Stephens highlighted from her report the Property Maintenance Codes and problems with TRASER.

d. Human Resources Committee

e. Joint Land Use and Community Infrastructure Committee and Centre Regional Planning Commission Meeting

f. Finance Committee Executive Committee

Ms. Strickland highlighted from her report the Budget Wrap-up Session.

2. OTHER COMMITTEE REPORTS

There were no other committee reports.

VIII. STAFF REPORTS

All reports were included in the agenda packet.

a. Township's Manger's Report

b. Public Works Director Report

Mr. Thompson asked if the street tree pruning will be done in the Teaberry neighborhood. Mr. Modricker reported that he thought it would be done in that area but will verify and get back to Mr. Thompson.

c. Planning and Zoning Report

d. Office in Charge Report

IX. UNFINISHED BUSINESS

1. Public Hearing – Agricultural Properties Partial Exemption Resolution

Mr. Modricker noted that provided with the agenda is the revised partial agricultural properties exemption policy for consideration by the Board. The revised policy requires property owners of agricultural properties to file a one-time application by September 30 that results in the Stormwater Engineer to conduct a review and a response no later than October 30 of the filing year. Partial agricultural exemptions awarded and applied to agricultural properties will renew annually subject to the property sustaining no changes. Property owners that received approval for the partial exemption do not need to file a new application for the exemption apply in future years.

Public Hearing – There we no comments and the hearing closed.

Ms. Stephens moved that the Board of Supervisors ***adopt*** the resolution to grant a partial exemption for eligible agricultural properties from the Ferguson Township Stormwater Management Utility Fee and Repealing Resolution 2021-26. Mr. Thompson seconded the motion.

ROLL CALL: MS. STRICKLAND – YES; MR. THOMPSON – YES; MS. STEPHENS- YES

The motion passed unanimously.

X. NEW BUSINESS

1. Consent Agenda

   a. Contract 2022-C8, Fall Long Lines, Round 2, Pay App 4: $29,217.31
   b. Harner 4-Lot Subdivision Surety Reduction No. 6 - $140,942.90
   c. Orchard View Subdivision Surety Reduction No. 5 - $373,365.55
   d. Sheetz at Harner Surety Reduction No. 5 - $50,364.28
   e. Letter of Match Commitment for DCNR Supplemental Grant Contract

   Mr. Thompson moved that the Board of Supervisors ***approve*** the Consent Agenda. Ms. Stephens seconded the motion. The motion passed unanimously.

2. Public Hearing – Winter Maintenance Agreement Resolution

   Mr. Modricker reported that Ferguson Township has performed winter maintenance for PennDOT on a section of Whitehall Road SR3018 from West College Avenue SR26 to Blue Course Drive. PennDOT approached the Township about performing winter maintenance on a section of SR26 from the Ferguson Township boundary with State College Borough to the intersection of Shingletown Road SR26/SR45. Ferguson Township Public Works winter operations crews travel this section of road to perform snow and ice removal on Township roads and is agreeable to performing this service.

   Mr. Thompson moved that the Board of Supervisors ***adopt*** the resolution. Ms. Stephens seconded the motion.

   ROLL CALL: MR. THOMPSON – YES; MS. STEPHENS- YES; MS. STRICKLAND – YES

   The motion passed unanimously.

3. Public Hearing – Agility Agreement Resolution

   Mr. Modricker stated that for approximately the last decade, the Township has entered into an Agility Agreement with PennDOT. The Agility Agreement allows the two parties to barter services and products. The specific work plan is prepared and agreed upon between the Township Road Superintendent and the PennDOT Centre County Maintenance Manager. Examples of services provided by the Township include mowing and street sweeping sections of SR26, SR45, and SR3018 in Ferguson Township. Examples of services provided by PennDOT include providing an Athey Loader to assist with roadside swale maintenance and delivering salt brine produced at the Bellefonte maintenance office for pre-wetting and anti-icing operations of the Township.

   Ms. Stephens moved that the Board of Supervisors ***adopt*** the resolution. Mr. Thompson seconded the motion.

   ROLL CALL: MS. STEPHENS- YES; MS. STRICKLAND – YES; MR. THOMPSON – YES

   The motion passed unanimously.

4. Informational Update on CRCOG 2023 Proposed Operating Budget

Ms. Martin reported that on Friday, September 23, 2022, the Centre Region Council of Governments (CRCOG) Finance Committee received the proposed 2023 Operating Budget. A link to the CRCOG proposed 2023 Budget is provided below. The proposed budget includes an increase of approximately 16 percent which results in approximately an 18 percent increase for Ferguson Township's contribution. Ferguson Township's increase from 2018 to 2019 was 4 percent; the increase from 2018 to 2020 was 10 percent, the increase from 2018 to 2021 was 14 percent; and the increase from 2021 to 2022 was 18 percent. Ferguson Township's increase from 2022 to the proposed 2022 Operating Budget is 18 percent. Provided with the agenda are copies of two memos (2 and 3) prepared by Centre Region Municipal Managers to the CRCOG Finance Committee.

2023 DRAFT Detailed Budget to Finance Committee

The Board is asked to consider providing additional guidance on the COG budget to the Township's representative on the Finance Committee.

5. Acceptance of Supervisor Tierra Williams Resignation Letter

Ms. Martin reported that the Township received the resignation letter from Ms. Williams with an effective date of November 4, 2022. Ms. Martin thanked Ms. Williams for her service.

Ms. Stephens moved that the Board of Supervisors ***accept*** Ms. Williams resignation letter. Mr. Thompson seconded the motion.

Ms. Stephens stated that she will be missed for her perspective and enthusiasm. Mr. Thompson wished Ms. Williams the best. Ms. Strickland thanked Ms. Williams for her time and service to the Board and wished her the best.

The motion passed unanimously.

XI. COMMUNICATIONS TO THE BOARD

Ms. Stephens reported that her neighbor had concerns about the stop sign at North Allen Street and Aaron Drive. There was also an incident with a dog attacking another dog and now the neighbors are concerned. Ms. Stephens was asked if Ferguson Township has a position with the hate group Proud Boys coming to Penn State. Ms. Martin reported that the Ferguson Township Police Department will provide support if needed during the event.

Mr. Thompson thanked Ms. Stephens about the dog situation she reported.

Ms. Strickland reported that she had a communication about the Homestead Park with a request to keep the space open so the residents can use the space for such activities as badminton, volleyball, etc. Ms. Strickland reported that the Coffee and Conversation this past weekend was well done and well attended.

XII. CALENDAR ITEMS – OCTOBER

a. Election Day, November 8
b. Special Meeting on DRAFT 2023 Operating Budget, November 9
c. Special Meeting on DRAFT 2023 Operating Budget, November 10
d. Administrative Offices Closed in Observance of Veterans Day, November 11
e. Planning Commission - October 24, November 14
f. Pine Grove Mills SAP Advisory Committee - October 27, November 17

g. Fall 2022 Neighborhood Association Open Forum – November 9
h. Parks & Recreation Committee, November 10
i. Tree Commission - November 21

Ms. Strickland reported there was an Executive Session on October 11th regarding a real estate acquisition.

XIII. ADJOURNMENT

With no further business to come before the Board of Supervisors, Ms. Stephens motioned to ***adjourn*** the meeting. The meeting adjourned at 8:17 p.m.

Respectfully submitted,

Centrice Martin, Township Manager
For the Board of Supervisors

Tierra D. Williams | 105 S. Corl Street State College, PA | 601.953.1260 | tdw@cacj.us

Ferguson Township
3147 Research Dr.
State College, PA 16801

To all whom will be affected,

Please accept this letter as notice of my resignation from my position as **Township Supervisor** for **Ferguson Township.**

First off, let me say how much I have enjoyed this opportunity and working alongside all of you. It has been an honor, and I have learned so much. There are many things I wish to say to each of you, unfortunately I do not have the words at this moment, but I plan to express my feelings and gratitude closer to my departure. This is very bittersweet for me as this decision has not been made lightly- but I know it is the best decision for myself and my family.

I would like to help with the transition of my duties so that the township continues to function smoothly after my departure. That being said, my **21-day** notice starts today, **OCT 15th** and will conclude on **NOV 5th**.

I will still attend the following meetings, etc:

- Tuesday, October 18th- Township Mtg
- Monday, October 24th- COG Mtg
- November 1st- Township Mtg

Again, it's been a pleasure to have served as your Supervisor for **Ferguson Township**. I wish you and your staff all the best and I look forward to working with you these last few weeks.

Sincerely,

Tierra D. Williams

Tierra D. Williams

SCBWA Report to Ferguson Township Supervisors
Date: November 1, 2022, meeting

1. Name of Representative: Ford Stryker

2. Reporting on: State College Borough Water Authority

3. Requires Supervisors comments/response: NO

4. Links to SCBWA agendas and minutes: See following website https://www.scbwa.org/board-meetings.

5. Copy of SCBWA October meeting agenda, see attached.

6. Brief overview of authority actions related to Ferguson Township:

   - Nothing new to report.

Attachment: October meeting agenda

State College Borough Water Authority

AGENDA

October 20, 2022 (THURSDAY) - 4:00 P.M.

ROLL CALL:

Jeffrey R. Kern	E. Emory Enscore	Gary W. Petersen
Rachel A. Brennan	Jason R. Grottini	Nathaniel Warner

ADDITIONS OR CORRECTIONS TO MINUTES: ***Pages 1 thru 3***

HEARING OF CITIZENS (*five-minute time limit per citizen*):

RATIFICATION OF PAYMENTS: ***Pages 4 thru 10***

BOARD RESERVE FUND REQUISITIONS FOR PAYMENT: ***Page 11 thru 12***

PENNVEST LOAN FUNDS DISTRIBUTION AUTHORIZATION: ***Pages 13 thru 14***

UNFINISHED BUSINESS:

NEW BUSINESS:

(1) Water Connection Applications ***Pages 15 thru 17***

(2) Consider Approving Water Main Extension ***Page 18***

STATE COLLEGE BOROUGH WATER AUTHORITY'S AGENDA, continued
October 20, 2022

COMMITTEE REPORTS:

(1) FINANCE - Jeffrey Kern
(2) FACILITIES, OPERATING and PLANNING - Jason Grottini
(3) APPEALS - Bernard Hoffnar
(4) PUBLIC RELATIONS –Jason Grottini
(5) SOURCE WATER PROTECTION - Gary Petersen
(6) HR EVALUATION - Emory Enscore
(7) MONTHLY REPORT -Executive Director

LIAISON REPORTS:

(1) Borough Staff - Brian Robbins
(2) Benner Township Water Authority Liaison -
(3) Centre Regional Planning Commission – Mark Boeckel
(4) College Township Water Authority - Richard Harris
(5) Ferguson Township Supervisors - Ford Stryker
(6) Halfmoon Township Supervisors –Ron Servello
(7) Harris Township Supervisors - Mike Smith
(8) Patton Township Supervisors - Patricia Monteith
(9) University Area Joint Authority -

CONSULTANT REPORTS:

(1) Solicitor - Robert Mix
(2) Engineer - Mark Glenn
(3) Treasurer/Financial Consultant - Dennis Hampton

EXECUTIVE SESSION

NEXT MEETING DATE

Thursday, November 17, 2022

MINUTES OF THE REGULAR MEETING OF THE
STATE COLLEGE BOROUGH WATER AUTHORITY
September 15, 2022

CALL TO ORDER
The meeting was called to order at 4:00 P.M., prevailing time, Thursday, September 15, 2022 with Chair Person Jeffrey Kern presiding.
Special note: This meeting was conducted as a hybrid meeting.

PRESENT
Board Members: Chair Person Jeffrey Kern, Rachel Brennan, Jason Grottini, Emory Enscore, Nathaniel Warner; Solicitor, Robert Mix; Treasurer, Dennis Hampton; Engineer, Mark Glenn; State College Borough Liaison, Brian Robbins; College Township Water Authority Liaison, Richard Harris; Ferguson Township Liaison, Ford Stryker; Harris Township Liaison, Mike Smith; Patton Township Liaison, Patricia Monteith; Executive Director, Brian Heiser; Assistant Executive Director, Katie McCaulley; Director of Finance, Denise Smith; Communications and Projects Coordinator, Julia Shaffer; C-Net.

Chairman Kern announced Bernard Hoffnar's resignation was accepted by State College Borough Council September 12, 2022. The Borough will look to fill the open seat in October.

Hoffnar joined later in the meeting virtually and attempted to make a motion on New Taps. Chairman Kern reminded him of the resignation and acceptance by the Borough. Hoffnar had to be removed from virtual participation to continue with conducting the meeting due to repeated misconduct and interruption.

APPROVAL OF MINUTES
It was moved by Grottini, seconded by Brennan that the minutes of the August 18, 2022 meeting be approved. Motion carried 4 – yay and Enscore abstained due to not being present at the meeting.

HEARING OF CITIZENS
No comments were presented.
Chairman Kern acknowledged the newspaper article that covered Harris Township Supervisors' opinions regarding the vote to remove fluoride.

RATIFICATION OF PAYMENTS
It was moved by Enscore, seconded by Warner that bill payments in the amount of $1,589,795.49 be ratified as presented. Motion carried unanimously.

APPROVAL OF BOARD FUND REQUISITIONS
It was moved by Grottini, seconded by Brennan that the Board Reserve Fund requisitions in the amount of $78,485.46 be approved as presented. Question posed was answered by Assistant Executive Director McCaulley. Motion carried unanimously.

APPROVAL OF PENNVEST LOAN FUND DISTRIBUTION
Executive Director Heiser reported the contractor officially submitted another request for contract time extension, final completion is now projected to be July 2023 with substantial completion in February 2023.

It was moved by Brennan, seconded by Enscore that the PennVest Loan Fund distributions in the amount of $66,062.47 be approved as presented. Motion carried unanimously.

WATER CONNECTION APPLICATIONS

Chairman Kern reported that there are three new water connection application for approval this month. The application is as follows:

Core State College Pugh LLC	240 Pugh Street	Borough	6"
Core State College Pugh LLC	239 Pugh Street (Fire)	Borough	8"
John Diercks	Lot 9, 154 Emma Court	Harris	1"

It was moved by Warner, seconded by Brennan that these connections be approved subject to the Authority's Rules & Regulations. Motion carried unanimously.

APRROVAL OF PENNVEST LOAN PAYMENT MONTHLY TRANSFER

Executive Director Heiser reported beginning October 1, 2022, the Authority will need to begin payments on the PennVest loan. This will occur the first of each month for the next twenty years. Years one through five the payment will be $118,147.89 each month, the payments thereafter will be $123,883.73. Staff is asking the Board to approve the amount to be automatically transferred from Board Reserve Fund to the PennVest Account prior to the first of the month for the payment.

It was moved by Enscore, seconded by Grottini to proceed with automatic transfers for the PennVest payments. Motion carried unanimously.

COMMITTEE REPORTS

Finance Committee – No report.
Facilities, Operations and Planning Committee – Grottini reported the Solar Power Purchasing group released the RFP and is due by October 19.
Appeals – No report.
Public Relations – No report.
Source Water Protection – No report.
HR Evaluation – No report.
Fluoride (AD HOC) – This committee has been disbanded.

EXECUTIVE DIRECTOR'S REPORT

DISTRIBUTION- Crews have been repairing valves along Main Street in Boalsburg, they've found bolts are starting to break and bonnets are coming off of valves causing leaks. In an effort to be proactive, they're digging up the valves and replacing the bolts with stainless steel bolts. Crews have painted 135, and rebuilt 51 hydrants. The Centre Region Code Administration Director called in regards to the main break on North Atherton St. last month and shared that he was very impressed with the professionalism and great attitude the crews displayed on site.
PRODUCTION- DEP will be on site later this month to complete a system wide facility inspection. Lead and copper results have been received and all were below the action level for lead.
METER SHOP- Crews have updated 660 meters this year. Since the start of the project, 6,005 meters have been upgraded and converted to the FlexNet system.
BILLING AND CUSTOMER SERVICE- Muni Link made a presentation to the customer accounts department on planned updates to the billing system. Staff will be testing some of these upgrades. There are currently 1,692 customers receiving e-bills and 2,379 customers utilizing ACH to pay their bills. Several comments have been passed along by the customer service reps from customers thanking the Authority for the excellent service that they themselves as well as Meter Shop provide when going in and out of houses and businesses to make the updates.
ADMINISTRATION- Interviews for two positions in the Production Department will begin soon. The Authority participated in Lion Bash last week, during this event and the last two events at Medlar Field, staff fielded a few questions and comments about fluoridation, majority of the comments were in support of stopping fluoridation. Throughout all public relations events that staff have attended this season, they

have received a lot of positive feedback about what the organization does, the quality of water that is provided and the reliable service they receive. Public notice for the submittal of the permit application, stopping fluoridation will be posted on C-Net for a week beginning September 13 and again at the beginning the week of October 11. It will also be published in the CDT this month as well as in October.
MAJOR PROJECTS- Kennard Road, crews have completed the installation of two service lines. Continuing with the planning and anticipated completion in 2023. Calder Alley, staff has reviewed the preliminary plans, and returned comments to GD&F. Once updated with the changes, staff feels it is at pre final design stage for the water line.
NIXON KOCHER: There has been 700,000 gallons of water pumped from Kocher's into the plant for testing purposes. All of the pumps in the plant with the exception of the finished water pumps, have gone through the startup process. The process of installing the membrane modules started on Tuesday.

LIASON'S REPORT
State College Borough Staff Liaison – No report.
Benner Township Water Authority Liaison– Not present.
Centre Regional Planning Commission- Not present.
College Township Water Authority Liaison – No report.
Ferguson Township Liaison – No report.
Halfmoon Township – Not present.
Harris Township Liaison – No report
Patton Township Water Authority Liaison – No report.
University Area Joint Authority Liaison – Not present.

CONSULTANTS REPORT
Solicitor – No report.
Engineer – Mr. Glenn reported the draft DEP permit application copy has been provided to staff for submission next month.
Treasurer –Mr. Hampton reported work has started on the 2023 budget.

ADJOURNMENT
At 4:25 p.m., it was moved by Grottini, seconded by Brennan that the meeting be adjourned. Motion carried.

STATE COLLEGE BOROUGH WATER AUTHORITY
RATIFICATION OF PAYMENTS October 20, 2022

NO.	PAYEE	FOR	AMOUNT
1	Petty Cash Fund	CDL Reimbursement, Dual Battery Charge & Phone Stipend	$ 258.43
2	Ace Hardware of State College	Materials for Kennard Road	$ 82.60
3	American Water Works Association	Membership Renewal	$ 496.00
4	Bastian Tire & Auto Centers	PA State Inspection/Tire Purchase for Truck #148 & Tire for T-6	$ 353.50
5	Bi-Lo Supply	Materials for Kennard Road	$ 19.02
6	Fred Carson Disposal Inc.	Waste Service, Recycling and Cardboard Removal	$ 260.82
7	McClatchy Company LLC	Legal Advertisement	$ 172.80
8	Clark Auto Equipment	Oil Filter for Truck #139/ Motor Oil & Filter for Truck #147	$ 1,015.62
9	Collegiate Pride Inc.	Uniforms	$ 1,154.62
10	Comcast Cable	Digital Voice & High Speed Internet	$ 825.97
11	Desert Diamond Industries LLC	Saw Blades	$ 841.00
12	EBY Paving	Asphalt	$ 837.72
13	Eurofins Lancaster Environmental Labs	PFAS Samples	$ 252.50
14	Cailon Frank	Customer Reimbursement	$ 28.65
15	Groundwater Sciences Corporation	2022 Water Level Monitoring	$ 1,300.00
16	Gwin Dobson & Foreman Inc.	Monthly Retainer Fee	$ 1,100.00
17	Happy Valley Barbecue	Annual Employee Picnic	$ 1,315.00
18	Joseph C Hazel Inc.	HVAC Repair	$ 801.47
TOTAL- Page 1			**$ 11,115.72**

STATE COLLEGE BOROUGH WATER AUTHORITY PAYMENTS, continued
October 20, 2022

NO.	PAYEE	FOR	AMOUNT
19	Jabco Services	August Mowing Pump Stations, Tanks and Well Field	$ 4,485.00
20	LB Water Service Inc.	Piping Fittings, Gate Valves, Adaptor Kits, SS Bolts & Nuts, Fire Hydrants & Curb Box Top Risers	$ 21,628.90
21	Lowe's Home Centers	Hydrant Paint & Brushes, Locate Paint, Saw Blades, Torch Kit, Air Compressor & Cable Ties	$ 640.58
22	Nittany Supply, Inc.	Diesel Exhaust Fluid	$ 269.00
23	Nittany Office Equipment	Copier Service Agreement 8/27/2022-8/27/2023	$ 215.00
24	Pennsylvania One Call System Inc.	Monthly Activity Fee	$ 862.48
25	RBA Professional Data Systems Inc.	September 2022 Monthly Subscription	$ 620.60
26	Chase Rosendale	Customer Reimbursement	$ 64.60
27	Smith's Janitorial	Office Cleaning	$ 1,375.00
28	Stoicheff's Automotive Supermarket	Gas Strut, Fuel Hose & O-Ring for Truck #146	$ 52.85
29	Susquehanna Fire Equipment Co.	Annual Fire Extinguisher Maintenance	$ 913.05
30	Tractor Supply Credit Plan	Heavy Duty Cleaning Towels	$ 79.95
31	Univar USA Inc.	Chlorine & Water Treatment Chemicals	$ 3,893.41
32	Valley Truck & Trailer Sales & Service	PA State Inspection for Truck #135/PA State Inspection, Tire Purchase & Brake Pads for Truck #131	$ 1,767.47
33	Valvoline Instant Oil Changes	Oil Changes for Truck #133,#135, #146 & #402	$ 397.67
34	Verizon Wireless	Cell Phone & USB Remote Access	$ 1,408.04
35	Capital One	Office Supplies	$ 69.96
36	Abstract Closing Services	Customer Reimbursement	$ 76.20
		TOTAL- Page 2	**$ 38,819.76**

STATE COLLEGE BOROUGH WATER AUTHORITY PAYMENTS, continued
October 20, 2022

NO.	PAYEE	FOR	AMOUNT
37	Ace Hardware of State College	Hydrant Paint, Shovel, Sealant & Drill Bit	$ 711.40
38	Alko Distributors	Uniforms	$ 667.00
39	Ameron Construction Co. Inc.	Top Soil	$ 316.00
40	Bastian Tire & Auto Centers	Tire Purchase & Installation for Truck #146	$ 1,021.28
41	State College Borough, PA	Fuel Charges for August	$ 8,223.40
42	Roy Brooks Welding, Inc.	Fabricate Vault Handles	$ 70.00
43	Burgmeier's Shredding	Commercial Shredding	$ 78.75
44	Clark Auto Equipment	Brake Pads for Truck #146, Fuel, Lube Oil, Hydraulic & Air Filters for Truck #147	$ 853.00
45	Comcast Cable	Digital Voice & High Speed Internet	$ 714.42
46	EBY Paving	Asphalt	$ 331.82
****47****	**Board Reserve Fund**	**Receipts September**	**$ 418,241.01**
48	**State College Sewer Authority**	**Sewer Rentals for September**	**$ 402,249.08**
49	PAYROLL- SALARY & HOURLY	September 1-15, 2022	$ 78,164.11
50	PAYROLL LIABILITIES	Payroll Liabilities	$ 40,325.33
51	Fisher Scientific	Filters	$ 178.00
52	Geisinger Quality Options Inc.	Health Insurance Premium	$ 43,205.16
53	Guardian-Bethlehem	STD, Dental, Vision & Life Insurance	$ 8,574.60
54	Hire Right, LLC	Background Screening Services Subscription	$ 273.75
	TOTAL- Page 3		**$ 1,004,198.11**

STATE COLLEGE BOROUGH WATER AUTHORITY PAYMENTS, continued
October 20, 2022

NO.	PAYEE	FOR	AMOUNT
55	Home Depot Credit Services	Hydrant Paint	$ 292.90
56	LB Water Service Inc.	Mega Flange's, Curb Box Risers & Lids, Pipe Fittings	$ 2,413.98
57	Link Computer Corporation	October 2022 Billing & Web Presence	$ 4,645.22
58	Nittany Settlement	Customer Reimbursement	$ 17.72
59	Northern Safety Company Inc.	Uniforms	$ 183.28
60	PA DEP	Nixon Storage Tank Registration/Permit	$ 162.51
61	United States Postal Service	Postage	$ 3,000.00
62	Quill Corporation	Ink Cartridges and Office Supplies	$ 7,354.29
63	State College Battery Outlet	Battery Purchase for Target Saw & Air Compressor	$ 239.90
64	The Sign Stop	Engraved Name Plate	$ 25.00
65	Staples Credit Plan	Label Maker & Ink Cartridge	$ 270.26
66	Stoicheff's Automotive Supermarket	Parts & Repaired All Purpose Saw on Truck #146 & ST Trimer Parts	$ 167.95
67	Sunbelt Rentals, Inc.	Manlift Rental for Tanks	$ 349.50
68	Univar USA Inc.	Chlorine & Water Treatment Chemicals	$ 8,843.45
69	Valley Truck & Trailer Sales & Service	PA State Inspection for Truck #402	$ 63.00
70	Verizon Wireless	Cell Phone & USB Remote Access	$ 1,919.69
71	SCBWA-Health Reimbursement Acct	Reimbursement HRA Account	$ 777.73
72	Adobe	Software	$ 15.89
TOTAL- Page 4			**$ 30,742.27**

STATE COLLEGE BOROUGH WATER AUTHORITY PAYMENTS, continued
October 20, 2022

NO.	PAYEE	FOR	AMOUNT
73	Best Line Equipment	Traffic Cones & Fixed Pressure Sensor for Air Compressor	$ 1,059.27
74	CPI	CDL Education (2)	$ 1,976.00
75	Fairway Laboratories	SDWA Water Analysis	$ 2,030.00
76	PAYROLL- SALARY & HOURLY	September 16-30, 2022	$ 78,485.52
77	PAYROLL LIABILITIES	Payroll Liabilities	$ 40,607.33
78	FNB	Banking Fee's	$ 3,487.51
79	Giant	Service Award's	$ 405.95
80	HACH Company	Laboratory Reagents	$ 1,190.48
81	Lehigh Hanson	Stone	$ 345.64
82	PA Rural Water Association	Training Registration (2)	$ 270.00
83	Paymentus	Transaction Fees for September	$ 3,532.50
84	Pitney Bowes	Postage Machine Lease	$ 922.02
85	PSU Extension	Brochures	$ 214.89
86	Raising Cane & Sheetz	Lion Bash Meals	$ 33.57
87	Sam's Club	Office Supplies	$ 322.93
88	State College Ford	Hood Shocks for Truck #130	$ 52.80
89	UPS	Postage	$ 18.57
		TOTAL- Page 5	**$ 134,954.98**

BOARD RESERVE FUND REQUISITIONS
To Be Approved at the October 20, 2022 Board Meeting

REQUISTION NO.	PAYEE	DESCRIPTION	AMOUNT TO BE PAID
BRF - 2215	Best Line Equipment	Equipment Rentals for Pump Station 1	$ 200.00
BRF - 2216	Centre County Recycling & Refuse Authority	Recycling Pump Station 1 Materials	$ 65.80
BRF - 2217	EBY Paving & Construction, Inc.	Materials for Kennard Rd Phase 1	$ 782.60
BRF - 2218	Gannett Fleming	GIS Implementation	$ 1,042.20
BRF - 2219	Gwin Dobson & Foreman	Engineering Service for Waterline Replacement Kennard Road	$ 560.95
BRF - 2220	Lehigh Hanson	Materials for Kennard Road	$ 170.08
BRF - 2221	LB Water	Materials for Nixon/Kocher $1,668.00 / Kennard Road $512.26 / Meters $54,766.25	$ 56,946.51
BRF - 2222	PennTerra Engineering Inc.	Equipment Building Planning	$ 2,755.00
BRF - 2223	RBA	Nixon / Kocher Site work $213.75 / (2) Computers $2,320.99	$ 2,534.74
BRF - 2224	USA BlueBook	Nixon / Kocher Treatment Plant Materials	$ 2,868.10
TOTAL AMOUNT OF BOARD RESERVE FUND REQUISITIONS TO BE APPROVED			**$ 67,925.98**

State College Borough Water Authority

1201 West Branch Road
State College, PA 16801-7697

www.scbwa.org

Telephone: 814-238-6766
FAX: 814-238-2175

To: State College Borough Water Authority Board Members

From: Brian Heiser

Date: October 12, 2022

Re: 2022 Board Reserve Budget

The 2022 Board Reserve Budget is underbudget primarily due to the Calder Alley project being pushed back until 2023. There have been several unplanned small water line projects completed however we remain underbudget. Planning is currently underway for the 2023 Board Reserve Budget. One of the items to be requested is a trailer mounted hydro-excavator. This piece of equipment has many advantages over traditional excavation equipment. It is a less invasive means of excavation which will improve worker safety when certain situations are encountered. Additionally, there are typically less restoration costs involved with hydro-excavation. The Authority has an opportunity to demo and potentially take delivery of a hydro-excavator prior to the end of 2022. The price is $131,000 and would be purchased through the Pennsylvania CoStars program.

Management is recommending that the Board approve the purchase and use surplus 2022 Board Reserve Budget funds to pay for this piece of equipment.

PENNVEST LOAN DISBURSEMENTS

To Be Authorized at the October 20, 2022 Board Meeting

REQUISTION NO.	PAYEE	DESCRIPTION	AMOUNT TO BE DISBURSED
PV-00 90	Gwin Dobson & Foreman	Nixon / Kocher Treatment Plant	$ 27,338.43
PV-00 91	Lobar Inc.	Pay Application 29 (Electrical)	$ 9,574.11
PV-00 92	Lobar Inc.	Pay Application 31 (General)	$ 50,195.48
TOTAL AMOUNT OF PENNVEST DISBURSEMENT			**$ 87,108.02**

GD&F
GWIN
DOBSON &
FOREMAN
ENGINEERS

September 29, 2022

State College Borough Water Authority
1201 West Branch Road
State College, PA 16801

Attn: Brian C. Heiser, Executive Director

RE: State College Borough Water Authority
Nixon-Kocher Water Treatment Facility
Contractor Application for Payment Recommendation
PENNVEST Request No. 31

Dear Brian:

Please see attached Lobar Inc.'s Application for Payment No. 31 (Contract No. 10-2019: General-Mechanical Work) and Lobar Inc.'s Application for Payment No. 29 (Contract No.11-2019: Electrical Work) for the above referenced project. The Application for Payment's have been reviewed and approved by GD&F.

We recommend payment to Lobar Inc. for Contract No. 10-2019: General-Mechanical Work in the amount of $50,195.48 and for Contract No. 11-2019: Electrical Work in the amount of $9,574.11.

Please sign and date the Applications, keep three (3) copies for your files and return three (3) fully executed copies to our office. According to the Contract Documents, the Authority has 30 days to make payment to Lobar upon receipt of Engineer's recommendation.

Should you have any questions, please do not hesitate to contact our office at your convenience.

Respectfully submitted,
GWIN, DOBSON & FOREMAN, INC.

David Pedersen, P.E.
Senior Environmental Engineer

Enclosures
DEP/mad
18071/Ltr/SCBWA_PayAppNo.31_9-29-22.doc
cc: File

3121 FAIRWAY DRIVE ALTOONA, PA 16602 814.943.5214 FAX 814.943.8494 WWW.GDFENGINEERS.COM

STATE COLLEGE BOROUGH WATER AUTHORITY
NEW CONNECTIONS TO BE APPROVED AT THE October 20, 2022 BOARD MEETING

SERVICE ORDER NO.	APPLICANT	SERVICE ADDRESS	MUNICIPALITY	CONNECTION SIZE
12285L	Armen Sahakian	Lot 130, 121 Bradford Court	Ferguson	1"
12286L	Armen Sahakian	Lot 137, 141 Crescent Court	Ferguson	1"
12288L	BTJM Orchard View LLC	Lot 21, 173 Apple View Drive	Ferguson	1"
12289L	BTJM Orchard View LLC	Lot 19, 178 Apple View Drive	Ferguson	1"
12290L	BTJM Orchard View LLC	Lot 23, 169 Apple View Drive	Ferguson	1"
12291L	Pinnacle Development	Lot 223, 244 Beaumanor Road	Patton	1"
12292L	Centre Build LLC	109 Kaywood Drive	Harris	1"

TOTAL NUMBER OF TAPS GRANTED - 7

2022 SUMMARY OF NEW CONNECTIONS

CONNECTIONS BY MUNICIPALITY	
January 01, 2022 thru August 31, 2022	
Borough of State College	**2**
Benner Township	**0**
College Township	**1**
Ferguson Township	**6**
Harris Township	**10**
Patton Township	**24**
September 01, 2022 thru September 30, 2022	
Borough of State College	**0**
Benner Township	**0**
College Township	**0**
Ferguson Township	**5**
Harris Township	**1**
Patton Township	**1**
NEW CONNECTIONS FOR 2022	**50**

Connections:

- Connections approved for **September - 7**
- Total number of connections installed thru **September - 50**
- SCBWA total ACTIVE connections to date: **14,856**

SUMMARY OF ESTIMATED MAXIMUM DEMAND ADDED IN 2022

January 1, 2022 thru August 31, 2022	**GPD**
39 Residential Units @ 150 GPD	5,850
1 Commercial Unit @ 1,082 GPD	1,082
1 Shopping Center @ 700 GPD	700
1 Commercial Units @ 150 GPD	150
1 Commercial Unit @ 7,215 GPD	7,215
September 01, 2022 thru September 30, 2022	**GPD**
7 Residential Unit @ 150 GPD	1,050
TOTAL ESTIMATED MAXIMUM DEMAND FOR 2022	**16,047**

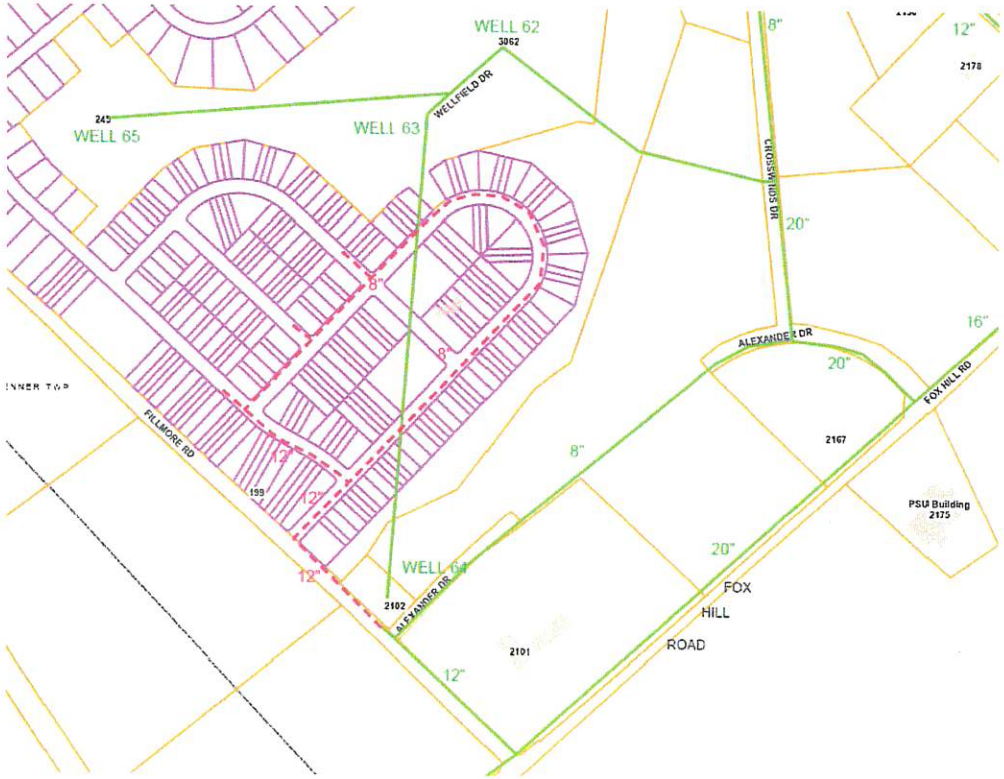
SUMMARY OF AVAILABLE SUPPLY

(System-wide 8 MGD, 30 day average withdrawal limit
Established by SRBC decision dated 03/15/19)

SRBC System-Wide Available Supply	8,000,000 GPD
Peak Month, Average Day (Past 12 Months)	5,517,000 GPD
TOTAL DAILY AVERAGE AVAILABLE SUPPLY:	**2,483,000 GPD**

WATER MAIN EXTENSIONS
To Be Approved at the October 20, 2022 Board Meeting

	OWNER	SUBDIVISION	STREET NAME	LENGTH AND SIZE
1.	Berks Homes	Harvest Meadows - Phase 1	Fillmore Road Broad Oak Lane Magnolia Lane Plumtree Lane Zinnia Drive	450' of 12" DI Water Main 525' of 12" DI Water Main 2,775' of 8' DI Water Main 125' of 8" DI Water Main 25' of 8" DI Water Main



-Existing Water Mains - Proposed Water Mains

STATE COLLEGE BOROUGH WATER AUTHORITY

RECEIPTS

For the Nine Months Ending September 30, 2022

	Current Month	Year to Date	Annual
REVENUES			
BILLED INCOME	$ 933,624.58	$ 8,844,251.91	8,548,086.78
SERVICES PROVIDED TO OTHERS	3,673.50	55,378.50	39,750.03
PENALTIES	6,371.60	67,197.02	74,999.97
OTHER OPERATING REVENUE	9,494.60	35,772.50	22,500.00
CUSTOMER REFUNDS	(110.97)	(15,012.56)	0.00
INVESTMENT INCOME	1,815.20	(569,908.10)	150,412.59
OTHER NON OPERATING INCOME	22,160.00	698,708.44	0.00
TOTAL REVENUE	**977,028.51**	**9,116,387.71**	**8,835,749.37**
COST OF SERVICE			
TOTAL COST OF SERVICE	**0.00**	**0.00**	**0.00**
TOTAL REVENUE	***977,028.51***	***9,116,387.71***	***8,835,749.37***
EXPENSES			
CHEMICAL TREATMENT EXPENSES	12,442.99	173,516.79	213,374.97
PUMPING EXPENSES	5,680.38	231,027.60	285,750.00
FILTRATION EXPENSES	24,907.31	209,420.15	451,949.85
DISTRIBUTION EXPENSES	56,959.13	597,613.86	633,375.00
SERVICE BUILDING	4,923.34	64,187.29	72,749.97
MAINTENANCE & REPAIRS	18,463.89	180,149.97	201,000.06
VEHICLES	7,396.94	99,828.38	121,125.06
MISCELLANEOUS & OTHER EXPENSES	0.00	39,448.11	17,250.00
COVID-19	1,769.94	7,411.19	0.00
PAYROLL	71,147.97	661,311.12	655,350.03
BENEFITS	59,719.53	948,124.37	1,008,875.03
INSURANCES	57,227.51	697,635.62	785,875.06
SERVICES	17,625.00	266,274.19	291,275.00
OFFICE EXPENSE	7,316.51	114,218.02	144,375.03
COLLECTION EXPENSE	1,926.04	17,413.04	19,500.03
MISCELLANEOUS G&A	22,925.52	258,170.29	127,500.03
TOTAL EXPENSES	**370,432.00**	**4,565,749.99**	**5,029,325.12**
NET INCOME	***$ 606,596.51***	***$ 4,550,637.72***	***3,806,424.25***

STATE COLLEGE BOROUGH WATER AUTHORITY

Well Field Water Levels & Total Precipitation

	2020						2021						2022					
	No. 7	No. 19	No. 25	No. 43	No. 62	Precip*	No. 7	No. 19	No. 25	No. 43	No. 62	Precip*	No. 7	No. 19	No. 25	No. 43	No. 62	Precip*
JANUARY	14'	310'	14'	80'	190'	-0.47	11'	323'	13'	84'	189'	-1.34	14'	329'	16'	86'	194'	-0.44
FEBRUARY	14'	310'	12'	79'	190'	-0.53	13'	337'	17'	92'	190'	+0.49	14'	329'	15'	88'	194'	+2.07
MARCH	13'	300'	10'	78'	189'	+1.52	12'	329'	16'	86'	190'	+0.04	12'	331'	9'	86'	192'	-1.43
APRIL	12'	311'	9'	70'	184'	+1.20	11'	331'	13'	92'	189'	-0.89	13'	331'	11'	85'	192'	+0.05
MAY	12'	311'	9'	70'	184'	+0.13	11'	333'	13'	88'	190'	+1.12	13'	331'	10'	87'	192'	+2.32
JUNE	13'	312'	12'	71'	185'	+0.84	11'	331'	13'	88'	190'	+0.22	14'	331'	13'	78'	192'	-1.12
JULY	11'	302'	13'	76'	180'	-2.14	11'	319'	14'	88'	193'	+2.25	15'	330'	15'	86'	192'	-1.00
AUGUST	13'	314'	19'	72'	181'	-1.82	12'	313'	15'	93'	194'	+1.02	16'	329'	20'	80'	194'	-0.97
SEPTEMBER	13'	314'	21'	74'	182'	-0.25	12'	308'	13'	86'	194'	+6.26	18'	318'	21'	83'	195'	+0.79
OCTOBER	15'	315'	21'	81'	188'	+0.26	11'	309'	13'	82'	193'	+0.46						
NOVEMBER	15'	315'	21'	82'	184'	-0.15	11'	310'	13'	86'	193'	-1.60						
DECEMBER	15'	312'	23'	81'	189'	+1.61	14'	319'	15'	84'	193'	-0.51						
TOTAL						**+0.20**						**+7.44**						**+0.27**

.owest water levels below ground level during the month.

Monthly Precipitation above (+) or below (-) average Based on 2011 Data from PSU Dept of Meteorology (30 year annual average is 38.52")

^Unable to probe due to well building being under construction

ŧ Well 62 pump pulled for repairs

Well Field #1 - Thomas (Well No. 7)
Well Field #2 - Gray's Woods (Well No. 19)
Well Field #3 - Harter (Well No. 25)
Well Field #4 - Nixon (Well No. 43)
Well Field #6 - Alexander (Well No. 62)

State College Borough Water Authority

Pumping Report
September 2022

1. Average daily production for **September 2022**

   2021 – 4,701,816 gpd 2022 – 4,936,549 gpd

   INCREASE in average daily production: 234,733 gpd

2. Maximum demand day thru **September 30** was as follows:

   2021 – 6,057,038 (8/21/21) 2022 – 5,971,920 (8/31/22)

3. Water levels in the Thomas Farm, Nixon Farm and Gray's Woods Well Fields on **September 30:**

YEAR	THOMAS	NIXON	GRAY'S WOODS
2018	5'	35'	346'
2019	15'	59'	301'
2020*	13'	74'	308'
2021	10'	83'	298'
2022	18'	65'	318'
Safe Pumping Level	**31'**	**105'**	**412'**

* Well level monitoring equipment unhooked due to building renovations

4. Water supplied thru **September:**

YEAR	WELLS	FILTER PLANT	TOTALS
2018	556,581,000	762,169,000	1,318,750,000
2019	543,239,000	771,548,000	1,314,787,000
2020*	555,684,000	780,705,000	1,336,389,000
2021	525,557,000	758,039,000	1,283,596,000
2022	572,713,000	774,965,000	1,347,678,000

*Leap Year

INCREASE in pumping for 2022 –64,082,000 gallons.

STATE COLLEGE BOROUGH WATER AUTHORITY
ENGINEER'S REPORT
OCTOBER 15, 2022

Nixon-Kocher Water Treatment Facility

- The membrane filtration system has operated in automatic mode using recycled water. The GAC and UV systems have also been started and tested. The Contractor is currently implementing the telemetry system and finishing items for the building occupancy permit. The plant should be delivering finished water to the system before the next board meeting. See attached photos.
- The Contract times have been extended based on equipment delivery delays. Substantial Completion is now scheduled for February 9, 2023.
- Lobar Inc., submitted the following Applications for Payment for approval:
    - Contract No. 10-2019: General-Mechanical Work - $50,195.48
    - Contract No. 11–2019: Electrical Work - $9,574.11

  These payment applications along with engineering costs ($27,338.43) are included in PennVest Reimbursement Request No. 28 totaling $87,108.02.
- The next scheduled progress meeting is November 16.

Kennard Road Waterline – Design work is completed. The Authority reviewed the final design drawings and utility easements. The Authority solicitor forwarded easement agreements to property owners along Kennard Road.

DEP Public Water Supply Permit – The DEP fluoride permit application was submitted on October 7.

Calder Way Waterline Replacement – SCBWA reviewed the waterline drawings and provided comments which GDF has addressed. The waterline portion is considered 90% complete. The total project cost of the waterline portion is $2.5 million. Preliminary layout and design of the storm drainage system and sanitary sewers have been completed.

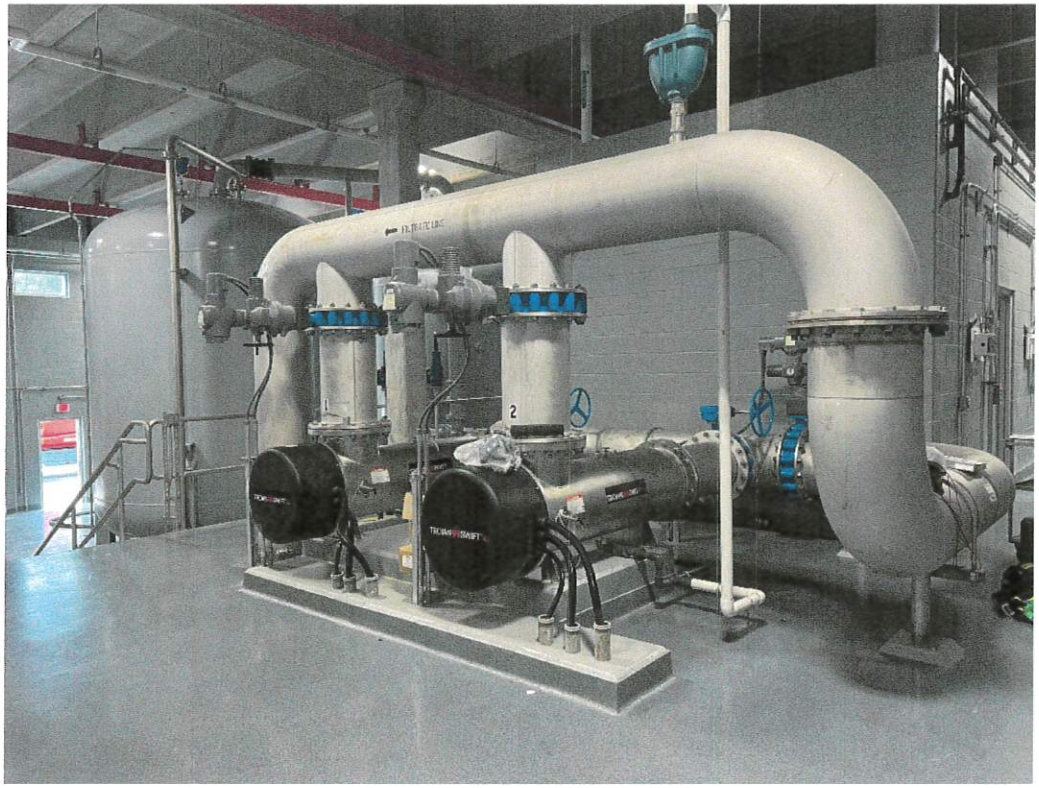
West Penn Power began layout for underground electrical facilities and preliminary drawings are expected this week. The Borough contacted Columbia Gas for the design of gas lines in the project area. In all cases, utility corridors (gas, telecom, power) have been identified on the drawings. They must conform with the current layout of municipal utilities, with waterlines having first priority.

Final design, including plans, specifications, cost estimates, construction phasing, vehicular and pedestrian traffic protection, downtown coordination, permit applications, etc., will be performed this fall and winter.

GD&F
GWIN
DOBSON &
FOREMAN
ENGINEERS

Membrane Filtration Cartridge Skids

Membrane Filtration Mechanical Piping



UV System

UV System

GAC Piping Arrangement

GAC Tanks

ABC REPORT from BILL KEOUGH

10/26/2022

Weather transitioning is the "operations plan of the day" for the agency's maintenance staff. Winter program planning is looking to transition into indoor sites. That being said, we still have several outside activities underway with hiking/walking/jogging on our Ferguson Township park trails and fall sports still underway. Public water service to our parks is being shut down in anticipation of below freezing night time temperatures. This process has been delayed in comparison to other years to accommodate customers using the parks with the warm weather we have been experiencing.

ITEMS OF INTEREST

A. JOHN HESS SOFTBALL COMPLEX—The Park Authority has reviewed the two (2) options provided from the 2011 Master Planning process. At the request of the Authority, staff was charged with preparing a "white paper" regarding current needs and the options of three (3) vs (4) fields. After receipt of the white paper, the Authority engaged in discussion of the pros and cons of each option. The Authority has recommended the three (3) field option configuration to move through the COG committee process. In addition to the repositioning of the fields at Hess, the Master Plan calls for an ADA accessible playground area, redesigned parking area and a park "picnic grove" with a shelter. Finalization of the recommended Master Plan will work its way through COG committees to the COG General Forum.

B. REGIONAL GOVERNANCE DISCUSSION—The COG Select Committee assigned the Governance Revision Task remains focused on its mission but has modified its process by requesting the bringing on board of a non-staff, non-COG person in a FACILITATOR capacity to manage the process of consensus building. During the COG Budget review process the dollars for this person (I think $ 5000) was cut from the CRPR Budget. However, in discussion with the Committee Chair, the use of a facilitator is still on the table with funding for the position coming from an alternate source. COG Executive Director Eric Nordberg has been tasked to move forward in securing a facilitator.

C. POOL ACTIVITY—Based on the summer season data (2022) it appears we have recovered to pre-covid use by our residents. In addition, due to favorable warm weather late into the fall, the Aquatics Director at the CRPR agency was able to offer some additional weekend pool time beyond normal fall closing.

D. MILLBROOK MARSH—The PHASE II building upgrades to the Marsh complex are on track and moving forward. Construction contracts have been offered and bids accepted. The MARSH BOARDWALK reconstruction is still in pre-construction study by a number of State Agencies and our local engineering team. The Park Agency maintenance department has been trying to keep up with small repairs on the “still open” portions. As the summer/fall season comes to a close, it appears an assessment of the open boardwalk sections has identified new areas that may have to close due to safety concerns and the conditions of the walkway. As of this report date, no decisions/recommendations about the new concerns have been made. In an effort to reduce the costs of the future Boardwalk project, the Authority is considering a DESIGN BUILD option for funding if grant related agencies will

allow this. Early estimates have suggested there may be a $ 2-$ 3 million dollar difference. That certainly has the Authority's attention.

E. WHITEHALL ROAD REGIONAL PARK—Over the last two months this project has had several fast moving parts affecting its completion. Weather (rain and wet grounds) has had some ongoing effects on the sequenced earth moving tasks. The Authority's on site project engineer has recently reported that about 75%-80% of the below ground and leveling work is now complete. This is the "heavy lifting" and "most costly" part of this project. But it has not been without some unanticipated and unfunded contingency dollar expenditure dollar increases in the operational earth moving project steps. Significant sub-surface rock was encountered and had to be excavated in order to install subsurface infrastructure (electricity, water, sewar). This created an over spending of the project's contingency funding. This has led the Authority to pursue two (2) actions:

1. Present a request to the General Forum for the release of a portion of the $ 816,000 contingency which was part of the borrowing process but not initially assigned to the designated project funding. (REQUEST $ 625,000)
2. Halt Authority approvals of change orders going forward until action on the $ 625,000 request for release of contingency funds is acted upon by the General Forum requiring a unanimous vote.

The Authority's request to the General Forum from the $816,000 contingency includes the following:

$ 275,000	for project contingency spending
$ 250,000	for an “on hold” grant match
$ 100,000	for irrigation on fields #3 & #4

Work is continuing at the site at the moment. Because of the fall weather (rain & wet grounds) seeding at the main fields was not able to be accomplished. This has resulted in the park’s opening being pushed from the fall of 2023 to the spring/summer of 2024.

Millbrook Marsh Nature Center

548 Puddintown Road, College Township

INFORMATION

GROUNDS OPEN DAWN TO DUSK DAILY

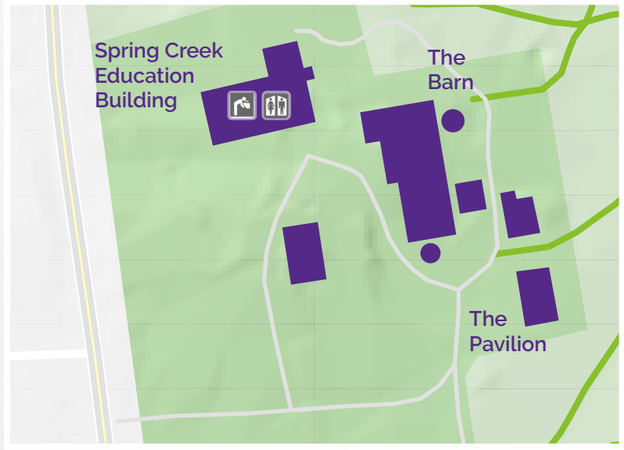
PET POLICY: Pets are permitted only on a leash not to exceed 6' in length and owners must clean up after their pet. In no case should dogs be allowed to chase wildlife or run loose through the preserve. "Dogipot" pet-waste bag stations are provided throughout the nature center.

BICYCLE POLICY: In the interest of safety for riders and other boardwalk users, bicycles and other wheeled recreational devices (skateboards, roller blades, scooters, roller skates, etc.) must be walked on the boardwalk and other designated areas (in wetland or riparian areas) as may be specified by signs. Strollers and wheelchairs are permitted on the boardwalk and trails.

HUNTING,TRAPPING AND ALCOHOL ARE PROHIBITED

MAP KEY

- Entrance
- Shared Bike/Pedestrian Path
- Grass Path
- Boardwalk Path
- Stream
- Building or Structure
- Grass
- Marsh
- The Fen
- Shrub/Trees
- Clearwater Conservancy Area
- Visitor Parking
- Sun Shelter
- Rest Rooms
- Doggie Bag Dispenser
- Pedestrian Path
- Bike Path
- Bird Blind
- Drinking Fountain
- Bridge
- CATA Bus Stop



Area Closed*

*Please do not step off the boardwalk into the sensitive marsh to go around any barricades. Please use the boardwalk in conjunction with designated grass trails to access all areas of the marsh. Thank you!

Operated by the
Centre Region Parks & Recreation Authority

CENTRE REGION Parks & Recreation

2643 Gateway Drive * State College, PA 16801 * 814-231-3071 * www.crpr.org

CRPA
Centre Regional Planning Agency

0 0.25 Miles

Map prepared by Centre Regional Planning Agency for Centre Region Parks & Recreation Dept. - May 2018

Millbrook Marsh Boardwalk Progress Report

JANUARY 2020

Three sections of the boardwalk were closed due to unsafe structural conditions.

FEBRUARY 2020

Boardwalk Working Group established including representatives from College Township, Penn State, Millbrook Marsh Nature Center Advisory Committee (MMNCAC), Centre Region Parks and Recreation Authority (CRPRA), and Centre Region Parks and Recreation (CRPR) staff. Identified need to conduct a Boardwalk Feasibility Study to research, evaluate, and provide recommendations for the boardwalk.

MARCH 2020

Feasibility Study scope defined and includes reviewing hydrology on the site, stormwater and climate change impact evaluation, archeological, soil, and vegetation surveys, structural evaluation and recommendations, structural design, and identifying permitting requirements. Due to funding limitations the feasibility study is divided into two parts.

APRIL 2020

Repaired and reopened two closed sections of boardwalk in need of minor repairs. The section from Thompson Run to the intersection near the bird blind and the bridge over Thompson Run were determined to need major repairs or full replacement and remain closed.

MAY - JULY 2020

Funding to conduct Part I of the study secured and sourced in part by the PA Department of Conservation and Natural Resources (PA DCNR). Request for Proposals opened; seven project proposals received.

AUGUST 2020

Working Group recommends LAN Associates to be the consultant for the Part I Study.

SEPTEMBER 2020

LAN Associates' proposal endorsed by the MMNCAC and approved by the CRPRA, PA DCNR, and the Centre Region Council of Governments (CRCOG) Facilities Committee.

NOVEMBER 2020

LAN Associates began work on the study, including biweekly meetings with the Working Group.

APRIL - MAY 2021

Final draft of the Part I Study reviewed by the Working Group, MMNCAC, CRPRA, PA DCNR, and the CRCOG Facilities, Finance, and Parks Capital committees.

CONTACT US

For questions or comments,
please contact
Millbrook Marsh Nature Center at
(814) 235-7819 or
mmnc@crcog.net

Millbrook Marsh Nature Center

JUNE 2021

Final draft comments from all seven committees provided to LAN Associates.

JULY 2021

Part I of final report approved by seven committees that participated in the review. Outcomes include recommendations to replace existing boardwalk and bridges with updated design for accessibility and longevity, enhance boardwalk access trails for accessibility, and complete Part II of the Boardwalk Feasibility Study.

NOVEMBER 2021

Funding for Part II of the study approved by the Centre Region General Forum. Part II scope includes archeological, soil, and vegetation surveys, wetland delineation, stream bank stabilization option analysis, detailed structure design, and additional permitting review.

FEBRUARY 2022

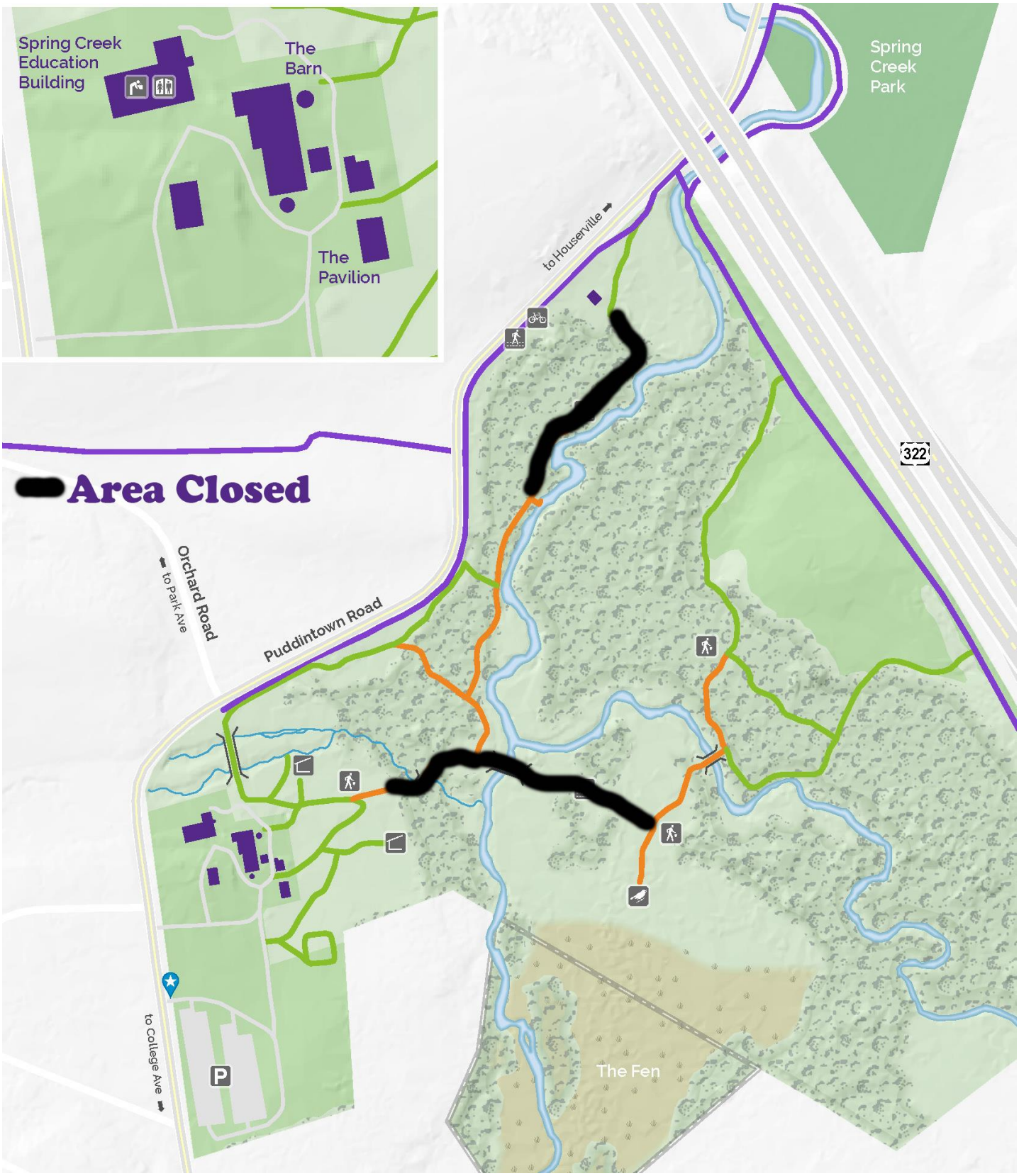
The Centre Region Parks and Recreation Authority approved LAN Associates to complete the Part II study.

CURRENT

Part II study is underway. Soil, archaeological, vegetation and topography surveying was completed in summer 2022, and stream bank stabilization surveying and bridge engineering is being conducted. The Part II report is anticipated to be finalized in fall 2022 and will provide direction for reconstruction.

CENTRE REGION Parks & Recreation

MILLBROOK MARSH BOARDWALK CLOSURE MAP AS OF 1/13/2020



LAN ASSOCIATES | Engineering, Planning, Architecture, Surveying Inc.

September 28, 2022

Centre Region Parks & Recreation
Centre Region Parks & Recreation Authority
2040 Sandy Drive, Suite A
State College, PA 16803

Attention: Ms. Pamela J. Salokangas, CPRP, CPSI
Director of Parks and Recreation

Email: psalokangas@crcog.net

Subject: Centre Region Parks & Recreation
Feasibility Study Phase 2
LAN Ref. #2.20354.02
Ref: Summary to Date

Dear Ms. Salokangas:

As part of the Phase 2 Feasibility Study, LAN Associates, Engineering, Planning, Architecture, Surveying, Inc. (LAN), along with our consultants, have done additional fieldwork, concept advancement into partial design of the boardwalk, as well as confirmation of archaeological and plant species impacts during construction.

To date, the following tasks have been completed:

1. **Connector Loop**
   LAN in conjunction with Melissa Kauffman (CPRP) and Suzy Yetter (ClearWater Conservancy) walked the potential area for the proposed boardwalk connector loop to determine the best and least invasive path to connect the east and west portions of the trail without having visitors leave the bounds of the property. As indicated on the attached survey, the proposed path marked with points M-1 through M-6 (Dwg S.02) was selected as the optimal path. This proposed path was also used during the field work for both the rare plant species and archaeological surveys.

2. **Rare Plant Species Survey**
   LAN's consultant, Davey Resource Group, conducted field work which included possible rare species sample collection for verification and photo documentation of plants around the area of construction. The final determination is that there are no rare plant species as per the Pennsylvania rare plant list.

3. **Phase IA Archaeological Survey**
   LAN's consultant, Richard Grubb & Associates, conducted a site visit, as well as background research into the site and surrounding area to assess the sensitivity of the Area of Potential Effects (APE) for the project. Based on historical research of the site and surrounding areas, along with PA-SHARE 2021 probability model, the APE consists of high and moderate probability for pre-contact sites. The conclusion and recommendation is that a Phase IB archaeological survey is required during construction and that the survey strategy be approved in consultation with PASHPO. A proposal for a phase IB survey has been provided to the working group for consideration and review.

4. **Stream Modelling and Bank Stabilization**
   As part of the field work conducted by LAN's survey crew, information was gathered in and around the Thompson Run and Slab Cabin Run, to conduct HECRES modeling of the stream to determine likely erosion patterns which will allow LAN to recommend the appropriate methods and areas of

bank stabilization as outlined in Phase I of the feasibility study. The modeling has proved to be slower than expected and LAN continues to progress the modeling efforts. As soon as preliminary information is received, a meeting with the working group will be scheduled to discuss the findings and recommendations.

5. **Geotechnical Report**
   CMT Labs, on behalf of LAN, conducted eleven (11) borings at varies locations. Boring locations B-1 through B-5 were drilled with a conventional drilling rig and were extended to depths ranging between 11 and 15 feet below grade. Boring locations B-6 through B-11 were drilled with hand sampling techniques and were extended to depths ranging between 4 and 7 feet below grade. The final report was submitted to the working group for their information.

6. **Boardwalk Typical Span Design**
   The initial design intent has been to perform the construction in what is referred to as a top-down approach. This means that the boardwalk would be constructed starting from the more stable areas working in towards the bridges and center portions of the marsh. This will allow the construction equipment to use the completed sections and minimize disturbance of the surrounding marsh. Attached sketches SK-1 and SK-2 depict a typical span designed with helical piles based upon the completed geotechnical report. The design maximizes the span based upon the maximum reach of drilling equipment that can be supported on the constructed boardwalk at 10-foot spans.

   An alternative approach is the use of mud mats along the existing boardwalk path, using the already "disturbed areas" under the boardwalk. This will allow machinery to drill the piles at a larger span and will reduce the structure of the boardwalk to strictly a pedestrian load of 100 lbs of live load. This option will likely also be used for the bridge construction, and LAN is seeking preliminary DEP opinion on this method of construction.

7. **Bridge Design and Construction**
   The biggest hurdle to date is the constructability of the three (3) proposed bridges as part of the trail system, in particular, the Thompson Run bridge as it is the longest span. As per our working group discussions, the ability to set large timber members or prefabricated sections without impact to the surrounding areas has been the bottle neck of this portion of the design. LAN continues to investigate all options and to engage with various manufacturers and bridge construction contractors to gain any insight or methods that have the least impact on the surrounding environment. Some options under investigation are temporary shoring/support within Thompson Run to allow for construction of the bridge, aerial placement, or modular/foldable sections.

8. **Cost Estimate**
   Attached is an updated cost estimate based upon the more detailed boardwalk design, anticipated pile counts and survey work. The stream bank stabilization and bridge construction are still to be determined as we advance our design. Place holders have been included, but these will likely change.

Based upon all the completed work to date, we do not believe that there is anything to preclude this project moving forward in the construction document and construction phases, excluding funding.

Should you have any questions regarding the above items, or if additional information is required, please feel free to contact LAN at your convenience.

Respectfully submitted,

LAN Associates, Engineering, Planning,
Architecture, Surveying, Inc.

Vlad Potiyevsky

Vlad Potiyevsky, AIA
Senior Associate

1st CLASS POSTAGE

MILLBROOK MARSH NATURE CENTER
c/o Centre Region Parks & Recreation
2643 Gateway Drive #1
State College, PA 16801

EARLY HISTORY OF MILLBROOK MARSH

Most of the Nature Center property is part of the Houserville Archaeological District, which contains many prehistoric Native American sites. The most common evidence of prehistoric people living here are flakes and other stone pieces produced as waste during the manufacture of stone tools, such as projectile points, drills and scrapes. Much of the stone material found on site here is jasper. The jasper source is located along and under East Park Avenue near its intersection with Orchard Road, less than a mile from the Nature Center. The jasper source may have been discovered as early as 8000 B.C. Groups camped along the streams while procuring jasper for making new tools. Jasper pieces of good quality were roughly shaped at the quarry and then taken to a camp site where they were shaped further.

A hearth, also found on site, was radiocarbon dated; the result was 745 years A.D., plus or minus 80 years. It contained many heavily-burned and closely-packed limestone rocks, charcoal, jasper flakes, charred maize, nutshell, and wild seeds.

CONTACT INFO & MAP/DIRECTIONS

Millbrook Marsh Nature Center is located at 614 Puddintown Road in College Township. For directions, please visit www.MyMillbrookMarsh.org.

Mailing Address:
Millbrook Marsh Nature Center
c/o Centre Region Parks & Recreation
2643 Gateway Drive #1, State College, PA 16801
(814) 231-3071 Fax (814) 235-7832
crpr@crcog.net

central Pennsylvania
CONVENTION & VISITORS BUREAU
Tour. Roar. Explore...more!

PA

Millbrook Marsh Nature Center

Millbrook Marsh Nature Center
614 Puddintown Road, College Township
State College, PA 16801
www.MyMillbrookMarsh.org

GENERAL OVERVIEW

The Mission of Millbrook Marsh Nature Center is to educate and inspire people about the natural world, and to instill a passion for the environment through science, history, culture, and art.

Millbrook Marsh Nature Center is located in the heart of Centre County - in College Township - and is easily accessible to residents, visitors, and school groups.

The beautiful 62 acres at Millbrook Marsh Nature Center provide visitors with a unique wetlands setting to explore and enjoy. The 12-acre farmstead includes a farmhouse, an 1850s forebay bank barn, and outbuildings. Upland field areas, once farmed by residents and grazed by livestock, are still visible and divided by historic fence posts. Bluebirds and kestrels can be seen flying over and small animals such as groundhogs, foxes, and rabbits can be seen venturing through the fields. These areas, some of which were originally wetlands, are now being managed to return to their natural state.

The 50-acre wetland area at Millbrook Marsh Nature Center showcases several important types of wetland areas, including natural springs and a calcareous fen. The forested areas are wonderful places to walk among the trees, watch for birds and mammals, and observe the trees and plants. The meadows, full of wildflowers, tall grasses, and sedges, give visitors a glimpse at the beauty of natural wetlands. Plants such as Teasel, Joe-pye weed, and Angelica are mini-cities for insects, fascinating to view and observe. Many types of native wildflowers flourish in the wetland and can be seen from the paths and walkways. Over 50 species of songbirds, as well as hawks and blue herons, have been sighted at the marsh.

Millbrook Marsh is transected by three streams that join Spring Creek near the popular Spring Creek Park. Bathgate Springs Run, Thompson Run, and Slab Cabin Run offer unique wildlife viewing and nature education opportunities. Visiting students work with a staff naturalist to trace the water from Millbrook Marsh until it eventually reaches the Chesapeake Bay. They also learn about important aquatic macro-invertebrates and why water is so important to our environment.

VISITOR INFORMATION

The Millbrook Marsh Nature Center grounds are open from dawn to dusk, 7 days a week for day-use purposes such as hiking, bird watching, picnicking, etc. The Nature Center buildings are open only during scheduled public or private programs, but visitors are welcome to enjoy the grounds when the buildings are not open.

Important rules:

- Please stay on the trails and the boardwalk
- Bikes must be walked on the boardwalk
- Refrain from cutting, removing or disturbing vegetation
- Please do not litter
- No alcoholic beverages
- Please respect the wild creatures and natural areas
- Hunting and trapping is prohibited
- Dogs must be kept on a leash. The owners must clean up after the dogs.
- All research projects must be approved in advance.
- Permits are required in advance for any group use of the site.

Millbrook Marsh Nature Center provides great opportunities seasonally, including:

- Programs for Young Children
- Guided Discovery Programs for Youth
- Exciting Summer Camps
- Family Programs & Events
- Programs for Homeschool Families and Scout Groups
- Birthday Parties for Children
- Rentals Opportunities for the Barn & Pavilion

FRIENDS GROUP

The Friends of Millbrook Marsh Nature Center support the operation and development of the environmental, cultural, and historical initiatives offered at the nature center. Friends receive quarterly newsletters, a 10% discount on programs, and more! Please join and help support the future of the Millbrook Marsh Nature Center.

FUTURE PLANS

The vision for the Millbrook Marsh Nature Center is to build and maintain an innovative and creative environmental education center, including year-round teaching buildings, a cutting-edge wetland/water laboratory, informational kiosks, parking areas, and access to community bike paths. With this vision in mind, members of the community have volunteered countless hours each month to the Millbrook Marsh Nature Center Advisory Committee. This group, with the support of the Parks & Recreation staff and the Centre Regional Recreation Authority, has developed a Master Plan for the Millbrook Marsh Nature Center. With the continued development of Nature Center facilities, improved community programs and educational services can be offered to a wider range of people with diverse interests.

The Nature Center is operated by Centre Region Parks and Recreation, an agency of the Centre Region Council of Governments, and the Centre Regional Recreation Authority, an IRS designated 501(c)3 organization.

Photos by Molly Hetrick and Sarah Caskey

MAILING CARD

WOULD YOU LIKE TO LEARN MORE ABOUT MILLBROOK MARSH NATURE CENTER?

Please complete and mail this coupon to receive more information about the programs and services listed below. Thank you for your interest. We look forward to hearing from you!

Please send me information about:

__ Group Programs offered at MMNC.

__ Joining the “Friends of Millbrook Marsh Nature Center”.

__ How we can support the future of the Nature Center through a tax-deductible donation.

__ Renting the Nature Center barn and/or pavilion for activities, events, meetings, and more!

__ I am interested in volunteering at the Nature Center.

__ I would like someone to contact me regarding questions I have about the center.

For more information about programs or visiting, please visit our website at www.MyMillbrookMarsh.org or contact crpr@crcog.net

(May 06)

Cost Estimate - Mud Mats

Millbrook Marsh Boardwalk Feasibility Study

Helical pile foundations, engineered wood sub-structure, black locust decking. Timber bridges

LAN Job # 2.20354.02

Description	Unit	Quantity	Cost/Unit ($)	Subtotal ($)
General Conditions	ALLOW	1	$200,000	$200,000
Boardwalk Decking (6' width)*	LF	3,400	$360	$1,224,000
Boardwalk Sub-structure (16' span)	SPAN	275	$2,500	$687,500
Boardwalk Foundation (16' span)	EA	550	$1,100	$605,000
Grass Trail Section C - Upgrade (LF/Boardwalk)	LF	800	$740	$592,118
Grass Trail Section E - Upgrade (LF/Boardwalk)	LF	770	$740	$569,913
Bridge Construction - Thompson Run	EA	1	$175,000	$175,000
Bridge Construction - Slab Cabin Run	EA	1	$150,000	$150,000
Bridge Construction - Bathgate Springs	EA	1	$20,000	$20,000
Bridge at Connector Loop	EA	1	$150,000	$150,000
Bridge Foundations	EA	4	$30,000	$120,000
Observation Lookouts	EA	3	$19,737	$59,212
Lookout Expansion at Vanes	EA	1	$8,882	$8,882
Grass Trail Section D - TSA Upgrade (LF/path)	LF	350	$30	$10,500
Grass Trail Section B - TSA Upgrade (LF/path)	LF	160	$30	$4,800
Grass Trail Section A - TSA Upgrade (LF/path)	LF	500	$30	$15,000
Strreambank Stabilization	SF			$0
* All lumber quoted is #1 grade lumber				
			Construction Cost Subtotal	**$4,591,924.41**
			20% Contingency	**$918,384.88**
			15% Escalation	**$137,757.73**
			A/E Fees (est. 7% of Construction Cost)	**$395,364.69**
			Construction Administration	**$0.00**
			Grand Total:	**$6,043,431.72**

Cost Estimate - Top Down

Millbrook Marsh Boardwalk Feasibility Study

Helical pile foundations, engineered wood sub-structure, black locust decking. Timber bridges

LAN Job # 2.20354.02

Description	Unit	Quantity	Cost/Unit ($)	Subtotal ($)
General Conditions	ALLOW	1	$100,000	$100,000
Boardwalk Decking (6' width)*	LF	3,400	$360	$1,224,000
Boardwalk Sub-structure (10' span)	SPAN	375	$7,120	$2,670,000
Boardwalk Foundation (10' span)	EA	750	$1,100	$825,000
Grass Trail Section E - Upgrade (LF/Boardwalk)	LF	770	$1,388	$1,068,715
Grass Trail Section C - Upgrade (LF/Boardwalk)	LF	800	$1,388	$1,110,353
Bridge Construction - Thompson Run	EA	1	$175,000	$175,000
Bridge Construction - Slab Cabin Run	EA	1	$150,000	$150,000
Bridge Construction - Bathgate Springs	EA	1	$20,000	$20,000
Bridge at Connector Loop	EA	1	$150,000	$150,000
Bridge Foundations	EA	4	$30,000	$120,000
Observation Lookouts	EA	3	$37,012	$111,035
Lookout Expansion at Vanes	EA	1	$16,655	$16,655
Grass Trail Section D - TSA Upgrade (LF/path)	LF	50	$30	$1,500
Grass Trail Section B - TSA Upgrade (LF/path)	LF	160	$30	$4,800
Grass Trail Section A - TSA Upgrade (LF/path)	LF	500	$30	$15,000
Strreambank Stabilization	SF			$0
* All lumber quoted is #1 grade lumber				
			Construction Cost Subtotal	**$7,762,058.24**
			20% Contingency	**$1,552,411.65**
			15% Escalation	**$232,861.75**
			A/E Fees (est. 7% of Construction Cost)	**$668,313.21**
			Construction Administration	**$0.00**
			Grand Total:	**$10,215,644.84**

NOTE:

LAN Associates, Engineering, Planning, Architecture, Surveying, Inc. (LAN) has no control over the cost of labor, materials, equipment, or services furnished by others, over the contractor's methods of determining prices, or over competitive bidding or market conditions. LAN's opinions of probable total costs and construction costs provided herein are made on the basis of LAN's experience and qualifications and represent LAN's best judgment as an experienced and qualified professional architecture & engineering firm, familiar with the construction industry. LAN does not guarantee that the proposals, bids, or actual project or construction costs will not vary from the above estimated costs prepared by this office. Actual construction costs may vary substantially from this estimate for many reasons including, but not limited to the following:

1. The business climate at the time of bidding and construction.
2. Availablity of construction workers with necessary skills at the time of construction.
3. Contractor's workers compensation rates and insurance requirements.
4. Contractor's assessment of cost of warranted work, and;
5. Contractor's perception of risk.
6. Cost and availability of construction materials.

Protection and management plan for the Millbrook Marsh Nature Center / prepared for the ClearWater Conservancy and Pennsylvania Department of Conservation and Natural Resources ; prepared by Robert P. Brooks ... [et al.].

University Park, Pa. : Penn State Cooperative Wetlands Center, Forest Resources Laboratory, Pennsylvania State University, 1998.

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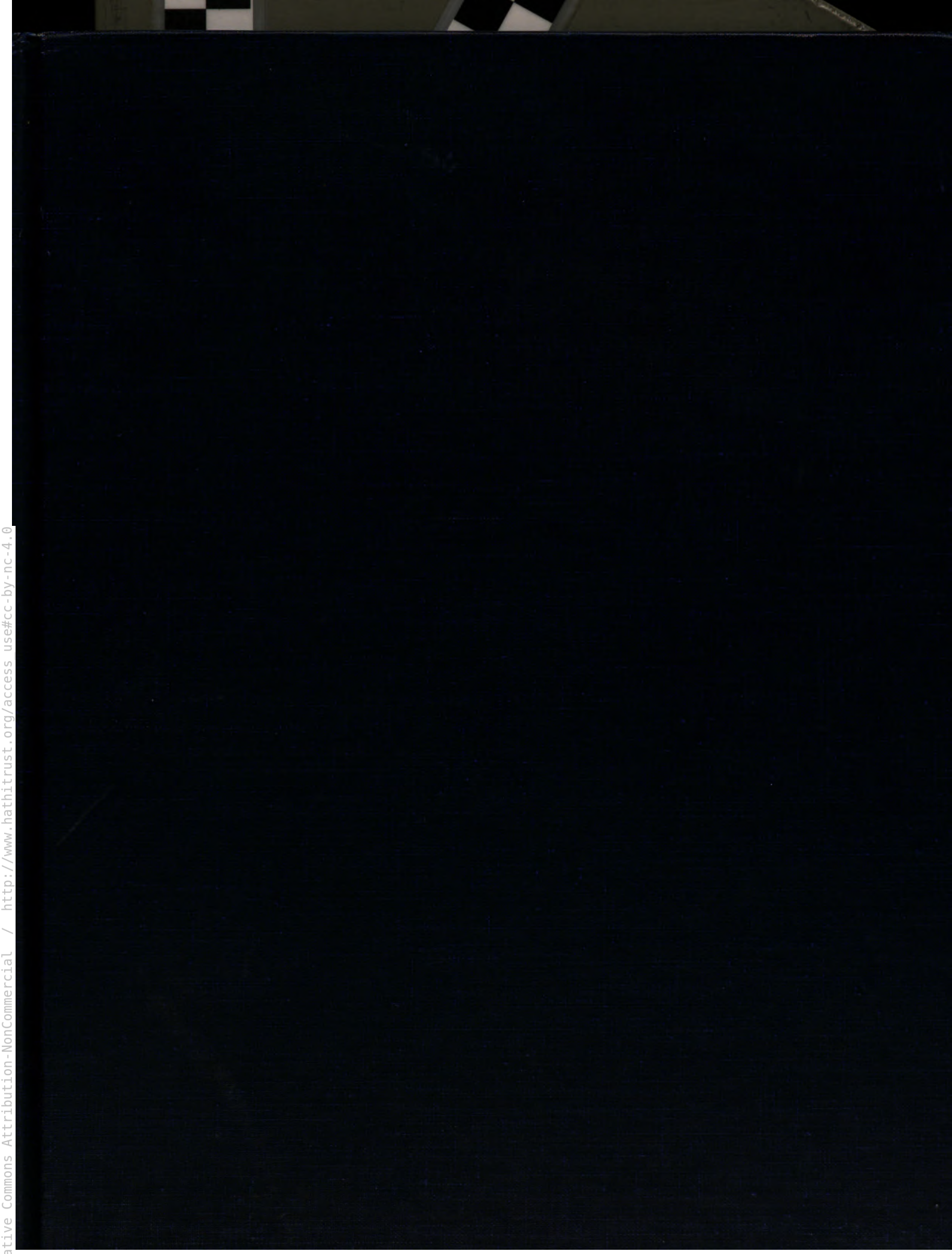

Protection and Management Plan

for the

Millbrook Marsh Nature Center

"The mission of the Millbrook Marsh Nature Center is to educate and inspire people about the natural world ..."

"... and to instill a passion for the environment through science, history, culture and art."

Protection and Management Plan for the Millbrook Marsh Nature Center

Prepared for:

The ClearWater Conservancy
and
Pennsylvania Department of Conservation and Natural Resources

Prepared by:

Robert P. Brooks
Kenneth R. Tamminga
Cheryl J. Lipton
Robert F. Carline
Dennis Genito
Rick L. Day

as Report No. 98-2
Penn State Cooperative Wetlands Center
Forest Resources Laboratory
Pennsylvania State University
University Park, PA 16802

July 1998

Foreword

The preparation of this Protection and Management Plan for Millbrook Marsh was financed, in part, by a Keystone Recreation, Park and Conservation Fund Program Grant from the Pennsylvania Department of Conservation and Natural Resources to the Penn State Cooperative Wetlands Center with the support of The ClearWater Conservancy. The Penn State Cooperative Wetlands Center is jointly administered by the School of Forest Resources and the Environmental Resources Research Institute of The Pennsylvania State University. Additional financial and in-kind support was provided by the Penn State Cooperative Wetlands Center, the Pennsylvania Cooperative Fish and Wildlife Research Unit, the Department of Landscape Architecture, and the Land Analysis Laboratory of the College of Agricultural Sciences.

The entire project team contributed to the collection of primary and secondary data and the compilation of the concepts and analyses presented in this report:

Principal Investigators:

Robert P. Brooks, Professor of Wildlife and Wetlands, and
Director of the Penn State Cooperative Wetlands Center (CWC)
Kenneth R. Tamminga, Assistant Professor of Landscape Architecture
Robert F. Carline, Adjunct Professor of Fisheries, and Unit Leader of the Pennsylvania Cooperative Fish and Wildlife Research Unit (PCFWRU)
Rick L. Day, Assistant Professor of Soil Science, and Manager of the Land Analysis Laboratory (LAL)

Contributing Staff and Students:

Cheryl Lipton, Graduate Student in Ecology, CWC - mapping and natural history
Debbie Campbell, Graduate Student in Ecology, CWC - mapping
Jay Blue, Undergraduate Student in Landscape Architecture, CWC - mapping, trails
Cynthia Hendricks, Staff of LAL - mapping
Dennis Genito, PCFWRU - stream surveys
Brandon Stem, PCFWRU - stream surveys
Michael Clester, PCFWRU - stream surveys

Several other individuals working at the CWC contributed information, including: Robin Bennett (wetland macroinvertebrates), C. Andrew Cole (hydrographs), Mary Gaudette and Tim O'Connell (bird surveys), Denice H. Wardrop (wetland sedimentation rates); Christopher Urban (mammals); Jen Perot (graphics); and Ben Brooks (compilation), thanks to all of them. Photographs for this report were taken by Rob Brooks and Ken Tamminga.

The Plan benefited tremendously by countless discussions and conversations with many individuals who have graciously shared their ideas and information, especially the members of the Millbrook Marsh Nature Center Advisory Board. To all of you, we extend our appreciation. We extend special thanks to the following individuals: Kristen Saacke Blunk, Diane Kerly, and Jackie Melander for supporting our efforts. The databases for developing the site maps were made available from LAL through the generosity of the Centre County Planning Commission. We thank Kristen Saacke Blunk, Diane Kerly, Greg Roth, Denee Sudano, and Ron Woodhead for reviewing an earlier draft of this report.

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List of Figures, Tables, Photographs, and Maps

Overview of Management Goals

"The mission of the Millbrook Marsh Nature Center is to educate and inspire people about the natural world and to instill a passion for the environment through science, history, culture and art."

The following goals and principles envision Millbrook Marsh Nature Center as a sanctuary for nature and representative cultural heritage in a quickly urbanizing context. They set the framework for management that will help ensure a perpetually flourishing and complex ecosystem, one that the people of Centre Region will come to cherish and steward as a place of discovery, learning and inspiration. And because the Nature Center's vitality depends to a great extent on human influences beyond its boundaries, these goals and principles are proactive in calling for conservation measures throughout the watershed.

Overall Goal

To protect, restore, and enhance the biotic, abiotic, cultural and scenic values of the site, and to promote public understanding, appreciation, and enjoyment of this heritage. Priority will be given to the protection of the wetland and stream ecosystems.

Natural History Goal

To ensure the health and integrity of the Center's natural aquatic and upland ecosystems by protecting, restoring, and enhancing ecological and hydrologic functions in a manner that promotes self-sustaining and diverse biotic communities.

Cultural Heritage Goal

To identify, maintain and celebrate the cultural heritage features of the Center for their inherent value, and as they reveal the long term human use and occupancy of the area.

Education and Interpretation Goal

To provide opportunities for students of all ages to explore and learn about the site's ecosystem and its role as headwaters to the Spring Creek Watershed and the Chesapeake Basin in a manner that is experiential, participatory and respectful of the natural world.

Recreation Goal

To accommodate ongoing and new passive recreational opportunities in Millbrook Marsh that are consistent with the above goals.

Introduction

The purpose of this Protection and Management Plan for Millbrook Marsh is to characterize and document the current ecological conditions of the site and to propose management strategies to protect and restore the natural and cultural features of this important environmental resource for the enjoyment of the citizens of central Pennsylvania. To clearly define the scope of this Plan, we refer to the entire site as the Millbrook Marsh Nature Center - a place - not a group of buildings.

We envision the Millbrook Marsh Nature Center as a place to observe and learn about our natural and agrarian heritages in a rapidly urbanizing area. This Plan establishes the framework for management to help ensure a perpetually flourishing ecosystem, one that the people of the Centre Region will come to visit, cherish, and protect as a place of discovery, learning and inspiration. And, because the vitality of Millbrook Marsh depends to a great extent on human influences beyond its boundaries, these goals and associated principles are proactive in calling for conservation measures throughout the Spring Creek Watershed (Map 1).

The Plan represents the Final Report for this project. Originally, we envisioned a report with two parts, one addressing protection and management, the other one dealing with access and open space issues. Consequently, the specific objectives from the original proposal were:

1. To characterize the current ecological condition of the Millbrook Marsh by developing a standard monitoring protocol, compiling existing information, and conducting baseline ecological inventories for the purposes of generating a "Protection-Management Plan".

2. To develop an open space plan for Millbrook Marsh, including walking trails, boardwalks, bridges or overlooks, which preserves the natural integrity of the site and enhances the public's access in a managed, but educational manner.

As the project progressed, it became clear that these two phases should be woven together, because they are invariably intertwined. Thus, the Plan approaches both objectives simultaneously.

First, we review the **Public Review Process** that was followed to gain input into and acceptance of the Plan. Next, the general **Methods** are summarized. This is followed by descriptions of Millbrook Marsh in its Political, Cultural, Historic, and Ecological **Settings**. We report on the analysis of the data gathered from the **Inventories** that were conducted or reviewed to help us understand the site. Then, we discuss **Management Principles** that influenced the evolution of our **Management Zones**, with related management activities and facilities. At the end of this Plan, we propose a modest **Monitoring Protocol** for collecting information to track the ecological condition of the site over time. We end with a summary of our **Recommendations** that are directed at all interested parties. **References** and **Appendices** are included after the main body of the Plan.

This Plan is intended to provide guidance for protecting and managing the Millbrook Marsh Nature Center well into the future. Thus, it should be used in conjunction with other efforts underway to protect the entire Spring Creek Watershed, in which the Millbrook Marsh Nature Center occupies a central place, both geographically and ecologically.

We hope to instill in readers of this report and in visitors of Millbrook Marsh Nature Center, a sense of place, for truly, to have such a unique habitat in our collective backyard is, at the very least, a fortunate circumstance. If you haven't visited the Millbrook Marsh Nature Center, please do so at your earliest convenience.

Public Review Process

A condition of the contract with The ClearWater Conservancy and the Pennsylvania Department of Conservation and Natural Resources was the establishment of an Oversight Committee and involvement of the public to provide periodic advice on the project as the plan developed. The Oversight Committee included representatives from interested organizations and several citizens who are neighbors of the Millbrook Marsh Nature Center. There were four meetings where this type of formal input occurred. On 7 July 1997 and 15 October 1997, members of the Oversight Committee were invited to attend a half-hour briefing prior to a regularly scheduled meeting of the Centre Region Parks and Recreation Department's (CRPRD) Advisory Committee (there is considerable overlap in the memberships of the two committees). Presentations, including a display of project maps and photographs, were made on both occasions. There was significant and helpful discussion during these meetings. On 24 November 1997, a publicly advertised open house to review the draft recommendations was held in the College Township Municipal Building that overlooks the Millbrook. Sessions were held from 4-6 p.m. and from 7-9 p.m. (Photo 1), and about 20 people attended. The participants provided both oral and written comments during the presentations. On 12 February 1998, a presentation was made in conjunction with the CRPRD's Parks, Recreation, and Open Space Planning Forum where regional leaders and citizens were invited to provide input to the CRPRD for strategic planning.

In addition, one or more of the principal investigators made presentations or provided updates during meetings of the CRPRD's Advisory Committee and Programming Committee for the Millbrook Marsh Nature Center. These committees are composed of individuals representing regional, municipal, educational, academic, and conservation organizations providing a breadth of perspectives on the future of Millbrook. Information was presented to the CRPRD's Advisory Committee on the following dates: 7 May 1997, 27 Jun 1997 (a Planning Forum for the site), 13 Aug 1997, 17 Sep 1997, 12 Nov 1997, and 14 Jan 1998. Information also was presented to the CRPRD's Programming Committee on the following dates: 19 Feb 1997, 2 Apr 1997, and 14 May 1997. These meetings, plus numerous contacts with resource people and citizens from the Centre Region, provided substantial and valuable input on the development of the Protection and Management Plan for the Millbrook Marsh Nature Center.

Photo 1. Public Review Process: The Project Team and the ClearWater Conservancy hosted an open house for the public at the College Township Municipal Building on 24 November 1997.

Methods

Our methods are described only briefly here; additional details are available from the investigators upon request. Overall, we sought to compile information from prior studies, although there was no attempt to be exhaustive in that search, particularly for historic natural history data. We cite other studies in the text to acknowledge contributions from prior work. We focused collection of original data on the aquatic components of the site, primarily streams and wetlands. In regard to other natural history data, the Penn State Cooperative Wetlands Center has produced an additional report in the form of a graduate paper (Lipton 1998) that will further collect, analyze, and synthesize historic and current natural history information.

Mapping and Site Investigations

We have chosen to present a significant portion of the information that was collected visually, through a series of maps, figures, and photographs. The majority of the mapping was conducted at the Land Analysis Laboratory (LAL) of the College of Agricultural Sciences, at Penn State, under the direction of Rick L. Day. Watershed and base maps were produced from databases compiled by LAL, in part, for a Centre County Inventory conducted for the Centre County Planning Office. This study included recent aerial orthophotographs and associated analysis of the natural features and land use in Centre County, which helped generate maps for the Spring Creek Watershed where Millbrook Marsh is centrally located (Map 1) and the Study Area and Context map of the site and its immediate surroundings (Map 2).

A significant portion of our analyses that led to the development of Management Principles and Management Zones, and ultimately, Recommendations, were based on numerous site visits conducted from the summer of 1997 through spring 1998. Tamminga and Brooks traversed the site many times, reviewed the information collected, and discussed the options with Project Team members and others, before finalizing the Plan.

Streams Inventory

The objectives of the stream survey were: 1) to determine the composition of the macroinvertebrate community; 2) to estimate the density and biomass of trout; 3) to determine the composition of the entire fish community; and 4) to characterize stream habitat and determine stream discharge at several points within Millbrook Marsh. Work on stream biota, physical characteristics, and water quality was conducted by personnel from the Pennsylvania Cooperative Fish and Wildlife Research Unit under the direction of Dr. Robert F. Carline.

Benthic macroinvertebrates were collected from six sampling stations located in riffles along Thompson Run and Slab Cabin Run (Fig. 1). At each station, on July 22 and October 20, 1997, three Surber samples were taken across a riffle. The samples were combined to make one composite sample, fixed in 10% formalin, and returned to the laboratory. After 24 hours, samples were transferred to 80% ethanol. Preserved samples were mixed and subsampled. All organisms in a subsample were removed. If the total number removed was less than 300 individuals, then another subsample was taken. The process was repeated until 300 or more organisms were removed. Organisms were identified to genus, except for chirononmids, muscids, simulids, and gastropods, which were identified to family. Oligochaetes were identified to order.

The U. S. Environmental Protection Agency's Rapid Bioassessment Protocol (RBP III) was used to determine the condition of the macroinvertebrate community in the streams, using the July 1997 data. The protocol consists of various biotic indices, which are integrated to produce a "Bioassessment" category (non-impaired, slightly impaired, moderately impaired, and severely

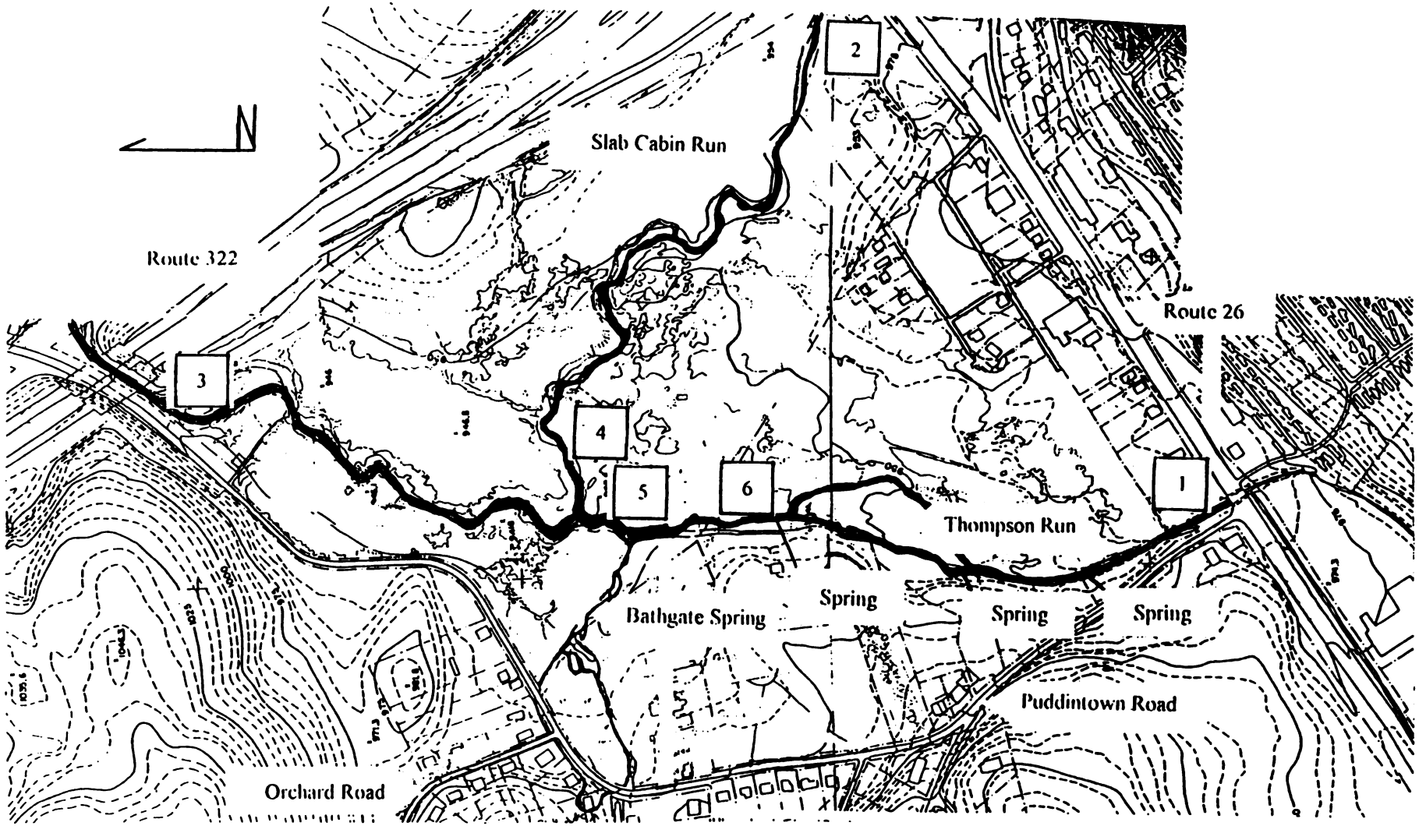


Fig 1. Study site. Locations of macroinvertebrate sampling stations are indicated by numbers.

impaired). Macroinvertebrate data collected from a station on Big Fishing Creek, Clinton County, PA, upstream from Lamar, were used as a reference with which to evaluate each station sampled.

Fish were collected in three individual stream reaches. Thompson Run extended from the mouth at Slab Cabin Run, upstream to the bridge at East College Ave. Lower Slab Cabin Run extended from the bridge at Puddintown Road, upstream to the confluence with Thompson Run. Upper Slab Cabin Run extended from the confluence with Thompson Run, upstream to the bridge at East College Ave. (Fig. 1). Between 5-14 August 1997, the entire lengths of Thompson Run and Slab Cabin Run within the Marsh were sampled with a direct current backpack electrofishing unit (125 v). Two passes were made. On the first pass, all trout were marked with a temporary finclip, weighed, and measured. On the second pass, at least 50 m of each reach, beginning at the downstream boundary of the reach, was resampled to estimate numbers of marked and unmarked trout. If less than 40 trout were collected in the first 50 m, electrofishing continued until 40 trout were collected or until 200 m had been resampled. Non-trout fish species were collected, identified, and counted in the first 50 m. Separate density and biomass estimates were made for trout collected from each of the three stream reaches.

Channel morphology and stream habitat variables were measured at transects set perpendicular to stream flow. Transects were established every 30 m along the entire lengths of Thompson Run and Slab Cabin Run within the Marsh. The gross habitat at each transect was characterized as riffle, glide, or pool. At each transect, stream width was measured and presence or absence of fish cover and bank condition (stable or eroding) was noted for both the left and right banks. Stream depth, the presence or absence of fish cover, and substrate type were determined at three equally-spaced instream points along each transect.

The location of all springs entering both stream was recorded as linear distance from the mouth of the stream. Stream discharge was measured in June and October 1997 at East College Ave. on Thompson Run and Slab Cabin Run, at the confluence of Bathgate Spring and the small tributary from Orchard Road, and at Puddintown Road on Slab Cabin Run.

Wetlands Inventory

The Penn State Cooperative Wetlands Center (CWC) has developed a standard sampling protocol for reference wetlands (Brooks et al. 1996), and has been monitoring parts of Millbrook Marsh since 1994. Overall, the CWC has established over 65 reference wetlands in Pennsylvania, of which four reference wetland areas have been established and measured in the Marsh; Site #28 - Millbrook, Site #56 - Farm 12, Site #57 - Thompson Run, and Site #64 - State College High. Sites #56 and #57 were first studied by the CWC in 1997. The fourth site, #64, was added in May 1998 as part of the Adopt-a-Wetland Program for Pennsylvania High Schools, so data have not yet been compiled or analyzed. These sites represent different subclasses of wetland habitat according to the Hydrogeomorphic (HGM) Approach (Brinson 1993, Smith et al. 1995). The HGM classification system emphasizes landscape position and water source as classifying variables. A more widely used wetland classification system is the one used by the National Wetlands Inventory (NWI) based on Cowardin et al. (1979), which focuses on water regime and vegetation type. The CWC has modified the HGM classification system for applications in Pennsylvania (Brooks et al. 1996) and uses it in combination with NWI to describe a wetland type. The most current classification key is available from the CWC, but a recent version was published in Cole et al. (1997). The CWC also classifies sites as to level of disturbance based on the condition of the vegetation, water quality, and surrounding landscape.

Monitoring followed the standard sampling protocols of the CWC (Brooks et al. 1996), which include establishment of a grid to survey relative elevations and to locate plant plots and soil pits, installation of one or more shallow wells to monitor hydrology, analysis of soil texture and organic matter, basic water chemistry analyses, and a profile of potential use of wetland wildlife habitat. In

addition, CWC personnel collected data on wetland macroinvertebrates (Site #s 56 and 57) and birds (centered on Site #28, but including much of the Marsh).

Macroinvertebrates were collected at Sites 56 (3 July 1997) and 57 (11 July 1997)(R. Bennett). Site 56, Farm 12, was sampled by sweeping an aquatic D-frame net in pools of standing water, and using a 9-cm benthic soil corer in saturated sediments. For Site 56, data from the pools consisted of 4 composited samples from 5 m x 5 m plots. Data from the saturated soil represents only one sample, as others are still being identified. In Site 57, Thompson Run, the backwater pools of the stream were sampled with the D-frame net, and the saturated sediments were sampled with the corer. For Site 57, there were 5 composited samples taken from a 130 m reach.

Setting and Inventories

Political Setting

The Millbrook Marsh Nature Center, located at 614 Puddintown Road in College Township, is centrally located in the urbanizing communities in and around State College, Centre County, Pennsylvania. It is a relatively large and unique aquatic ecosystem. The largest portion of Millbrook Marsh Nature Center was previously owned by the Clover Highlands group and transferred to The Pennsylvania State University with the assistance of The ClearWater Conservancy. The University placed this property, approximately 20 hectares (50 acres) of wetlands and adjacent uplands, together with the adjoining 5-ha (12-acre) farm, known as "Farm 12", under the jurisdiction the Centre Region Parks and Recreation Authority for a 35-year lease period, with options to renew. Some parts of Millbrook Marsh, including a calcareous fen, are presently in private ownership. A Millbrook Marsh Advisory Committee, was established in 1997 to discuss and decide upon issues and management practices regarding the site. The Committee's membership is representative of the diversity of potential user groups.

Historical and Cultural Setting

Centre Furnace Chimney, in use by 1792, can be seen near the junction of East College Avenue and Porter Road. The Centre County Historical Society is housed in the historic Centre Furnace Mansion across Porter Road. In the late eighteenth century, iron was found in the surrounding area. At that time, the initial importance of the Centre Region was the wood from the forests. Charcoal production took place in furnaces such as the one here and in others in the vicinity.

After the wood had been cut, farming became the chief occupation. The area surrounding Millbrook Marsh historically has been a farming community and there are several original farms in the Bathgate neighborhood in addition to Farm 12 at the Millbrook Marsh Nature Center. The Millbrook Marsh Nature Center includes lands formerly belonging to the McFarlane, Fisher, Osmon, and Eaters families in the 1870s. Kenneth Walker's family farm along lower and upper Slab Cabin Run was active from the late 1800s until it was removed during construction of the Mount Nittany Expressway.

The barn at Farm 12, probably rebuilt after a fire in the 1930s, is a good example of the classic Pennsylvania forebay bank barn. The fields and pasture surrounding the barnyard and farmhouse are still separated by hedgerows typical of farms in the past. The main tractor path leads north from the barn to Puddintown Road. There were several livestock sun shelters located in the pastures, though they are no longer in evidence.

By the early 1930s, Thompson Spring was developed into a winter sports park with a skating and swimming lake, from contributions of the Pennsylvania State College classes of 1927 to 1931. The plan included an arboretum and surrounding lands on both sides of East College Avenue, although it was never completely finished.

Prior to 1981, 17 ha (29 ac) were farmed for vegetables in the northeast corner of Millbrook Marsh, where a metal quonset hut remains. The vegetable farm included crops on both sides of Slab Cabin Run, and remnants of a foot bridge crossing still remain. Since the farm was sold to accommodate the Mount Nittany Expressway, most of the fields have reverted to shrubs, including invasive species. In the recent past, the Farm 12 acres have been used by Penn State's College of Agricultural Sciences for grazing horses.

Today, Millbrook Marsh is bordered on two of four sides by urban development; Routes 322 and 26 (Maps 2 and 3). Puddintown Road borders the site along the western and northern boundaries

with an upland buffer, bordered primarily by residences. Springs emerge from the adjacent private farmland behind the residences. There is one commercial site, a small dairy distribution facility, across Puddintown Road from the Farm 12 building complex. Also on the western side of the road, there is a well established residential neighborhood - Bathgate. Across Puddintown Road and over the hill from the private farm is a stormwater detention pond, designed to hold the stormwater runoff from the University land, particularly the parking areas and construction sites adjacent to the Bryce Jordan Center. The southern boundary includes some residential housing behind the commercial development along Route 26. Along this edge of the marsh are found a variety of commercial establishments. Route 26, known locally as East College Avenue, includes small businesses, restaurants, a convenience store, gas station, hotel, and the College Township Municipal Building.

Parts of the marsh have been covered with fill to make possible some of the development, including the small residential section between the commercial development of East College Avenue and the wetland. A sanitary sewer interceptor line traverses the property, but the actual installation date was not determined. There are both commercial and residential developments on the other side of East College Avenue, including a car dealership and a building supply company, as well. At times of heavy precipitation and flooding in particular, the runoff from these sites appears to have a significant impact upon Millbrook Marsh.

The remaining side, the eastern border of the site, is bounded by a paved bikeway and footpath leading from the northeast corner of Millbrook Marsh under the Route 322 overpass to the southeast corner. Downstream of Millbrook Marsh, to the north, the path continues along Puddintown Road to Spring Creek Park. The path also serves as a connection to and beyond Slab Cabin Run Park, which is upstream on the other side of East College Avenue, with its remnant stands of oak, maple, and basswood trees. Beyond the path is the Mount Nittany Expressway (or Route 322 Bypass), a 4-lane highway, and just beyond that is the developing Clover Highlands neighborhood, including some commercial development, primarily office buildings (Map 2).

As a means of tracking land use and land cover changes to Millbrook Marsh over time, the Project Team acquired historic high-altitude, aerial photography for six dates, 1948, 1961, c1960s, 1974, 1986, and 1994. We examined the photographs under magnification to discern these changes, but one can determine the general patterns of land use change by comparing the six frames displayed in Photo 2. Based on our examination, we describe the changes as follows.

In 1948, both sides of the lower portion of Slab Cabin Run and the upper portion were farmed (cropped). Woody cover was maintained along the west side of Thompson Run. Scattered trees were seen along all streams. There was a single patch of trees on the east side of Thompson Run opposite from the Niebel property. There was emergent marsh on the east side. The riparian depression on Farm 12 remained wet, but was farmed up to the edge. The southern portion of the fen had not been filled in. Few houses bordered Puddintown Road, and the Bathgate development had not been constructed. Some residential and commercial development had occurred along E. College Ave. No major utility lines appear to cross the site at this time.

In the 1961 photograph (20 April 1961), the streams and wetlands are in near flood state providing a good view of the drainage patterns and floodplains. Farming was still prevalent on both sides of lower Slab Cabin Run, but was reduced on the south side of upper Slab Cabin Run. The Bathgate neighborhood had begun to develop, and there is evidence that the major powerline was in place. The fen area had not yet been filled. The c1960s photograph was taken during a drier season of the year, but shows similar trends.

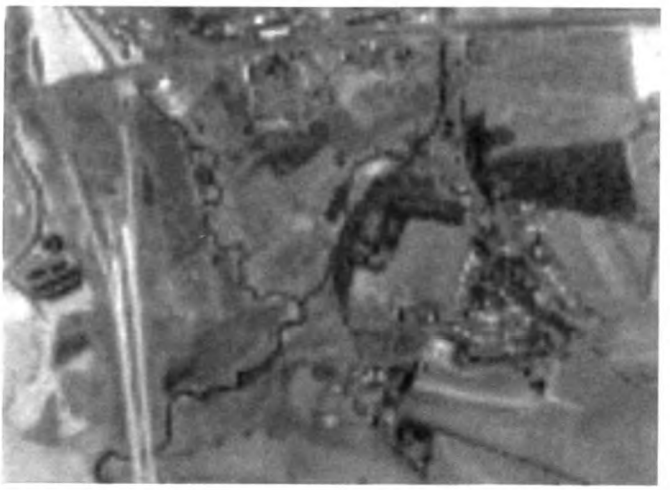
By 1974, intensive farming was still occurring along lower Slab Cabin Run. A farm road crossing over upper Slab Cabin Run is evident, although cropping pressure seemed somewhat reduced. The remnants of that stream crossing are still evident today as concrete culverts. Woody growth

Photo 2. Historic aerial photographs of Millbrook Marsh and vicinity documenting changes in land use and land cover from 1948 to 1994.

1994

c1960

1986



1961

1974

1948

appears to have matured, but its extent had not increased dramatically. The major powerline is still obvious. A plume of fill at the south end of the marsh encompassing part of the fen area is apparent. Some additional fill and development off E. College Ave. near the current College Township Municipal Building also can be seen. The old College Township Municipal Building had been constructed in the late 1960s. The University Sewage Treatment Plant near Thompson Spring and increased development along E. College Ave. can be seen.

In 1986, the Rt. 322 Bypass (now Mt. Nittany Expressway) has been partially constructed, thus eliminating the farm and associated activities. Some additional woody cover is evident on the fen fill and in some of the farm fields, but its extent is not drastically different. Either farming, or more likely grading of fill from the highway, is evident along lower Slab Cabin Run and the north side of upper Slab Cabin Run. Additional filling of the wetland has occurred near the site of the new College Township Municipal Building.

By 1994, the Mt. Nittany Expressway was completed and the new College Township Municipal Building was in place (1993). In the former farmed areas, significant woody cover can be seen, particularly along lower Slab Cabin Run, north of upper Slab Cabin Run, and along the lower portions of Bathgate Spring Run near Farm 12. The original woody cover along the west side of Thompson Run has remained and matured. Scattered clumps of shrubs are now seen in the interior core area of the marsh between the two streams, whereas the wetter areas of the fen have few shrubs. Invasion of woody plants into emergent wetlands can be an indicator of drying conditions.

Over the past 50 years, portions of Millbrook Marsh have been notably disturbed, some by historic agricultural activities, some by more recent fills. Other portions have remained relatively stable, particularly the wetter zones, at least when viewed from an aerial perspective. The maturation of woody vegetation along the riparian corridors post-farming was expected, and may enhance the value of the site for wetland and riparian species. The invasion of woody species, particularly aggressive and exotic shrubs (see later section of this report), in portions of the emergent wetland could be a warning sign of hydrologic change. This aspect should be monitored carefully in the future.

Ecological Setting

Millbrook Marsh Nature Center is comprised of more than 20 ha (50 ac) of wetland that includes palustrine scrub-shrub and emergent wetland, calcareous fen, upland borders composed of early successional brush and forest, and about 5 ha (12 ac) of pasture and farmland with interspersed hedgerows for a total of 30 ha (62 ac)(Photo 3A and 3B). The wetlands are supported by sources of both surface water and groundwater. Two important streams in the Spring Creek Watershed merge in Millbrook Marsh, giving the site a distinct shape when viewed from the air (Map 2, Photo 2). The smaller of the two, Thompson Run flows from Thompson Spring located above the Duck Pond at the intersection of East College Avenue and University Drive near the University Wastewater Treatment Plant. Slab Cabin Run, the larger stream, drains a much larger area of the watershed beginning on the forested slopes of Tussey Mountain above Pine Grove Mills. Slab Cabin Run flows through agricultural lands in Ferguson and Harris Townships before winding its way through College Township passing under South Atherton Street near its intersection with University Drive and Branch Road.

Numerous springs deliver a plentiful supply of groundwater to Millbrook Marsh. The majority of these springs discharge either along the forested southern edge of the site or along Thompson Run. Two major springs discharge in the Bathgate area on the northwestern corner, flowing under Puddintown Road, and then into the Marsh (Map 4).

Photo 3A. Aerial photograph of Millbrook Marsh Nature Center looking east, 2 July 1998.

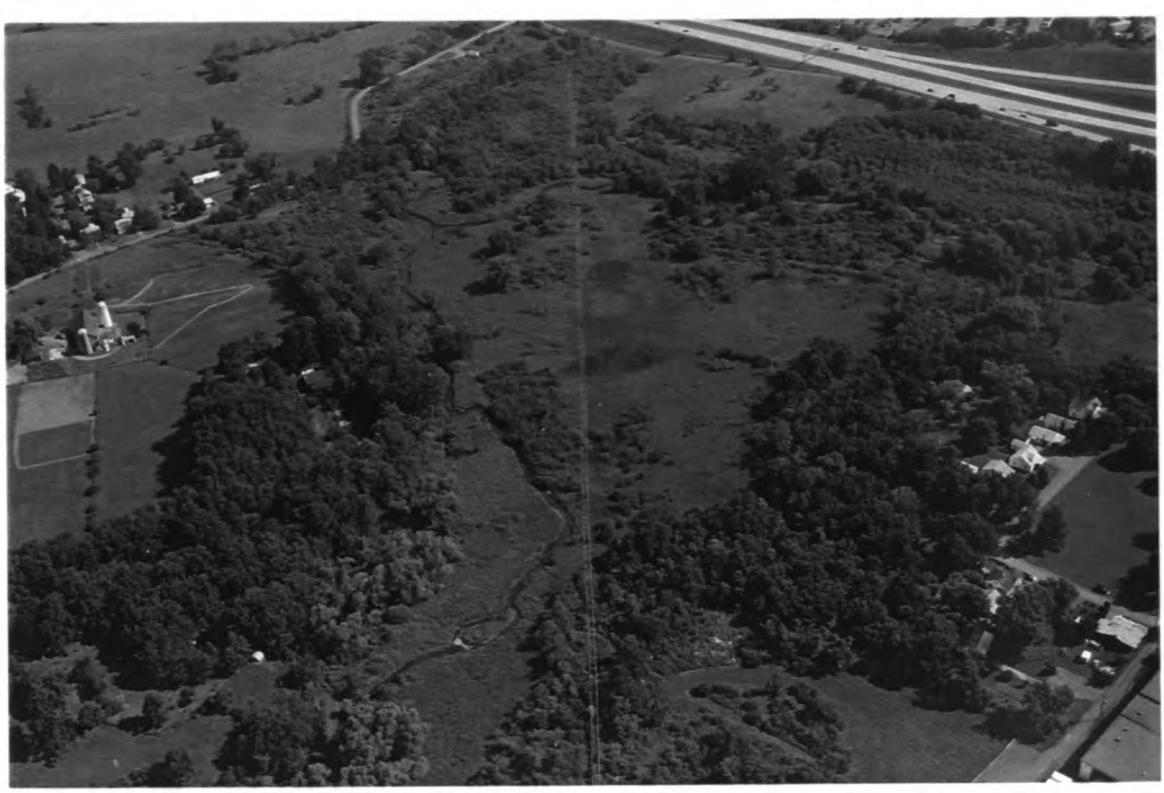


Photo 3B. Aerial photograph of Millbrook Marsh Nature Center looking north, 2 July 1998.

There is a fairly wide range of disturbance levels in Millbrook Marsh, ranging from minimal to severe (Photos 3A & 3B). One area of less disturbance contains mostly palustrine emergent wetland and is approximately 6 ha (15 ac) in size. This portion of the marsh is bounded by Slab Cabin Run on the east, Thompson Run on the west, and a treeline north of the housing development along East College Avenue to the south. It is dominated by cattails (*Typha latifolia*), sedges (*Carex* spp.), and rushes (*Scirpus* spp.). Adjoining this area, but on private property, is the calcareous fen, one of the rarest types of ecological communities in Centre County (Stack et al. 1991, Western Pennsylvania Conservancy 1995). This area of special concern was previously purchased by the Niebels, whose property and home adjoin the Marsh, to protect it from development (B. Niebel, pers. comm.). It is dominated by sedges and supported by a steady flow of groundwater filtering through limestone bedrock, with numerous small springs emitting water along the southern edge of the fen. At this edge, there is a distinct boundary between fen and upland vegetation. The spring water flows northward, supporting the fen vegetation. It progressively fades to become indistinguishable from the remainder of the emergent wetland, and as such, there is no clearly visible boundary between the fen and the emergent wetland on the northern edge. As many as 10 species of special concern have been reported for the site, although only two were reconfirmed within the past 10 years (Western Pennsylvania Conservancy 1995). Additional rare species are believed to exist and could be revealed by further study. A portion of the calcareous fen has been covered with fill (FHA and PennDOT 1981)(see Photo 2 and accompanying description), but the fen persists nonetheless.

An area with more disturbance occurs with boundaries of Slab Cabin Run on the west side and the paved path and Route 322 to the east. It is approximately 6 ha (15 ac) in size and was farmed in past years as previously discussed. The wetland consists mostly of shrub species such as alder (*Alnus* spp.), honeysuckle (*Lonicera* spp.), and dogwoods (*Cornus* spp.) intermixed with several large elm (*Ulmus* spp.), and black willow (*Salix nigra*) trees, as well as grasses and grass-like species (Map 6).

Thompson Run enters the site at the southwest corner and converges with Slab Cabin Run in the center of the Marsh. Population increases in the State College region and continued development are causing increases in stormwater inputs into Thompson Run. This has resulted in some scouring of the creek bed, causing increased siltation further downstream. Water velocity increases due to the scouring, which in turn results in more scouring. Turbidity can be high, especially during storm events. Due to these factors, fish populations may have decreased, and some fish species may no longer be spawning in this area of Thompson Run, as they were as recently as 5 years ago (N. Deno, local resident, pers. comm.) According to local anglers, fish populations may have gradually decreased in Slab Cabin Run over the past 10 years. A comparison of aquatic macroinvertebrate communities sampled in the late 1970s for the Mount Nittany Expressway project versus samples taken for this study, suggests that conditions are slightly to moderately impaired, with few changes over the 20-year period.

Hydrology

The hydrology of Millbrook Marsh is dominated by surface water from two streams, Slab Cabin Run and Thompson Run, both classified as cold water fisheries that support trout. A map depicting the hydrologic regime (Map 4) has been compiled from various sources, including the Federal Emergency Management Agency's floodplain map and direct observations. Millbrook Marsh serves a flood control function by storing surges of stormwater or meltwater from further up the watershed, and thereby reducing peak flows and crest levels further downstream. During these flooding events, the marsh vegetation helps filter out sediments and potential contaminants contained in the stormwater, although this capacity may have been exceeded. It also functions as a groundwater discharge area for many springs.

The general hydrology of the Millbrook area is described here with a focus on streams and springs. Hydrographs generated from shallow wells at three reference wetlands are discussed in the section on Wetlands and Vegetation. Two major springs exist outside of the site, on the other side of Puddintown Road, in the Bathgate neighborhood. Bathgate Spring is on the northeast side of Orchard Road, contained in a springhouse. Another flows out of the ground at the end of Bathgate Drive, on the Bathgate Farm. These springs contribute to the marsh a continuous stream of water which enters the site along the bend in Puddintown Road. At the confluence of the two springs is an area where the water table is very high, resulting in persistent groundwater saturation. This section contains emergent and shrub wetlands located on the original Farm 12 acreage. At this time, Bathgate Spring Run is one of the healthiest of the riparian-wetland areas on the site, with little or no undercutting of the streambank, and no scouring of the stream bottom. It is the only stream on site that is not affected significantly by urban stormwater surges.

Another major spring area lies outside of the boundary of the Millbrook Marsh Nature Center, though it is part of Millbrook Marsh. A concentration of springs is found along the forested south edge of the marsh, near the west and north ends of Watkins Road and Shoferd Lane. These springs discharge through the limestone bedrock, causing the ground to be consistently saturated by water with an alkaline pH level. This important source of groundwater supports a calcareous fen, with its unique and rare community of plant species. Other springs found throughout the marsh include several along Thompson Run, and one at the east and north end of Shoferd Lane.

The water contributed to the marsh from springs varies in percentage at different times. In June of 1997, the flow leaving Millbrook Marsh at Slab Cabin Run equaled a total discharge of 21.48 cubic feet per sec (cfs) (Fig. 3). About 7% of that came from Bathgate Spring. About 1 cfs (0.46 %) originated from smaller springs throughout the site. This changed substantially by October. After the dry summer, the total discharge was 9.67 cfs, and 21% of the water was contributed by Bathgate Spring and the other unmeasured springs. The amount of water contributed by springs was reduced to only 0.51cfs, a 9% drop, while the reduction in stream flow was 11.3 cfs, a 40% drop (Fig. 3).

Stormwater. Wetlands associated with streams and rivers often provide a flood control function by dissipating and temporarily storing natural and stormwater flows. This stormwater, if not managed carefully however, can also cause significant damage to wetlands and riparian corridors by overwhelming the natural capability of a site. This results in a reduced flood control function. Substantial disturbance appears to have occurred in Millbrook Marsh, as evidenced by the observations of adjacent property owners and long-time residents (N. Deno, B. Niebel, pers. comm.) and by examining the stream characteristics. Surveys conducted in 1997 of reaches of Slab Cabin Run and Thompson Run within Millbrook Marsh yielded evidence that high stream flows attributable to stormwater runoff have negatively influenced the morphology of both streams. Careful consideration should be given to managing stormwater inputs into the marsh from the surrounding watershed to avoid further degradation.

In a more natural system, there would be few or no point source entries of stormwater. Instead there would be overland sheet flow and an overall, and in most cases relatively gradual, rise and fall in stream flow. This is not the situation at Millbrook Marsh where there are multiple stormwater outlets throughout the site and into the inflowing streams (Map 4). Many are located outside the bounds of the Millbrook Marsh Nature Center, but are still within Millbrook Marsh. A major input of stormwater flows into Thompson Creek before it crosses to the north side of East College Avenue. This has been a major cause of scouring and bank erosion observed in Thompson Run. One of the detrimental aspects of stream bed scouring is the lowering of the water table. Further downstream, the result is an increase in silt deposited on the stream beds of Thompson Run and Slab Cabin Run. Thompson Run also has two stormwater outlets near East College Avenue, the point at which it enters the south western corner of the Marsh (Photo 4A and

4B). The rip-rap seen in Photos 4A and 4B serves as a basking area and probable hibernaculum for snakes (K. Tamminga and G. Roth, pers. comm.).

Two more stormwater entry points are located at the southeastern corner of Millbrook Marsh. One is located in the headwall of the E. College Ave. bridge over Slab Cabin Run near the upper parking lot of the College Township Municipal Building (Photo 5A), and one is at the lower level parking area, including runoff from the parking lot and maintenance area. This runoff flows through a swale into the floodplain (Photo 5B).

Approximately 60 m (200 ft) from E. College Ave. is another stormwater outlet flowing into Slab Cabin Run. Another stormwater outfall is located along the boundary adjacent to the Route 322 Bypass about half way between Puddintown Road and East College Avenue. It is on the north side of the paved footpath, and drains into a short swale before dispersing in the upland vegetation.

Water Quality. There is evidence (high percentage of unstable banks) that high stream flows attributable to stormwater runoff have negatively influenced the morphology of Slab Cabin Run. The macroinvertebrate communities at 5 of 6 stations throughout the marsh reflected moderate degradation, which is probably due to impaired water quality associated with upstream urban and agricultural runoff. It is unlikely that the present aquatic communities in the marsh can be sustained if the volume of incoming stormwater increases or the quality of incoming stormwater declines. Adoption of best management practices for stormwater in the watershed is critical for the long term health of the marsh.

Besides the mixture of pollutants in stormwater entering Thompson Run from road runoff, there is a substantial sediment load originating from the ditch that conveys stormwater from the discharge pipes to the Duck Pond. Stabilization of this ditch would greatly benefit the aquatic communities in the marsh, and is scheduled for completion in 1998 (joint project between the State College Borough and the Pennsylvania State University).

The U.S. Environmental Protection Agency's Rapid Bioassessment Protocol III (RBP III), described later in the stream fauna section, was used to determine the condition of the macroinvertebrate community of Millbrook Marsh, and is a good indicator of aquatic health. Overall, RBP III suggests a moderate departure from good water quality for streams within Millbrook Marsh.

Stream Fauna

Stream Macroinvertebrates. Both Thompson Run and Slab Cabin Run support a moderately depauperate macroinvertebrate fauna. Midge larvae (Chironomidae) and blackfly larvae (Simuliidae) were the most common taxa in Thompson Run, while chironomids and hydropsychid caddisflies were most common in Slab Cabin Run (Tables 1 and 2). Slab Cabin Run had a richer invertebrate fauna, with an average taxa richness of 17.2, as compared to 11.0 in Thompson Run.

RBP III showed slight to moderate disturbances in the macroinvertebrate community (Table 3). All stations except Station 2 were "Moderately impaired," while Station 2 was "Slightly impaired." The scrapers/filterers, EPT/Chironomidae, and % dominant taxon indices suggest a generally unbalanced community. Low values for scrapers/filterers at all stations except Station 4 indicate a predominance of filtering collectors and suggest a disproportionate amount of fine particulate organic matter suspended in the water column. An overabundance of pollution-tolerant chironomids was shown by the EPT/Chironomidae index. The most dominant taxon made up a large portion of the total macroinvertebrate assemblage at each station (% dominant taxon). Ideally, the most dominant taxon should contribute less than 20% to a healthy, balanced macroinvertebrate community.

Photo 4A. Examples of stormwater input into Millbrook Marsh - Road runoff from E. College Ave. and Puddintown Road at the Thompson Run bridge, east side.

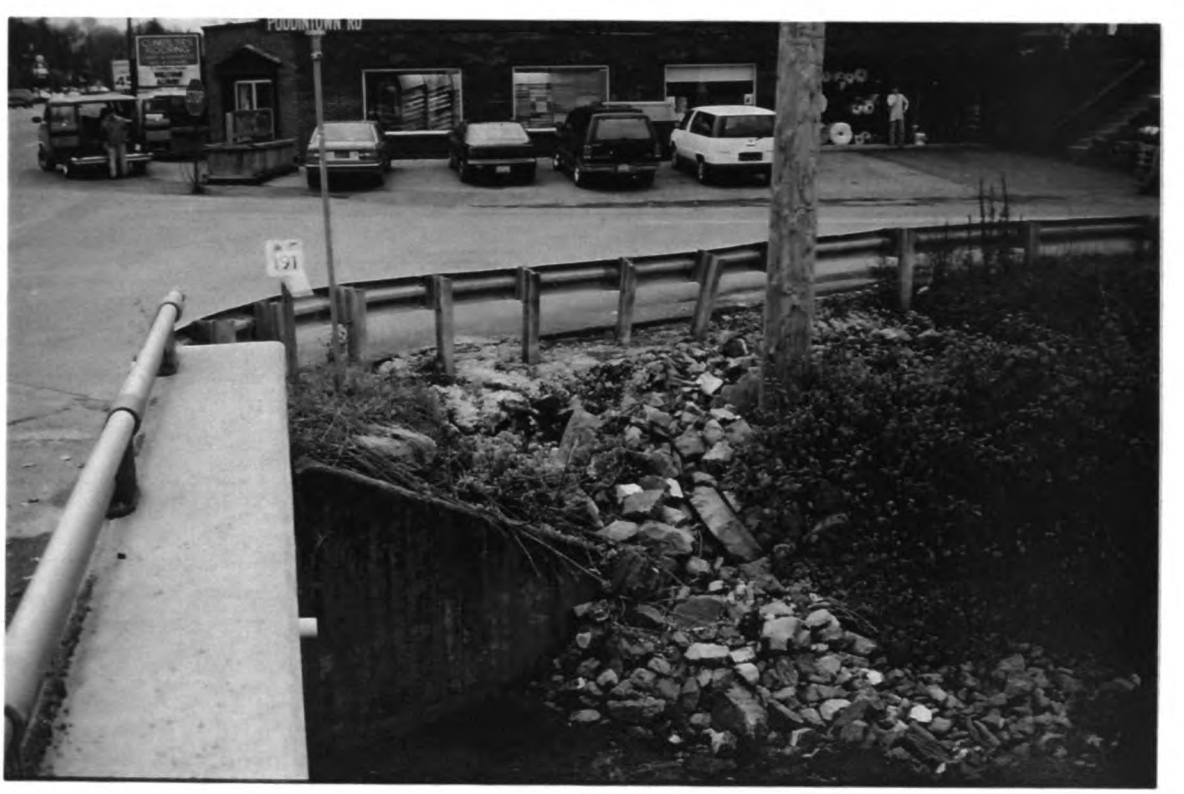


Photo 4B. Examples of stormwater input into Millbrook Marsh - Road runoff from E. College Ave. and Puddintown Road at the Thompson Run bridge, west side.

Photo 5A. Examples of stormwater input into Millbrook Marsh - Parking area runoff from the College Township Municipal Building.

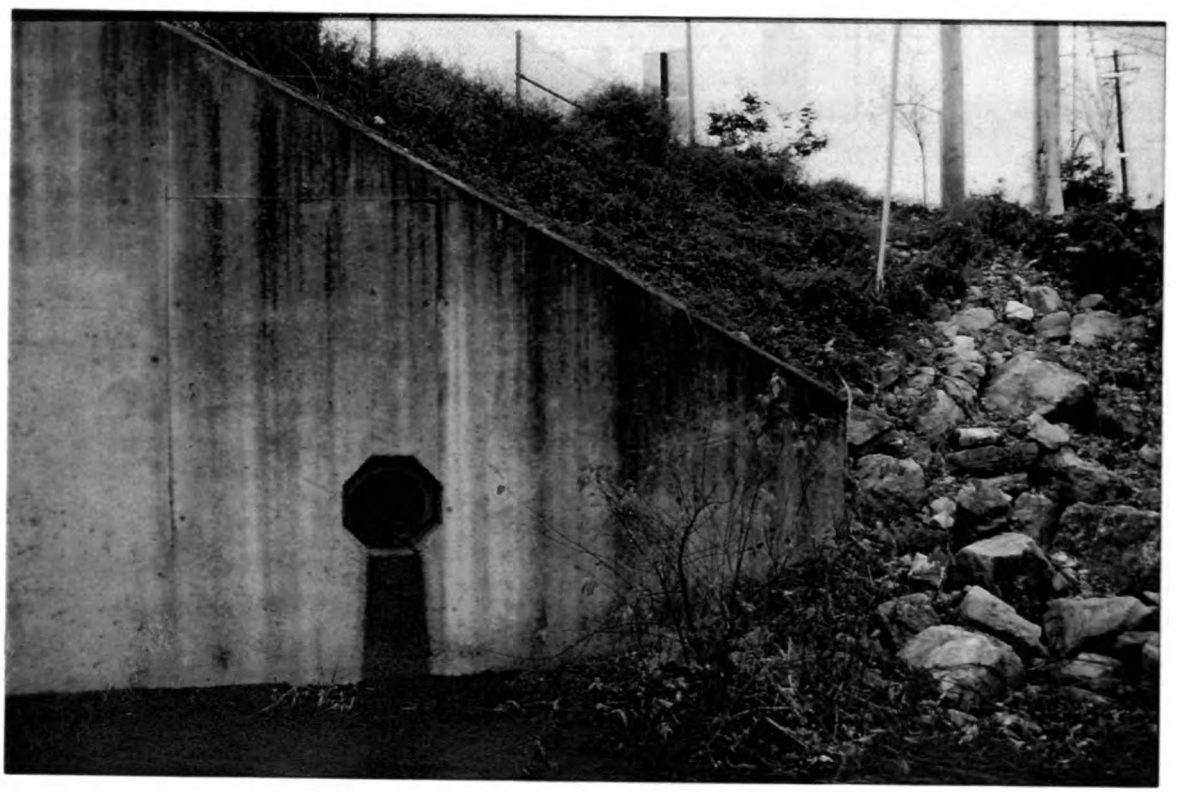
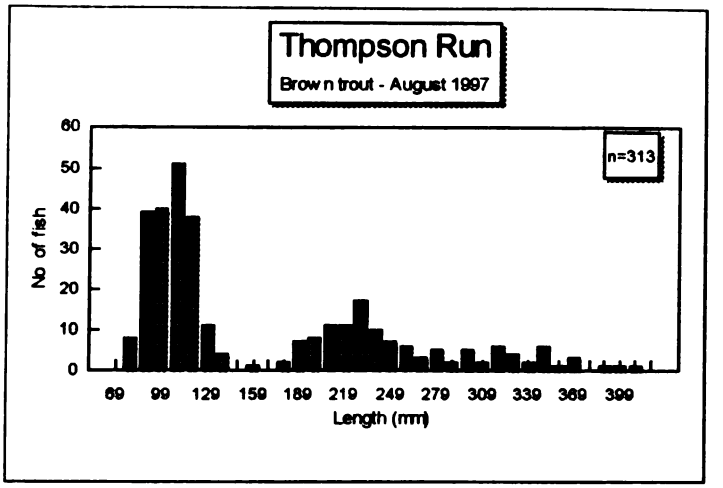
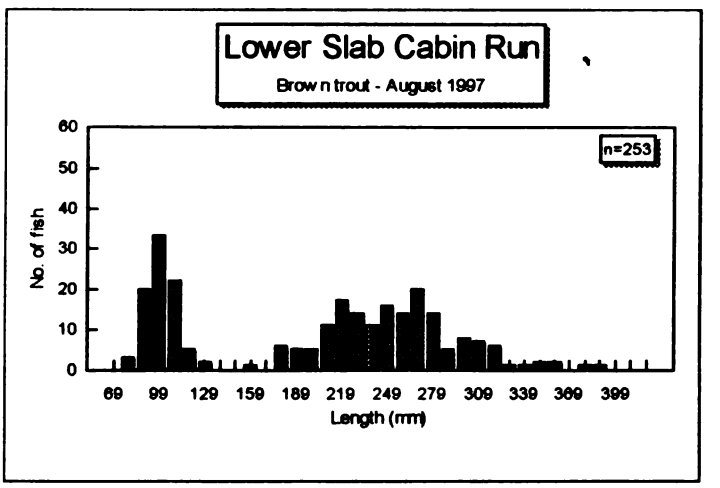


Photo 5B. Examples of stormwater input into Millbrook Marsh - Culvert outfall into Slab Cabin Run from E. College Ave. near the College Township Municipal Building.

(a)



(b)



(c)

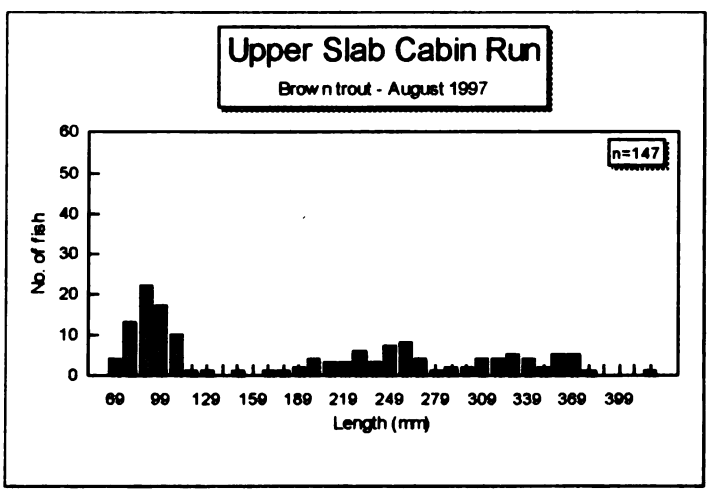
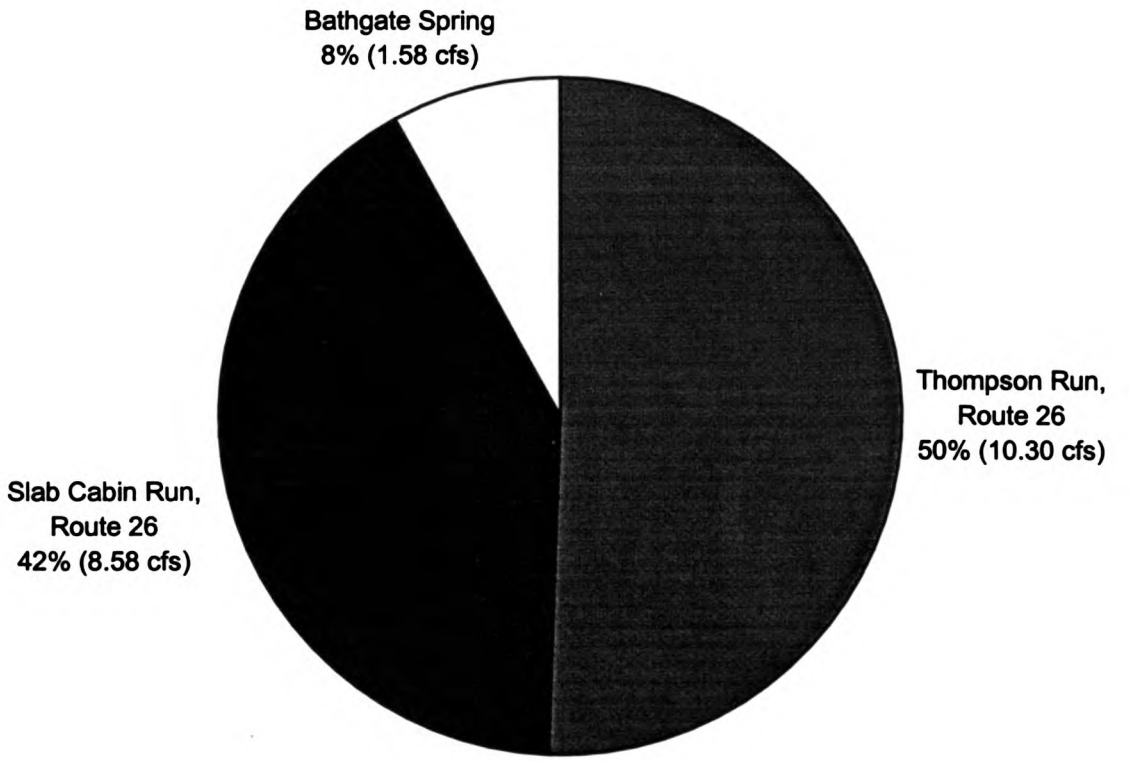
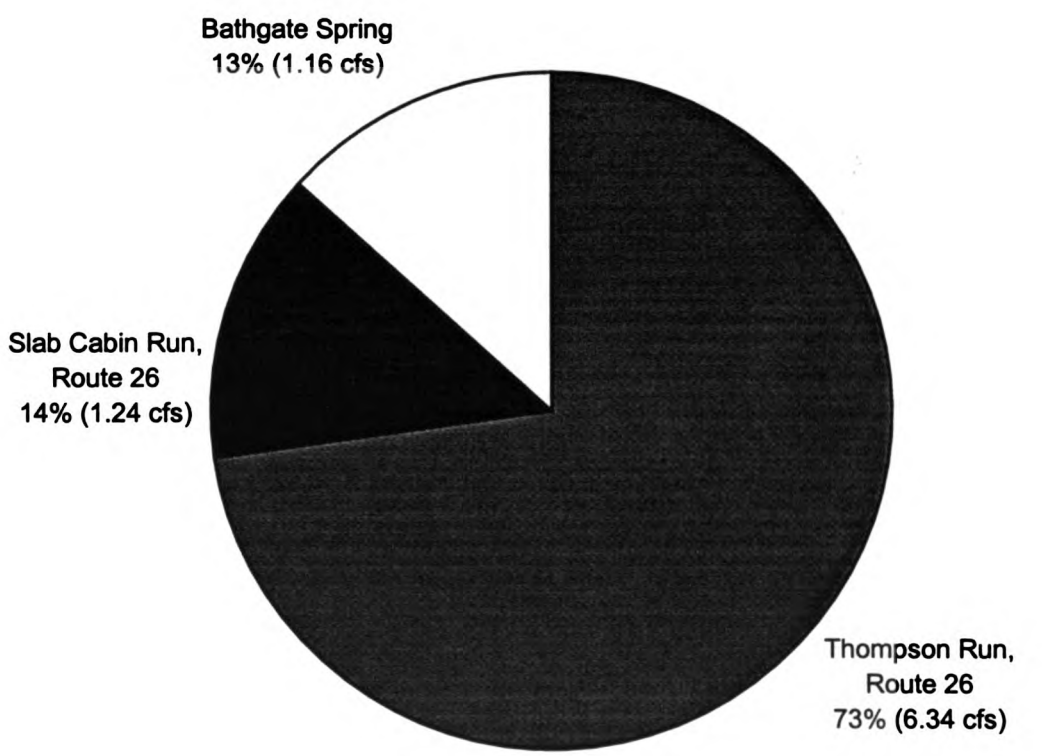


Fig. 2. Length-frequency distributions for brown trout from (a) Thompson, (b) Lower Slab Cabin, and (c) Upper Slab Cabin Runs (Files: TR97.WK4, SCRD97.WK4, SCRU97.WK4).

Figure 3: Stream discharge data (cfs) for 3 stations in Millbrook Marsh



June 13, 1997



October 21, 1997

Table 1. Millbrook Marsh macroinvertebrate fauna, collected July 22, 1997; number of specimens per taxon per 300-organism sub-sample. Numbers below stream names correspond to station locations on Figure 1. One station consists of 3 composited Surber samples. File: MMBUGS.XLS.

	Thompson Run			Slab Cabin Run		
Station number	1	5	6	2	3	4
Insecta						
Ephemeroptera						
Baetidae						
Baetis sp.	23	8	20	16	2	3
Tricorythodae						
Tricorythodes sp.						3
Trichoptera						
Hydropsychidae				1	4	
Ceratopsyche sp.		4	9	123	57	11
Cheumatopsyche sp.				4		20
Hydropsyche sp.		1	2	18		2
Hydroptilidae						
Ochrotrichia sp.	2	3	3	4	8	2
Psychomyiidae						
Psychomyia sp.				5		
Diptera						
Ceratopogonidae						
Forcipomyia sp.						4
Chironomidae	96	131	161	45	88	156
Empididae						
Chelifera sp.		1				
Muscidae	15	2	7			
Nymphomyiidae						
Nymphomyia sp.	1					
Simuliidae	143	103	72	2	138	5
Tabanidae						
Chrysops sp.						6
Tipulidae						
Antocha sp.		2	4	44	4	3
Coleoptera						
Dytiscidae						
Agabus sp.		1				
Elmidae						
Dubiraphia sp.				2		1
Optioservus sp.				7	1	42
Stenelmis sp.				2		14
Psephenidae						
Ectopria sp.						1
Psephenus sp.				21		1
Crustacea						
Amphipoda						
Gammaridae						
Gammarus minus	2	9	3		3	

Table 1 (cont.).

	Thompson Run			Slab Cabin Run		
Station number	1	5	6	2	3	4
Talitridae						
Hyalella azteca						6
Isopoda						
Asellidae						
Asellus sp.				6		8
Turbellaria						
Tricladida						
Planariidae	1	5		2		1
Cura foremanii		2				
Hymanella retenuova		10	1			
Oligochaeta	14	18	23		3	10
Gastropoda						
Basommatophora						
Physidae						1
Planorbidae	2	1				
Bivalvia						
Veneroida		3				
Pisidiidae						
Pisidium sp.	1					
Total no.	300	304	305	302	308	300
Taxa richness	11	17	11	16	10	21

Table 2. Millbrook Marsh macroinvertebrate fauna, collected October 20, 1997; number of specimens per 300-organism sub-sample. Numbers below stream names correspond to station locations on Figure 1. One station consists of 3 composited Surber samples. File: MMBUGS.XLS.

	Thompson Run			Slab Cabin Run		
	1	5	6	2	3	4
Insecta						
Ephemeroptera						
Baetidae						
Baetis sp.	51	21	22	7	8	3
Heptageniidae						
Stenonema sp.				15		
Trichoptera						
Glossosomatidae						
Glossosoma sp.						1
Hydropsychidae						
Ceratopsyche sp.			1	57	77	3
Cheumatopsyche sp.				2	2	3
Hydropsyche sp.				29	6	3
Hydroptilidae						
Hydroptila sp.						1
Limnephilidae						
Pycnopsyche					1	
Rhyacophilidae						
Rhyacophila sp.				2		
Diptera						
Chironomidae	158	196	139	32	85	56
Muscidae	9	11	4	1	2	
Simuliidae	67	65	113	8	55	24
Tabanidae						1
Tipulidae						
Antocha sp.	1		2	16	28	7
Tipula sp.	1	2			2	1
Coleoptera						
Elmidae						
Dubiraphia sp.				7	3	6
Optioservus sp.				36	2	5
Stenelmis sp.				2		
Psephenidae						
Ectopria sp.					1	
Psephenus sp.				15		
Hemiptera				1		
Corixidae						
Trichocorixa					1	
Crustacea						
Amphipoda						
Gammaridae						
Gammarus minus		2	3		2	
Decapoda				1		

Table 2 (cont.).

	Thompson Run			Slab Cabin Run		
	1	5	6	2	3	4
Isopoda						
Asellidae						
Asellus sp.		1		19	9	12
Turbellaria	2					9
Tricladida						
Planariidae						
Cura foremanii				47		
Oligochaeta	11	11	13	1	15	155
Gastropoda		3				
Basommatophora						
Physidae			1		1	2
Planorbidae			2			
Bivalvia						
Veneroida						
Pisidiidae						9
Pisidium sp.					2	
Total no.	301	317	306	300	305	305
Taxa richness	8	9	10	19	19	18

Table 3. Summary of EPA Rapid Bioassessment Protocol III for macroinvertebrate sampling stations within Millbrook Marsh, July, 1997. Station numbers correspond to station locations on Figure 1.

	Stations						
Raw Scores:	1	2	3	4	5	6	Ref
Taxa Richness	11	16	10	21	17	11	19
Modified HBI	5.91	4.18	5.49	5.46	5.59	5.86	4.05
Scrapers/Filterers	0.18	0.36	0.02	1.73	0.08	0.24	30.50
EPT/Chironomidae	0.26	3.80	0.81	0.26	0.12	0.21	1.46
% Dominant Taxon	47.67	40.73	44.81	52.00	43.09	52.79	36.20
EPT Index	2	7	4	6	4	4	10
Community Loss Index	1.27	0.94	1.30	0.57	0.71	1.18	---
Percent Comparison to Reference:							
Taxa Richness	57.89	84.21	52.63	110.53	89.47	57.89	---
Modified HBI	68.53	96.89	73.77	74.18	72.45	69.11	---
Scrapers/Filterers	0.59	1.18	0.07	5.67	0.26	0.79	---
EPT/Chironomidae	17.81	260.27	55.48	17.81	8.22	14.38	---
% Dominant Taxon	47.67	40.73	44.81	52.00	43.09	52.79	---
EPT Index	20.00	70.00	40.00	60.00	40.00	40.00	---
Community Loss Index	1.27	0.94	1.30	0.57	0.71	1.18	---
Biological Condition Scores:							
Taxa Richness	2	6	2	6	6	2	6
Modified HBI	2	6	4	4	4	2	6
Scrapers/Filterers	0	0	0	0	0	0	6
EPT/Chironomidae	0	6	4	0	0	0	6
% Dominant Taxon	0	0	0	0	0	0	2
EPT Index	0	2	0	0	0	0	6
Community Loss Index	4	4	4	4	4	4	6
Totals	8	24	14	14	14	8	38
Bioassessment (level of impairment):	Moderate	Slight	Moderate	Moderate	Moderate	Moderate	Not impaired

The number of generally pollution-intolerant taxa (mayflies, stoneflies, and caddisflies) was low at all stations (EPT index). The Hilsenhoff Biotic Index (HBI) suggests that all stations except Station 2 are affected to some degree by organic pollution. Intermediate values of the Community Loss Index at all stations indicate moderate dissimilarity from the reference station.

Lipton (1998) compared macroinvertebrate communities for samples collected in 1997 during this study with those collected about 20 years ago. Although the location of sampling sites varied, the ecological integrity of these biological communities in the Millbrook streams appears to be similar, perhaps slightly better. The earlier samples were collected before the University's sewage treatment plant cased discharging into Thompson Run in 1983, so the macroinvertebrates were subjected to a higher load of organic pollution. More recently, increasing stormwater discharges may have prevented further recovery. Overall, the aquatic macroinvertebrate communities have remained slightly to moderately impaired. These conditions are unlikely to improve unless significant reductions in stormwater quantity and improvements in stormwater quality occur in the portions of the Spring Creek watershed that are upstream of Millbrook Marsh.

Fish. Wild brown trout (*Salmo trutta*), rainbow trout (*Oncorhynchus mykiss*), white suckers (*Catostomus commersoni*), and slimy sculpins (*Cottus cognatus*) were found in both Thompson Run and Lower Slab Cabin Run (Tables 4, 5, 6, and 7). Wild brown trout, white suckers, blacknosed dace (*Rhinichthys atratulus*), and creek chubs (*Semotilus atromaculatus*) were found in Upper Slab Cabin Run (Tables 4, 5, 6, and7).

Density and biomass estimates were made for brown trout only. Rainbow trout were either not captured during both electrofishing passes (Upper Slab Cabin Run), not captured on the second pass (Thompson Run), or only one was captured on the second pass (Lower Slab Cabin Run). Density and biomass estimates of brown trout were highest in Thompson Run (4800/ ha, 423 kg/ha; Table 5), followed by Lower Slab Cabin Run (983/ha, 106 kg/ha; Table 6) and Upper Slab Cabin Run (761/ha, 106 kg/ha; Table 7). Recruitment of young-of-the-year (1997) fish was good in all 3 stream reaches, as evidenced by the first peak in length-frequency distribution of fish 139 mm and smaller (Fig. 2). A gap in fish 139-169 mm long (1 year olds) indicates poor recruitment during 1996, most likely due to the severe flooding that occurred early that year.

Stream Habitat and Discharge

In 1997, Slab Cabin Run averaged 5.5 m (18 ft) wide and 0.3 m (1 ft) deep. It consisted of approximately equal proportions of riffle, glide, and pool habitats (Table 8). Only 36% of the bank was rated as stable. Gravel was the predominant substrate and silt ranked second.

Thompson Run averaged 4.8 m (16 ft) wide and 0.3 m (1 ft) deep. Riffles made up 55% of the instream habitat (Table 8) and 88% of the bank were rated as stable. Gravel was the predominant substrate and cobble ranked second.

In June 1997, the discharge of Slab Cabin Run leaving the marsh was 21.48 cfs and about 40% of this flow was from upper Slab Cabin Run (Fig. 3). Most of the flow in Thompson Run originates from Thompson Spring, which contributed about 48% of the flow leaving the marsh. The remainder of flow came from Bathgate Spring (7%) and 1 cfs originated from smaller springs that we did not attempt to measure.

In October 1997, following a dry summer, the discharge of Slab Cabin Run leaving the marsh was 9.67 cfs and only 13% of this water was contributed by upper Slab Cabin Run. Thompson Run contributed 66% of the flow and the remainder was provided by Bathgate Spring and other unmeasured springs. These data illustrate the importance of ground water in maintaining the aquatic communities in the marsh.

Table 4. Electrofishing data for (a) brown and (b) rainbow trout from Thompson Run. August 8 and 11, 1997. Run 1: August 14, 1997, Run 2. File: TR97.WK4.

(a) Brown trout

Length Group (mm)	Total caught (N)	Mean Weight (g)	g*N (kg)
70-79	8	4	0.16
80-89	39	7	1.38
90-99	40	14	2.83
100-109	51	16	4.13
111-119	38	18	3.46
120-129	11	20	1.11
130-139	4	25	0.51
140-149	0	0	0.00
150-159	1	41	0.21
160-169	0	0	0.00
170-179	2	57	0.58
180-189	7	75	2.66
190-199	8	81	3.30
200-209	11	98	5.45
211-219	11	110	6.15
221-229	17	126	10.88
230-239	10	148	7.50
240-249	7	159	5.62
250-259	6	192	5.82
260-269	3	215	3.26
270-279	5	230	5.82
280-289	2	258	2.61
290-299	5	282	7.14
300-309	2	315	3.19
311-319	6	341	10.35
320-329	4	396	8.02
330-339	2	420	4.25
340-349	6	442	13.44
350-359	1	380	1.92
360-369	3	517	7.84
370-379	0	0	0.00
380-389	1	660	3.34
390-399	1	640	3.24
400-409	1	700	3.54
TOTALS	313		139.72

Population estimate and 95% confidence interval (number of trout in the reach surveyed): 868, 1584, 3843
Biomass: 423 kg/hectare

Table 4 (cont.).

(b) Rainbow trout

Length (mm)	Weight (g)
106	-
112	-
139	35
149	-
150	40
152	40
157	-
157	50
161	50
166	60
167	55
426	840
452	1070

Table 5. Electrofishing data for (a) brown and (b) rainbow trout from Lower Slab Cabin Run. August 5 and 7, 1997. Run 1; August 14, 1997, Run 2. File: SCRD97.WK4.

(a) Brown trout

Length Group (mm)	Total caught (N)	Mean weight (g)	g*N (kg)
70-79	3	4	0.02
80-89	20	7	0.26
90-99	33	14	0.84
100-109	22	16	0.64
100-119	5	18	0.16
120-129	2	-	-
130-139	0	0	0.00
140-149	0	0	0.00
150-159	1	40	0.07
160-169	0	0	0.00
170-179	6	62	0.68
180-189	5	72	0.66
190-199	5	78	0.71
200-209	11	94	1.89
210-219	17	104	3.23
220-229	14	115	2.94
230-239	11	128	2.57
240-249	16	153	4.46
250-259	14	164	4.19
260-269	20	187	6.84
270-279	14	211	5.39
280-289	5	241	2.20
290-299	8	252	3.69
300-309	7	275	3.52
310-319	6	317	3.47
320-329	1	400	0.73
330-339	1	380	0.69
349-349	2	445	1.63
350-359	2	450	1.64
360-369	0	0	0.00
370-379	1	580	1.06
380-389	1	640	1.17
TOTALS	253		49.87

Population estimate and 95% confidence interval (number of trout in the reach surveyed): 355, 462, 700
Biomass: 106 kg/hectare

Table 5 (cont.).

(b) Rainbow trout

Length	Weight
148	35
152	40
157	43

Table 6. Electrofishing data for brown trout from Upper Slab Cabin Run. August 7 and 8, 1997, Run 1; August 14, 1997, Run 2. File: SCRU97.WK4.

Length Group (mm)	Total caught (N)	Mean weight (g)	g*N (kg)
60-69	4	0	0.00
70-79	13	4	0.09
80-89	22	7	0.26
90-99	17	14	0.41
100-109	10	16	0.27
110-119	1	18	0.03
120-129	1	-	-
130-139	0	0	0.00
140-149	1	0	0.00
150-159	0	41	0.00
160-169	1	-	-
170-179	1	60	0.10
180-189	2	75	0.26
190-199	4	82	0.56
200-209	3	93	0.48
210-219	3	105	0.54
220-229	6	125	1.28
230-239	3	135	0.69
240-249	7	104	1.25
250-259	8	188	2.56
260-269	4	199	1.36
270-279	1	220	0.38
280-289	2	255	0.87
290-299	2	285	0.97
300-309	4	326	2.23
310-319	4	332	2.27
320-329	5	378	3.23
330-339	4	395	2.70
340-349	2	410	1.40
350-359	5	499	4.26
360-369	5	505	4.31
370-379	1	490	0.84
380-389	0	0	0.00
390-399	0	0	0.00
400-409	0	0	0.00
410-419	1	820	1.40
TOTALS	147		34.97

Population estimate and 95% confidence interval (number of trout in the reach surveyed): 179, 251, 406
Biomass: 106 kg/hectare

Table 7. Numbers of non-trout fish species collected from Millbrook Marsh, August 14, 1997.

Species	Common name	Thompson Run	Lower Slab Cabin Run	Upper Slab Cabin Run
Catostomus commersoni	White sucker	2	2	80
Cottus cognatus	Slimy sculpin	63	38	6
Rhinichthys atratulus	Blacknose dace	0	0	10
Semotilus atromaculatus	Creek chub	0	0	2

Table 8. Summary of habitat composition in reaches of Slab Cabin Run and Thompson Run within Millbrook Marsh (File: MARSHMAP.WK4).

	% riffle	% glide	% pool	% stable bank	% bank fish cover	% instream fish cover	% substrate composition				
							boulder	cobble	gravel	sand	silt
Slab Cabin Run	27	38	35	36	32	21	6	11	42	10	31
Thompson Run	55	35	10	88	43	17	4	26	63	2	5

Soils

The soil types occurring on site are depicted in Map 5, based on the Centre County Soil Survey (Braker 1981). A list of hydric soils was developed by the local county office of the Natural Resources Conservation Service (formerly Soil Conservation Service). Along parts of Thompson Run is a swath of Opequon-Hagerstown (OhD, Map 5), a steeply sloping section with rapid runoff rates due to a grade of 15 to 25%. There is high to moderate erosion potential for this area. Depth to bedrock is shallow and there are limestone outcrops throughout.

At the junction of Thompson Run and East College Avenue, as well as most of the land surrounding the corridor of Slab Cabin Run and Bathgate Spring Run, soils consist of a hydric soil, Melvin Silt Loam (Mm, Map 5). Since the slope is merely 0 to 2%, runoff rates are very slow, as are rates of erosion. There is frequent flooding and ponding here, and the water table is seasonally high. This type of soil is commonly found in the flat floodplain of limestone valleys. To the west of Thompson Run, and on parts of the area previously known as Farm 12, is Hagerstown Silt Loam (HaB, Map 5) with a gentle 3 to 8% slope. This soil type and slope is moderately prone to erosion and runoff rates are moderate as well. Sinkholes and clay pans are not unusual for this classification found in valley floors of limestone uplands. Sections of 3 to 8% sloping Hagerstown Silt Loam are found near the Route 322 bypass as well as along the south edge of the site adjacent to East College Avenue. Some of this section, especially the area above the calcareous fen, consists of fill (Federal Highway Administration and Pennsylvania Department of Transportation 1981), seemingly of discarded concrete highway pavement. Based on our analysis of aerial photographs, the fill was deposited circa the late 1960s. It appears that groundwater is filtering through or under the fill, yet continues to support the fen vegetation of Millbrook Marsh. It is probable that the fen could benefit from removal of this fill, and possibly restored to a greater areal extent. Restoration potential will be discussed later.

Directly adjacent to the Route 322 bypass is a portion of Hagerstown Silt Loam with a slope of 8 to 15% (HaC, Map 5), yielding moderate to rapid runoff rates and erosion levels. Clay pans and sinkholes are possible here as well. Also adjacent to the bypass, is Opequon-Hagerstown with a slope of 8 to 15% (OhC, Map 5). The limitations are the same as those for Hagerstown Silt Loam, though in addition, depth to bedrock is shallow. There is a portion of Opequon-Hagerstown with a severe slope of 25 to 90% along the same edge of the site in which runoff is rapid and erosion high. This area has a very shallow depth to bedrock, and here too, clay pans and sinkholes may occur. In the triangular area between Thompson and Slab Cabin Runs is found Dunning Silty Clay Loam with a slope of just 0 to 2% (Du, Map 5). Runoff is very slow and erosion probability is slight except in flood situations. This is a hydric floodplain soil, with potential ponding, frequent flooding, and a high water table. Also in this triangular section, on both sides of Slab Cabin Run, are Lindside Soils with a 0 to 2% slope (Lx, Map 5). Lindside Soils are found often in the flat areas of floodplains in limestone valleys, and typically have hydric soil inclusions. Runoff is slow due to minimal grades and erosion occurs only in flood situations. As with the Melvin Silt Loam, Lindside has a seasonally high water table. One section along the southern edge of Millbrook Marsh is classified as Urban Land (Urb, Map 5), so actual soil identification was not possible. Runoff is rapid and sinkhole formation a possibility.

In general, due to a combination of overland water flow, seasonally high water tables, and flooding regimes of varying duration, much of the site consists of hydric, anaerobic soils. As stated earlier, portions of Millbrook Marsh have maintained relatively intact wetland functions and characteristics despite being drained or covered with fill. The full potential of Millbrook Marsh is not being realized now, but it is not irreparably damaged at this point in time.

Wetlands and Vegetation

Like most natural wetlands, the vegetation in Millbrook Marsh is diverse and responds to variable hydrologic regimes and soil characteristics. The primary vegetation types found in the marsh include palustrine emergents (PEM), palustrine scrub-shrub (PSS), calcareous fen, herbaceous and woody upland vegetation, and patches comprised of several species of invasive, non-native plants.

The hydric plant community associations include Cattail/Rush/Sedge, Black Willow/Silver Maple/Elm, and emergent Calcareous Fen (Map 6). The mesic plant community associations consist of woody (Elm/Walnut and others) and herbaceous (Goldenrod/Aster/Broomsedge and others) communities (Map 6).

There are six major types of vegetation composed primarily of non-native species: Pasture, Lawn/Yard, Crown Vetch/Turfgrass and Others, Tartarian Honeysuckle/Rose and Others, Plantation/Aboretum, and Urban areas with minimal vegetation (Map 6). These are found mostly at the outskirts of the marsh, but the Honeysuckle and Rose have spread throughout portions of the site, varying in density. They are the most invasive of the non-natives at this time, and have caused portions of the marsh to become almost impassable. These species are associated less with hydric conditions than the dogwood shrubs, which suggests that the site may be gradually drying out. Several of these problematic species growing in Millbrook Marsh warrant remedial measures so as reduce the chance of irreversible damage to the native plant communities (see section on Invasive Vegetation).

The overall wetland that is Millbrook Marsh is a complex of several hydrogeomorphic (HGM) subclasses and National Wetlands Inventory (NWI) vegetation types. Because this report focuses on the entire site, however, we have combined the plant data for reference wetland sites #28, 56, and 57 into the master list (Table 9). Surveys conducted at the fen (WPC 1995) contributed additional species. We also included listings for a few other species that were identified during informal walks through the site. We do not believe this combined master list is comprehensive, but it provides a starting point for a more thorough botanical survey. In particular, the surrounding upland habitats have not been adequately sampled. The total number of known vascular plant species in the Millbrook Marsh Nature Center and immediate surroundings is 155. Scientific and common names of plants follow, in general, Newcomb (1977), Reed (1988), and Rhoads and Klein (1993).

Though several plant species are not within the bounds of the Millbrook Marsh Nature Center, they are within the Millbrook Marsh ecosystem and deserve comment. The calcareous fen at the south edge of the marsh supports a variety of emergent wetland plants, most importantly it is habitat for several Pennsylvania state endangered and threatened species. The WPC Study (1995) found several species of endangered and threatened sedge, spike rush, and pondweed. These vascular plants are endangered due to diminishing habitat and unauthorized collection by individuals. Identification of those rare species is not provided here to help ensure their continued protection.

Specific macroinvertebrates were collected from two of the reference wetlands sites located in Millbrook Marsh, #56 Farm 12 and #57 Thompson Run. The results of this preliminary investigation are listed in Table 10. At this time, there are insufficient data to interpret the ecological integrity of wetlands in a manner comparable to that used in streams. The low oxygen environments and variable hydrologic regimes that are typical of many wetlands makes a direct comparison to stream macroinvertebrate communities improper. These data, therefore, are included as baseline information for future studies.

Reference Wetlands. Site #28 - Millbrook Marsh is located adjacent to the lower reach of Slab Cabin Run, and was identified as a Riverine Mainstem Floodplain (MF), Palustrine Scrub-Shrub/Emergent (PSS/EM) wetland that is severely disturbed, primarily due to the surrounding

urbanized landscape and high sedimentation rates, including an overhead utility line (Photo 6). There are two automatic recording wells on this site. An examination of the hydrographs (Figs. 4 & 5; for all hydrographs, measures on the y-axis are depth above (+) or below (-) ground level with "0" being ground level; horizontal leveling of the hydrograph at maximum depths below ground generally indicates the bottom of the well, not necessarily the lowest depth in the water table) shows the flashiness of water inputs to this type of wetland (one that is streamside - Fig. 5, well C6B3), but may also reflect incoming stormwater flows from both Slab Cabin Run and Thompson Run. This site is located in a somewhat drier location in the floodplain than the Thompson Run site, so that the depth to the water table is usually much deeper (typically 0.5-1 m (1.5-3 ft) except during wet seasons or flooding events. The flood peaks correspond with those of Thompson Run, but do not flood the surface to as great an extent. Note that similar peaks did not occur at Site #56, which does not flood.

Site #56 - Farm 12 is located adjacent to Bathgate Springs Run, and was identified as a Riparian Depression (RD), Palustrine Emergent (PEM) wetland that is severely disturbed due to its prior use as a pasture on the Farm 12 portion of the property (Photo 7). Only one automatic recording well is located on the site due to its small size. The hydrograph generated from the well data shows a very stable water level that hovers a few centimeters above the ground surface (Fig. 6). Any additional water from ground or surface sources flows from the outlet into Bathgate Spring Run. This is typical of riparian depressions which usually are fed by shallow ground water, and have an outlet to an adjacent stream. This wetland type rarely receives water from overbank flooding from a stream. The soil is saturated, and should be classified as a muck, with a relatively high content of organic matter that is significantly decomposed. Woody vegetation has been reduced, presumably by grazing livestock when the site was pastured. Dogwood shrubs appear to be encroaching upon the site. There is at least one outfall of a agricultural drainage tile in the site which may help maintain the extraordinarily stable water levels observed.

Site #57 - Thompson Run is located on the east bank of Thompson Run opposite its confluence with Bathgate Spring Run (Photo 8). It was identified as a Riverine Headwater Floodplain (HF), Palustrine Emergent (PEM) wetland that is severely disturbed due to the surrounding urbanized landscape and relatively high sedimentation rates. There are two automatic recording wells on this site. An examination of the hydrographs (Figs. 7 & 8) shows the flashiness of water inputs to this type of wetland (one that is streamside - Fig. 7, well C62D), but may also reflect incoming stormwater flows from Thompson Run. The two notable peaks, one of which flooded the site to about 50 cm (18 in) above the ground surface in early October of 1997, occurred during intensive precipitation events of short duration (e.g., hours). Note that similar peaks did not occur at Site #56.

Summary data for three of the reference wetlands, #28, #56, and #57, are presented in Figures 9, 10, and 11, respectively. Reference wetland #64, recently added, is located on the west side of upper Slab Cabin Run (Photo 9). Data will be available for this site at a later date.

Table 9. Master list of vascular plant species found in Millbrook Marsh
(**W** = Woody ,**T**=Pennsylvania Threatened, **R**=Pennsylvania Rare,
E=Pennsylvania Endangered

Scientific Name	Common Name	Pursell 1954	Penn -DOT 1980	Wagner 1994	CWC 1995	PSU CWC 1994-1997
Acer negundo (W)	Box elder				*	*
Acer rubrum (W)	Red maple					*
Agrostis alba	Redtop					*
Alliaria officinalis	Garlic mustard					*
Allium sp.	Garlic/Leek					*
Alnus rugosa (W)	Speckled alder					*
Angelica atropurpurea	Angelica		*			
Apocynum cannabinum	Claspingleaf dogbane				*	*
Arctium munus	Common burdock					*
Asclepias syriaca	Common milkweed					*
Asclepias incarnata	Swamp milkweed			*		
Aster spp.	Aster					*
Barbarea vulgaris	Yellow cress					*
Blephilia hirsuta	Hairy wood mint					*
Brassica rapa	Field mustard		*			
Brassica spp.	Mustard					*
Bromus sp.	Brome					*
Calamagrostis Canadensis	Canada bluejoint			*		
Caltha palustris	Marsh marigold		*			
Cardamine bulbosa	Small flower bitter cress			*		
Cardamine parviflora	Small flower bitter cress					*
Carduus nutans	Nodding thistle				*	
Carex spp.	Sedges		*		*	*
Carex sp. (E)	Sedge			*		
Carex comosa	Sedge			*		
Cares conoidea	Sedge			*		
Carex interior	Sedge	*	*			
Carex lacustris	Lake sedge	*		*		
Carex sp. (R)	Sedge			*		
Carex leporina	Hare's foot sedge					*
Carex leptalea	Sedge			*		
Carex lurida	Shallow sedge					*

Table 9 continued. Millbrook Marsh Vegetation

Scientific Name	Common Name	Pursell 1954	Penn -DOT 1980	Wagner 1994	CWC 1995	PSU CWC 1994-1997
Carex sp. (T)	Sedge	*	*	*		
Carex schweinitzii (T)	Schweinitz' sedge	*	*			
Carex scoparia	Pointed broom sedge					*
Carex stricta	Tussock sedge			*		
Carex tetanica (T)	Sedge		*			
Carex vulpinoidea	Fox tail sedge					*
Chelone glabra	Turtlehead				*	
Cicuta bulbifera	Water hemlock	*	*			
Cicuta maculata	Spotted water hemlock					*
Cirsium sp.	Thistle					*
Cirsium arvense	Canada thistle		*			
Cornus amomum (W)	Silky dogwood				*	*
Cornus racemosa (W)	Grey dogwood			*		*
Cornus stolonifera(W)	Red-osier dogwood			*	*	*
Coronilla varia	Crown vetch					*
Crataegus spp. (W)	Hawthorn				*	*
Daucus carota	Queen Anne's lace					*
Dipsacus sylvestris	Teasel		*		*	*
Eleagnus umbellata (W)	Autumn olive					*
Eleocharis sp. (E)	Spike rush					*
Eleocharis spp.	Spike rushes		*	*		
Equisetum fluviatile	Water horsetail	*	*	*		
Equisetum hyemale	Scouring rush		*			
Erigeron sp.	Fleabane/Plantain					*
Eupatorium perfoliatum	Common boneset					*
Eupatorium spp.	Joe Pye weed					*
Euthamia graminifolia	Flat top fragrant golden rod					*
Festuca pratense	Meadow fescue					*
Fragaria virginiana	Virginia strawberry					*
Galium sp.	Bedstraw					*
Galium trifidum	Cleavers, Small bedstraw	*	*			
Geranium carolinianum	Carolina cranesbill					*
Geum laciniatum	Rough avens					*
Glecoma hederacea	Ground ivy					*
Glyceria striata	Fowl mannagrass			*		

Table 9 continued. Millbrook Marsh Vegetation

Scientific Name	Common Name	Pursell 1954	Penn -DOT 1980	Wagner 1994	CWC 1995	PSU CWC 1994-1997
Heracleum lanatum	Cow parsnip					*
Hesperis matronalis	Dame's rocket					*
Hieracium caespitosum	King devil /Hawkweed					*
Impatiens capensis	Spotted jewelweed		*	*		
Ipomea sp.	Morning glory					*
Iris pseudacorus	Yellow iris				*	
Iris versicolor	Blue flag iris		*			*
Juglans nigra (W)	Black walnut					*
Juncus balticus var. littoralis or j. arcticus	Baltic rush or Wire rush	*	*			
Juncus canadensis	Canada rush					*
Juncus effusus	Common soft rush		*			
Juncus spp.	Rush					*
Juncus tenuis	Slender rush					*
Lathyrus palustris v. myrtifolius	Wild pea	*	*	*		
Lemna sp.	Duckweed		*			
Lepidium campestre	Peppergrass					*
Ligustrum vulgare (W)	Common privet				*	*
Lonicera tatarica (W)	Tartarian honeysuckle					*
Lycopus americanus	American bugleweed					*
Lysimachia nummularia	Creeping Jennie or Moneywort		*			*
Mentha arvense	Field mint				*	*
Mentha piperita	Peppermint		*			
Mentha spicata	Spearmint		*			
	Moss, numerous sp.		*			
Myosotis laxa	Bay forget me not					*
Nasturtium pensylvanica	Watercress			*		
Nasturtium officinale	True watercress		*			
Oenothera biennis	Common evening primrose				*	
Oxalis sp.	Wood sorrel					*

Table 9 continued. Millbrook Marsh Vegetation

Scientific Name	Common Name	Pursell 1954	Penn -DOT 1980	Wagner 1994	CWC 1995	PSU CWC 1994-1997
Phalaris arundinacea	Reed canary grass					*
Phleum pratense	Timothy grass					*
Pilea pumila	Canada clearweed					*
Plantago major	Common plantain					*
Plantago rugellii	Pale plantain					*
Poa sp.	Bluegrass					*
Poa pratensis	Bluegrass			*		
Polygonum hydropiperoides	Mild water pepper					*
Polygonum lapathifolium	Willow-weed					*
Potamogeton spp.	Pondweeds		*			
Proserpinaca sp.	Mermaidweed		*			
Prunella vulgaris	Heal-all					*
Pycanthemum virginianum	Mountain mint			*		
Quercus macrocarpa (W)	Bur oak				*	*
Ranunculus spp.	Buttercups /Spearworts		*			*
Ranunculus repens	Creeping buttercup					*
Rhamnus cathartica (W)	Common buckthorn				*	*
Rhus typhina (W)	Staghorn sumac				*	*
Ribes americanum (W)	Wild black currant				*	*
Ribes hirtellum (W)	Northern wild gooseberry			*		
Rorippa amphibia x sylvestris	Creepin yellow cress					*
Rorippa nasturtium-aquatica	True water cress					*
Rosa multiflora (W)	Multiflora rose				*	*
Rubus sp. (W)	Dewberry /Blackberry					*
Rumex crispus	Curly dock					*
Rumex obtusifolius	Bitter dock					*

Table 9 continued. Millbrook Marsh Vegetation

Scientific Name	Common Name	Pursell 1954	Penn -DOT 1980	Wagner 1994	CWC 1995	PSU CWC 1994-1997
Sagittaria latifolia	Broad leaf arrow head					*
Salix discolor (W)	Pussy willow			*		
Salix nigra (W)	Black willow				*	*
Sambucus canadensis (W)	American elderberry					*
Scirpus atrovirens	Green bulrush					*
Scirpus validus	Softstem bulrush		*			
Scrophularia sp.	Figwort				*	
Senecia aureus	Golden ragwort					*
Simlacina stellata	Starry false Solomon's seal		*			
Solanum dulcamara(W)	Climbing nightshade		*			*
Solidago sp.	Goldenrod					*
Solidago canadensis	Canada golden rod					*
Solidago rugosa	Wrinkled goldenrod					*
Sparganium sp.	Burreed		*			
Sphenopholis obtusa	Slender wedgegrass			*		
Symplocarpus foetides	Skunk cabbage		*	*	*	*
Taraxacum officinalis	Common dandelion					*
Thalictrum polygamum	Tall meadow rue		*			
Trifolium hybridum	Alsike clover					*
Trifolium repens	White clover					*
Typha angustifolia	Broad-leaved cattail				*	*
Typha latifolia	Common cattail		*	*	*	*
Ulmus americana (W)	American elm			*		
Ulmus rubra (W)	Slippery elm					*
Urtica dioca	Stinging nettle		*			*
Verbena hastata	Blue vervain		*	*	*	*
Viola sp.	Viola		*			*
Vitis aestivalis (W)	Summer grape					*
Vitis riparia (W)	River bank grape					*
Xanthium chinense	Clotbur		*			
Zannichellia palustris	Horned pondweed			*		
Species Richness = 155		9	40	29	24	101

Table 10. Macroinvertebrates from reference wetland sites in Millbrook Marsh.

	#57 Thompson Run		#56 Farm 12	
	Stream	Soil	Pool	Soil
Insecta				
Collembola				
Isotomidae			4	
Ephemeroptera				
Baetidae				
Baetis sp.	15			
Odonata				
Coenagrionidae				
Enallagma sp.	3			
Hemiptera				
Corixidae	28			
Hesperocorixidae sp.	3			
Trichoptera				
Hydroptilidae	3			
Hydroptila sp.	5		40	
Limnephilidae				
Limnephilus sp.			3	
Diptera				
Ceratopogonidae		1		
Bezzia sp.			10	
Chironomidae	2208	1	111	10
Muscidae	3			
Psychodidae				
Pericoma sp.				7
Sciomyzidae	2			
Simuliidae	330	2		1
Tipulidae				
Molophilus sp.			1	
Paradelphomyia sp.				1
Tipula sp.				3
Coleoptera				
Dytiscidae				
Agabus sp.	2	1		
*Nebrioporus sp.**	3			
Helorphidae				
Helophorus sp.			50	
Hydrophilidae				
Laccobius sp.	3			
Crustacea				
Amphipoda				
Gammaridae				
Gammarus sp.			527	

Table 10 (cont.)	Thompson Run		Farm 12	
	Stream	Soil	Pool	Soil
Podocopa	541		303	8
Arachnida				
Acariformes	4		7	1
Oligochaeta	134	1		24
Gastropoda				
Mesogastopoda				
Hydrobiidae*			5138	55
Basommatophora				
Lymnaeidae	143			
Physidae	84			
Planorbidae	4			1
Bivalvia				
Veneroida				
Sphaeriidae	70		15	86
Total no.	3588	6	6209	197
Taxa richness	18	5	12	11

*awaiting taxonomic confirmation from examination against reference specimens.

Photo 6. Reference wetland site #28 - Millbrook Marsh, severely disturbed mainstem floodplain along lower Slab Cabin Run.

Photo 7. Reference wetland site #56 - Farm 12, severely disturbed riparian depression near Bathgate Spring Run.

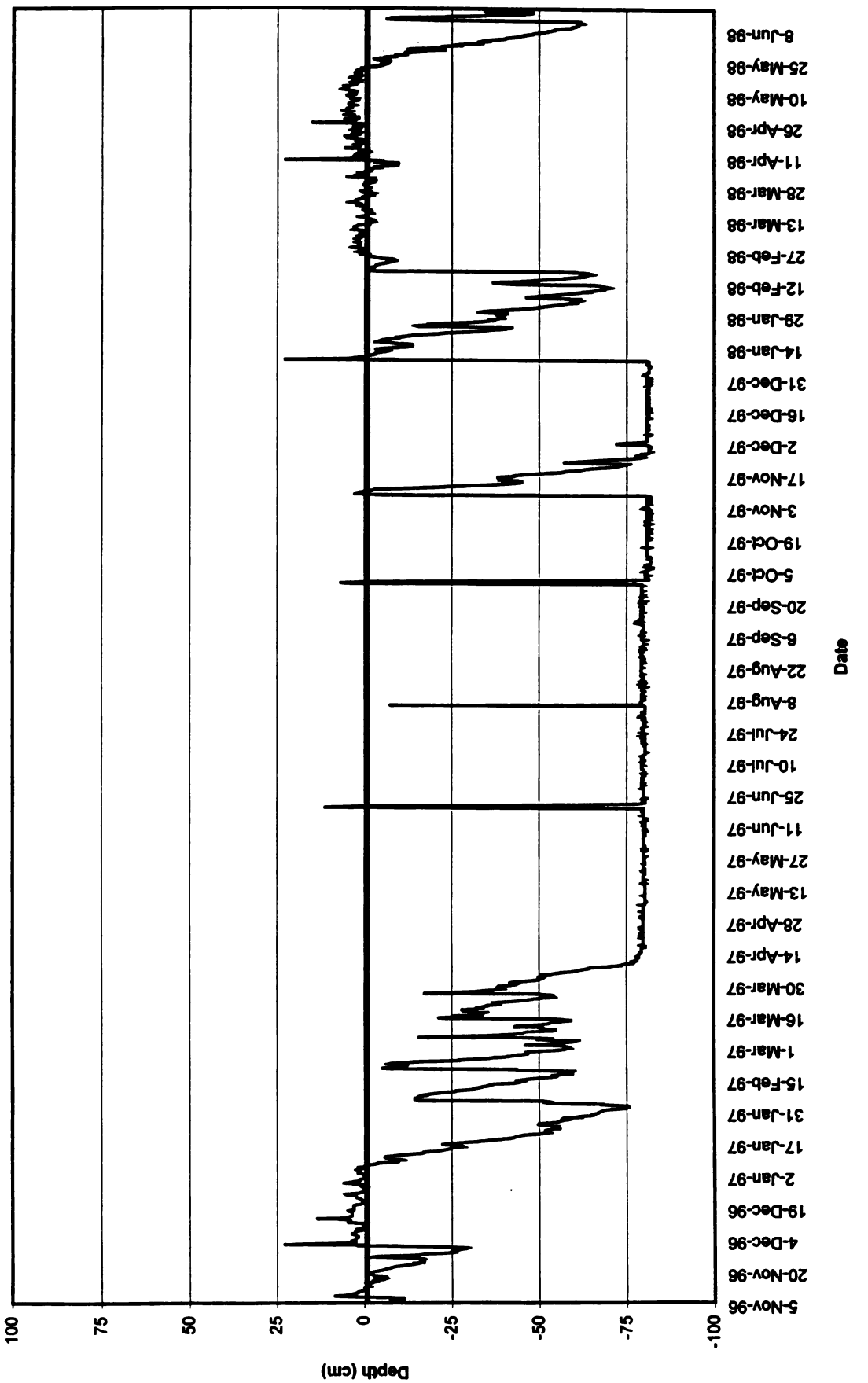


Figure 4. Hydrograph for reference wetland #28, Millbrook Marsh "C685": 1996-1998.

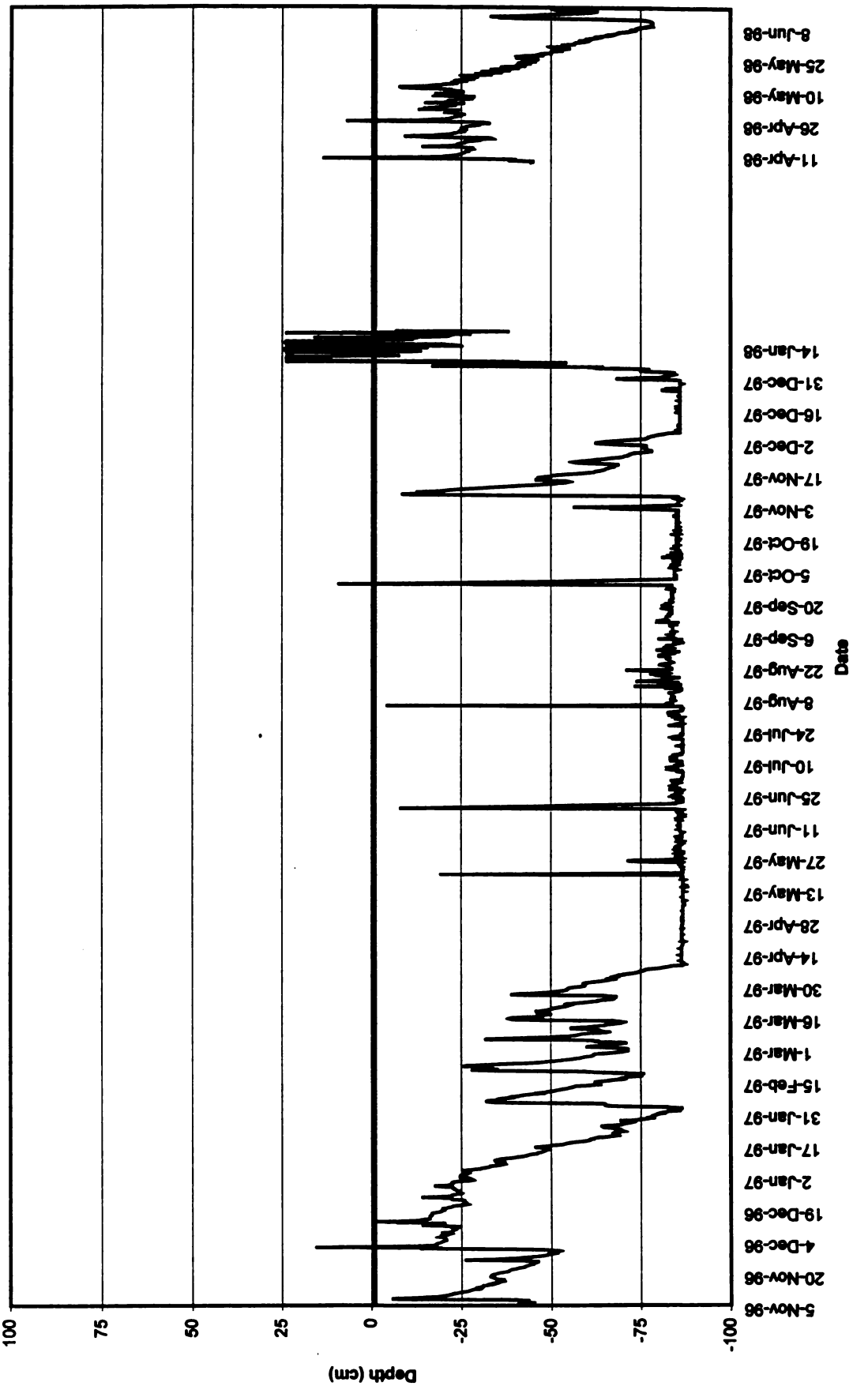


Figure 5. Hydrograph for reference wetland #28, Millbrook Marsh "C6B3": 1996-1998.

Photo 8. Reference wetland site #57 - Thompson Run, severely disturbed headwater floodplain along the east side of Thompson Run.

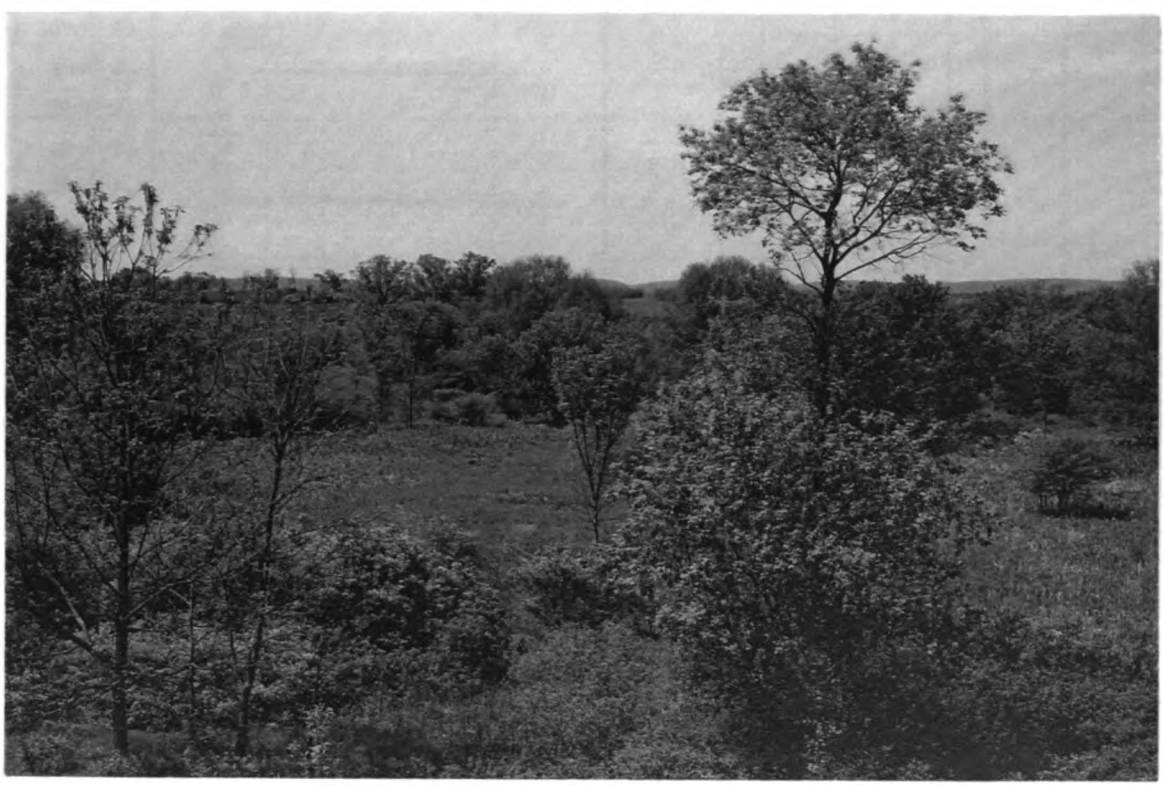


Photo 9. Reference wetland site #64 - State College High, moderately disturbed floodplain on Slab Cabin Run behind College Township Municipal Building.

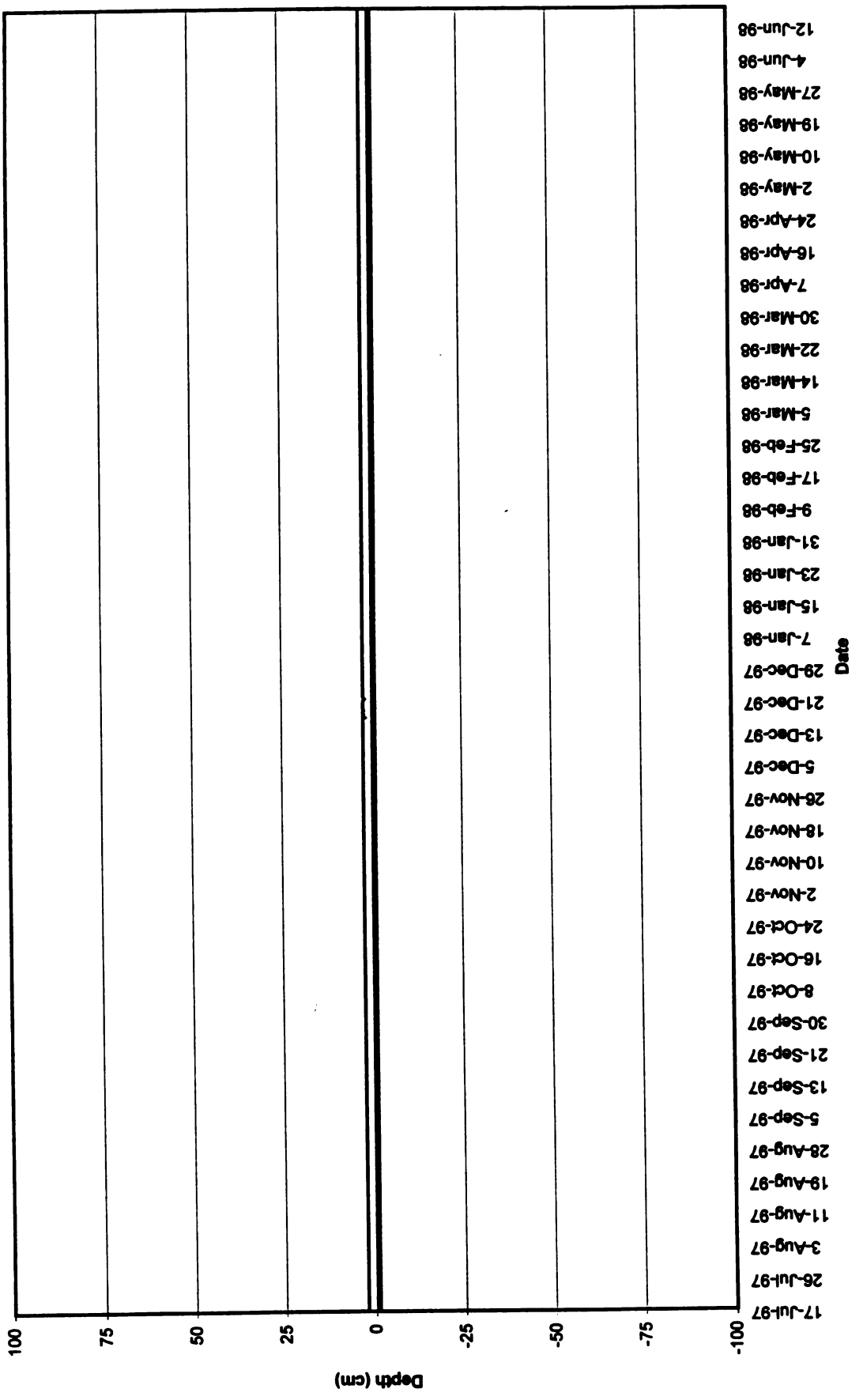


Figure 6. Hydrograph for reference wetland #56, Farm 12 "C6DB": 1997-1998.

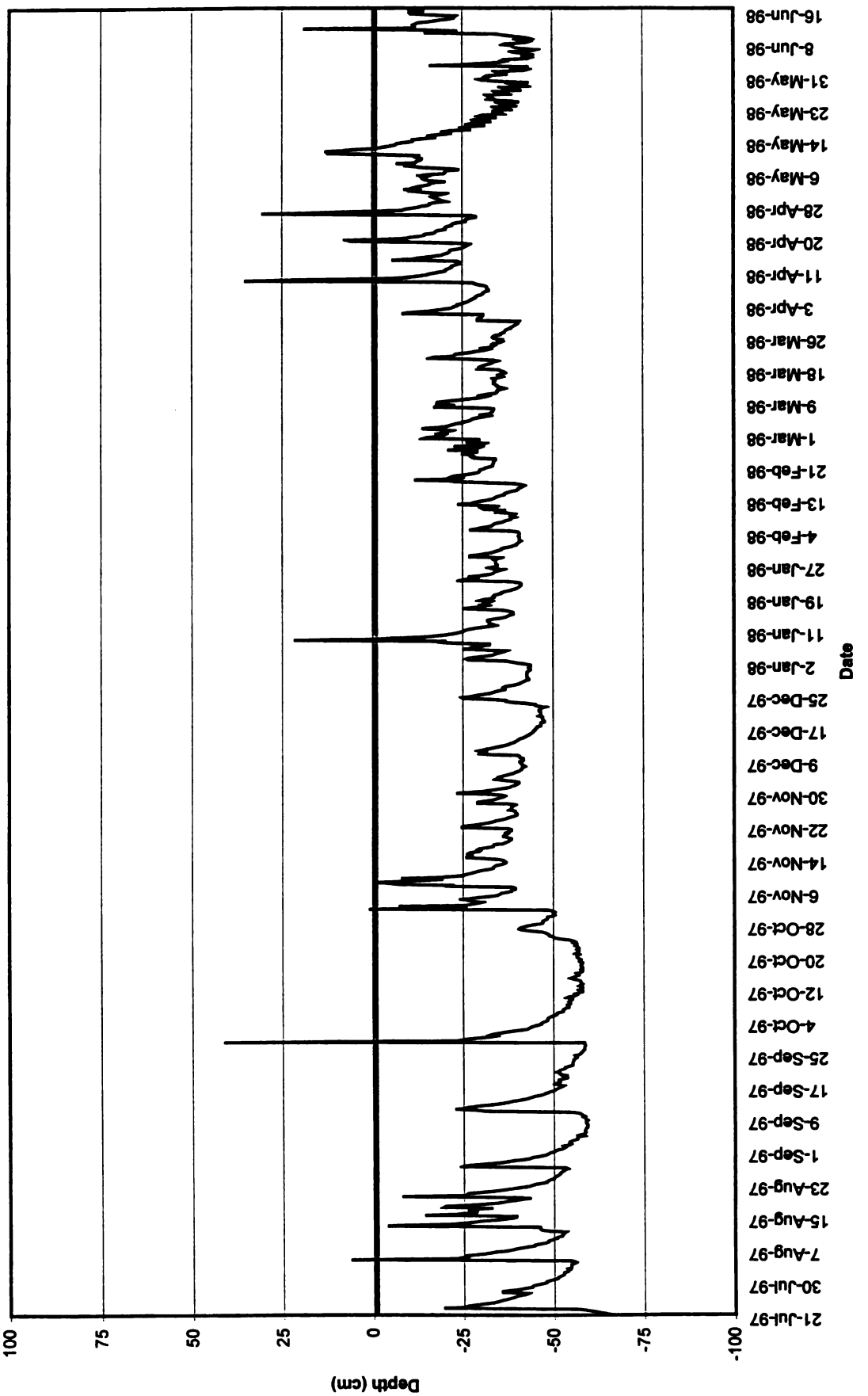


Figure 7. Hydrograph for reference wetland #57, Thompson Run "C62D": 1997-1998.

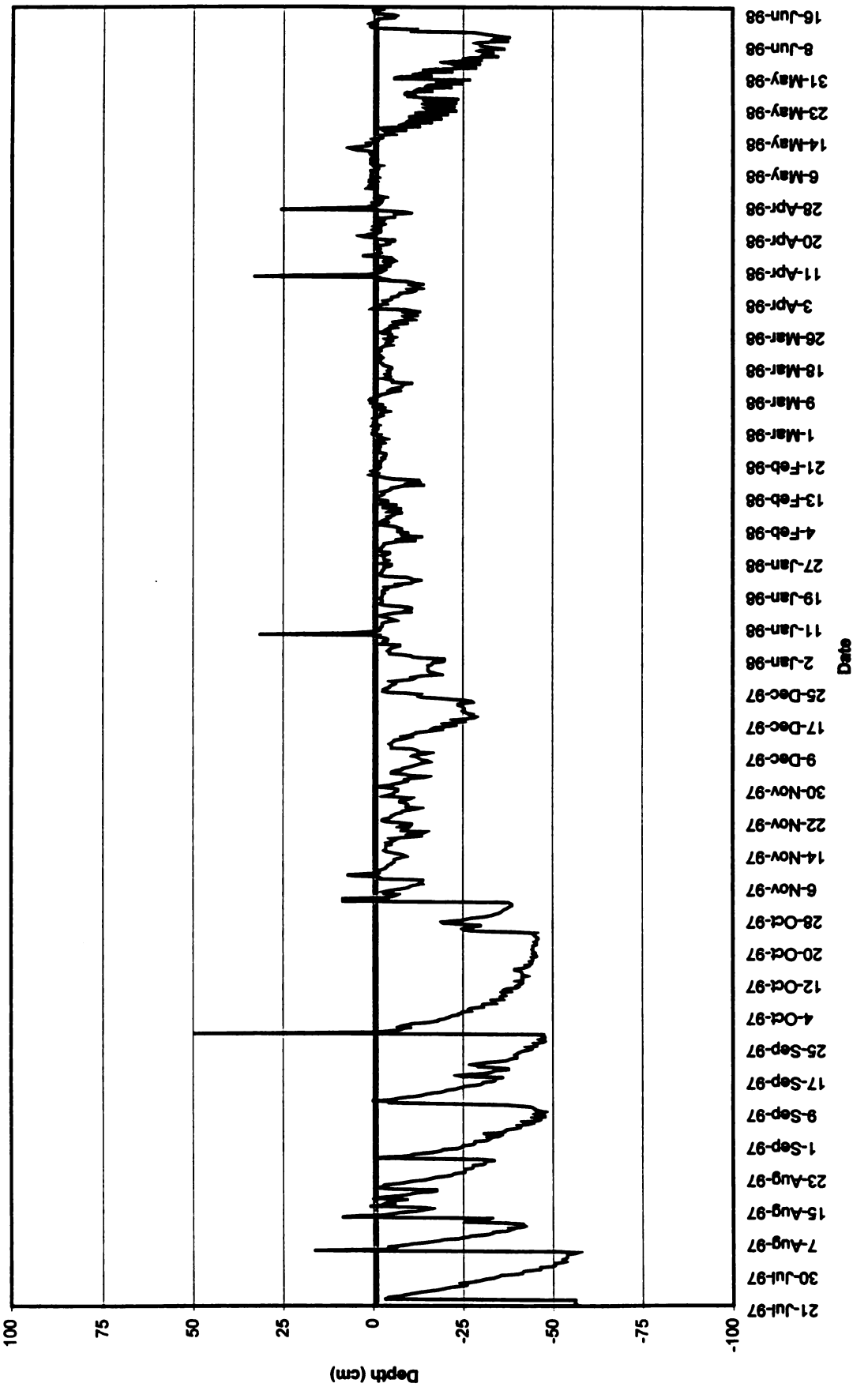


Figure 8. Hydrograph for reference wetland #58, Thompson Run "C6C9": 1997-1998.

PENN STATE COOPERATIVE WETLANDS CENTER - REFERENCE WETLAND - SUMMARY

SITE IDENTIFICATION:

CWC REF. NO.: 28
NAME: Millbrook Marsh
WATERSHED: Spring Creek
DOMINANT VEGETATION CLASS: *PSS/PEM
HYDROGEOMORPHIC CLASS: Mainstem floodplain
DISTURBANCE CLASS: Severe
WETLAND AREA - ha(ac): 0.7 (1.7)

STATE: PA
COUNTY: Centre
MUNICIPALITY: College
USGS QUAD: State College
LAT: 40° 48' 40" LONG: 77° 50' 10"
UTM COORD (E/N): 260900/4522000
YEAR(S) SAMPLED: 1994

VEGETATION - (dominant species, up to 5 herbceous and 5 woody):

MEAN SITE COVER [RANGE]: HERBACEOUS (%) 80.3 [45-95] WOODY (%) 35.6 [0-85]

	INDICATOR STATUS
HERBACEOUS - scientific name (common name):	
Ranunculus repens (Creeping buttercup)	3.00
Phalaris arundinacea (Reed canary grass)	1.67
Bromus sp. (Brome)	3.33
--- (Grass)	3.00
Geum laciniatum (Rough Avens)	2.67
WOODY - scientific name (common name):	
Cornus amomum (Silky dogwood)	2.00
Acer negundo (Box elder)	2.67
Juglans nigra (Black walnut)	NI
Lonicera tatarica (Tatarian honeysuckle)	4.00
Ribes americanum (Wild black currant)	2.00

WEIGHTED INDICATOR STATUS (dominant spp.): herbaceous: 2.48
woody: 2.67
INDICATOR STATUS (all spp.): herbaceous: 2.81
woody: 2.71

SPECIES RICHNESS: herbaceous: 63 woody: 6 total: 69

SOIL: MATRIX CHROMA (mean): 2.0 ORGANIC MATTER (%, mean): 5.2

BULK DENSITY (g/m^3, mean): 0.84 SOIL SERIES: Melvin silt loam

TEXTURE (%, mean):
SAND: 29.3 SILT: 38.5 CLAY: 32.2

SEDIMENTATION RATE:
MINERAL LOADING(g/cm^2): 0.19 EQUIVALENT DEPTH (cm): 0.10 ORGANIC LOADING (g/cm^2): 0.22

HYDROLOGY (see attached hydrographs for wells):
WATER LEVEL - cm, median (range): -112.0 [-130.0-(-42.0)]

WATER QUALITY: pH - mean (range): 7.2
CONDUCTIVITY - mean (range): 660.0

WILDLIFE HABITAT (see attached Wildlife Community Habitat Profile):

NOTES:

PENN STATE COOPERATIVE WETLANDS CENTER - REFERENCE WETLAND - SUMMARY

SITE IDENTIFICATION:

CWC REF. NO.: 56
NAME: Farm 12
WATERSHED: Spring Creek
DOMINANT VEGETATION CLASS: PEM
HYDROGEOMORPHIC CLASS: Mainstem floodplain
DISTURBANCE CLASS: Severe
WETLAND AREA - ha(ac): 0.08 (0.2)

STATE:PA
COUNTY: Centre
MUNICIPALITY: College
USGS QUAD: State College
LAT: 40° 48' 41" LONG: 77° 50' 12"
UTM COORD (E/N): 260900/4522000
YEAR(S) SAMPLED: 1997

VEGETATION - (dominant species, up to 5 herbceous and 5 woody):

MEAN SITE COVER [RANGE]: HERBACEOUS (%) 97.3 [90-100] WOODY (%) 14.4 [0-40]

	INDICATOR STATUS
HERBACEOUS - scientific name (common name):	
Carex lacustris (Lake sedge)	1.00
Agrostis alba (Red top)	2.00
Carex vulpinoidea (Fox tail sedge)	1.00
Juncus canadensis (Canada rush)	1.00
Nasturtium officinale (True watercress)	1.00
WOODY - scientific name (common name):	
Lonicera tatarica (Tatarian honeysuckle)	4.00
Cornus stolonifera (Red osier dogwood)	1.67

WEIGHTED INDICATOR STATUS (dominant spp.): herbaceous: 1.2; woody: 2.84
INDICATOR STATUS (all spp.): herbaceous: 1.38; woody: 2.84

SPECIES RICHNESS: herbaceous: 11 woody: 2 total: 13

SOIL: MATRIX CHROMA (mean): 1.8 ORGANIC MATTER (%, mean): NA

BULK DENSITY (g/m^3, mean): NA SOIL SERIES: Melvin silt loam

TEXTURE (%, mean):
SAND: NA SILT: NA CLAY: NA

SEDIMENTATION RATE - depth, cm, median (range)

MINERAL	EQUIVALENT	ORGANIC
LOADING (g/cm^2): NA	DEPTH (cm): NA	LOADING (g/cm^2): NA

HYDROLOGY (see attached hydrographs for wells):
WATER LEVEL - cm, median (range): See hydrographs

WATER QUALITY: pH - mean (range): NA
CONDUCTIVITY - mean (range): NA

WILDLIFE HABITAT (see attached Wildlife Community Habitat Profile): NA

NOTES:

PENN STATE COOPERATIVE WETLANDS CENTER - REFERENCE WETLAND - SUMMARY

SITE IDENTIFICATION:

CWC REF. NO.: 57
NAME: Thompson Run
WATERSHED: Spring Creek
DOMINANT VEGETATION CLASS: PEM
HYDROGEOMORPHIC CLASS: Headwater Floodplain
DISTURBANCE CLASS: Severe
WETLAND AREA - ha(ac): 0.20 (0.5)

STATE: PA
COUNTY: Centre
MUNICIPALITY: College
USGS QUAD: State College
LAT: 40° 48' 41" LONG: 77° 50' 10"
UTM COORD (E/N): 260900/4522000
YEAR(S) SAMPLED: 1997

VEGETATION - (dominant species, up to 5 herbceous and 5 woody):

MEAN SITE COVER [RANGE]: HERBACEOUS (%) 97.5 [75-100] WOODY (%) 10.0 [0-80]

	INDICATOR STATUS
HERBACEOUS - scientific name (common name):	
Brassica rapa (Field mustard)	1.00
Carex lacustris (Lake sedge)	1.00
Phalaris arundinacea (Reed canary grass)	1.67
Symplocarpus foetidus(Skunk cabbage)	1.00
Typha angustifolia (Narrow-leaved cattail)	1.00

WOODY - scientific name (common name):
—

WEIGHTED INDICATOR STATUS (dominant spp.): herbaceous: 1.13; woody: —
INDICATOR STATUS (all spp.): herbaceous: 1.19; woody: —

SPECIES RICHNESS: herbaceous: 9 woody: 4 total: 13

SOIL: MATRIX CHROMA (mean): 1.8 ORGANIC MATTER (%, mean): NA

BULK DENSITY (g/m^3, mean): NA SOIL SERIES: Dunning silty clay loam

TEXTURE (%, mean):
SAND: NA SILT: NA CLAY: NA

SEDIMENTATION RATE - depth, cm, median (range)

MINERAL	EQUIVALENT	ORGANIC
LOADING (g/cm^2): NA	DEPTH (cm): NA	LOADING (g/cm^2): NA

HYDROLOGY (see attached hydrographs for wells):
WATER LEVEL - cm, median (range): See hydrographs

WATER QUALITY: pH - mean (range): NA
CONDUCTIVITY - mean (range): NA

WILDLIFE HABITAT (see attached Wildlife Community Habitat Profile): NA

NOTES:

Invasive Vegetation

A non-native or exotic species of plant or animal is one that was introduced, either intentionally or unintentionally, by human endeavor into a locality where it previously did not occur (SER 1994). Most introduced plant species form an important part of our environment, contributing immensely to agriculture, horticulture, landscaping, and soil stabilization. But among the thousands of plant species introduced to our area, approximately 10 percent have displayed unexpected aggressive growth tendencies, resulting in real threats to native ecosystems (Blossey 1997). These invasive non-indigenous plants typically exhibit the following characteristics (Miller 1994):

- highly successful seed dispersal, germination, and colonization;
- rapid growth and maturity;
- prolific seed production;
- rampant spread;
- ability to out-compete native species; and
- high cost to remove and control.

Invasive plants thrive on disturbed sites such as Millbrook Marsh, where the floodplain is repeatedly scoured and eroded. These species have left behind the natural controls (usually insects) that kept them in check in their native habitats in favor of the somewhat compromised wetland and riparian environments evident in Millbrook Marsh. Some non-native plants, such as the common dandelion (*Taraxacum officinale*), have over time become integrated into the natural floristic pattern of the area. These can be considered "naturalized" and, although newcomers to an ecosystem with a long natural history, can be tolerated and even appreciated in an urbanizing watershed such as Spring Creek. Other plant species are of greater concern, for they've proven that they can out-compete and displace indigenous vegetation. None is more evident on site than honeysuckle (*Lonicera* spp.). As with most other species successful in invading disturbed ecosystems, dense thickets of *Lonicera* may modify ecosystem structure and functions to their exclusive advantage (Luken et al., 1997). Following is an overview of existing and potential invasive species of primary concern.

Existing Invasive Species. Honeysuckle (*Lonicera* spp.), was introduced to the eastern U.S. in the late 1890s as a horticultural shrub and for wildlife habitat improvement. It is present in an intermittent ring around Millbrook Marsh, generally extending back from the outer edge of the floodplain (Map 6). While it has clearly associated with areas of disturbed soil and fill situations, a comparison of 1948 vs. 1994 aerial photographs (Photo 2) shows a marked advancement of thicket formation along the riparian corridors, particularly of Slab Cabin Run. It is clear that large areas upland areas, especially those affected by fill, are dominated by honeysuckle thickets. Although tentatively identified as Amur honeysuckle (*L. mackii*), it is likely that hybridization has been occurring with other *Lonicera* species, particularly Tartarian honeysuckle (*L. tatarica*) and Morrow's honeysuckle (*L. morrowi*). Williams (1995) has noted that *Lonicera* species freely hybridize. This presents a concern, because *L. morrowi* is able to invade fens and wetter riparian areas. *Lonicera* often out-competes native plants because of its earlier leaf expansion and later fall leaf retention. Large thickets interfere with the life cycles of many native woody and herbaceous plants. These stands can alter habitats they invade by decreasing light availability and depleting soil moisture and nutrients. It is suspected that *Lonicera* is allelopathic, releasing chemicals into the soil that inhibit the growth of other plant species (Converse 1995). The fruit is consumed by many birds, which make effective control difficult (Williams 1995). Occasionally, undisturbed native plant communities are invaded. Barnes (cited in Converse 1995) found that gray dogwood (*Cornus racemosa*) thickets, unless very dense, could not resist honeysuckle invasion, but that honeysuckle thickets of various densities could resist dogwood invasion.

Garlic mustard (*Alliaria petiolata*), a biennial herb of European origin, is unusual among invasive species in that it is also shade tolerant and spreads readily under forest canopy, especially in moist sites such as riparian woodlands. It is extant in several large patches on site, most notably as the chief groundcover around the several large bur oaks (*Quercus macrocarpa*) along Slab Cabin Run. This resilient species is very aggressive in disturbed soil, forming a dense monoculture and displacing native ground flora. Spring seedlings have been known to attain densities of 20,000 seedlings/m^2 (Blossey 1997). The mode of dispersal is unknown, but is believed to be influenced by white tailed deer (*Odocoileus virginicus*) populations, where trampling exposes soil and allows seeds to germinate. Human trampling and alteration of light conditions can achieve the same affect. A prime local example is the nearby Lederer Park woodlot, in which recent manual grubbing of shrubby understory by prison work crews was immediately followed by a flush of garlic mustard, to the exclusion of virtually all other ground cover. Once a foothold is gained, a lack of natural competitors and predators allow this plant to further dominate ground cover.

Multi-flora rose (*Rosa multiflora*) is an adaptable, thorny shrub attaining a height of between 2 - 3 m (6-10 ft). This Asian rose has arching stems that inter-tangle to form impenetrable clumps up to 6 m in width, choking out native plants. Long planted for wildlife food and erosion control, it has become a major pest in fallow field and bottomland clearings throughout the United States. It has been declared a noxious weed in Pennsylvania. Studies have shown that it is a highly competitive for soil nutrients, and can lower yields if crops are planted following its eradication (Evans and Eckardt 1995). Although decidedly less ubiquitous than honeysuckle, multiflora rose is found scattered throughout the middle elevations of Millbrook Marsh. It can spread clonally outward from established clumps, but seems to be dispersed largely through consumption and subsequent deposition of seeds by songbirds.

Autumn-olive (*Eleagnus umbellata*) has, until recently, been planted as habitat for upland game birds. It has been noted as a problem in both Shaver's Creek Environmental Center and at Bald Eagle State Park. There are several specimens along the east side of the site, fringing the grassy slope down from the bike path. Autumn olive has the potential of becoming one of the most troublesome shrubs in the central and eastern U.S. It exhibits prolific fruiting, rapid growth, is widely disseminated by birds, and can easily adapt to many sites. It is vigorous and competitive against native species, and resprouts after cutting. Due to its nitrogen-fixing capabilities, it has the capacity to adversely affect the nitrogen cycle of native communities that may depend on infertile soils (Eckerdt 1995).

Common buckthorn (*Rhamnus cathartica*) is a small European tree that can be an aggressive invader of both upland and slightly wetter sites, favoring abandoned pastures and fields (Haber 1996). Dirr (1977) remarked on its tendency to become a weed, since the fruit are eaten by birds and the seeds are deposited along fences rows, shrub borders and other edge habitats. In Millbrook Marsh scattered individuals can be found in the old field just down-gradient from the bike path and near the College Township Municipal Building along Slab Cabin Run.

Japanese knotweed (*Polygonum cuspidatum*) is a tuberous perennial herb which is spreading quickly in the eastern United States and Great Lakes area. In the central reaches of the Susquehanna basin it has begun to form large monospecific stands along forested riverine floodplains. A small stand has recently established along Slab Cabin Run and Thompson Run, both just upstream of College Avenue. This suggests that immigration into Millbrook Marsh is imminent. Dispersed mostly through the spread of rhizome fragments, it forms large, monospecific stands which displace virtually all other vegetation.

Other minor invasive species in Millbrook Marsh should also be monitored for range expansion. Common buttercup (*Ranunculus acris*) is an introduced perennial forb that flowers briefly in spring along gravel bars and stream banks in Millbrook Marsh, especially along Thompson Run.

Although its monocultural stands are substantial, it is unclear whether this forb is invasive in riparian areas. Dame's rocket (*Hesperis matronalis*), a member of the mustard family, is aggressively true to form. Considered a potentially troublesome species, it occurs side-by-side at many sites with garlic mustard. In Millbrook Marsh it is found along stream margins throughout the site. Several grasses also pose a concern, but positive field identification has yet to be made. These typically include smooth brome grass (*Bromus inermis*) and the cool-season Kentucky bluegrass (*Poa pratensis*). Further field work is required to determine the extent and impact of invasive forbs, grasses, and legumes in Millbrook Marsh. Crown vetch (*Coronillia varia*), a legume ground cover often used for erosion control can aggressively invade fields and forest edges. Its is a dominant species along the bike path on the eastern border of Millbrook.

Potential Invasive Species. Purple loosestrife (*Lythrum salicaria*) has yet to make its appearance in Millbrook Marsh. However, this European native has become a well-established resident of Bald Eagle Valley and Penn's Creek since at least 1993, and has recently been found downstream of Millbrook Marsh in Spring Creek Park. This broadleaf persistent emergent thrives in fen areas and — unlike most wetland herbs which reproduce largely through rhizomes — spreads exceedingly fast due to prolific seed production. It has been suggested that the tiny seeds (up to 2 million per plant) are spread to headwater areas when they mix with mud and adhere to birds, livestock and people. *L. salicaria* tends to establish in a zone between several inches and several feet above the water table, forming colonies whose thick herbaceous canopy easily out-compete most native wetland herbs. In low-lying glaciated areas to the northeast and northwest, it has become the predominant wetland plant over vast areas, out competing even cattail (*Typha* spp.). Invasion of purple loosestrife into a wetland can result in the suppression of the resident plant community and the eventual alteration of the wetland's structure and function (Blossey 1997). Large monotypic stands of purple loosestrife jeopardize various threatened and endangered native wetland plants and wildlife by eliminating natural foods and cover (Eastman 1995, Haber 1996).

Common reed (*Phragmites australis*) is also worth watching for. Normally a stable and benign native species also found in temperate zones around the world, researchers suspect that a newly introduced genotype is responsible for the recent vast territorial expansion along the marsh-upland interface of many brackish and freshwater emergent wetlands.

Norway maple (*Acer platanoides*), a widely planted shade tree that favors urban riparian slopes, has shown up along Slab Cabin Run just downstream of the Military Museum in Boalsburg. Able to establish in shaded conditions, it rapidly establishes complete canopy closure. The resulting dense shade and aggressive uptake of soil moisture can result in complete exclusion of sub-canopy and ground flora.

The list of aggressive invasive plants would not be complete without mention of several indigenous plants. Boxelder (*Acer negundo*), wild grapes (*Vitis* spp.), and a few other native species possess the ability to form fairly exclusive monocultures that thrive in disturbed environments. Whether population management of invasive, but native species should occur in Millbrook Marsh is a topic worthy of further discussion among experts and citizens in the community.

Wetland Wildlife

Wetlands support an amazing variety of wildlife species, with amphibians and reptiles heavily dependent, and many species of birds and mammals also making use of wetlands for feeding and breeding. Wetlands offer habitat for waterfowl and other waterbirds, such as herons, shorebirds, and kingfishers. Many migratory and resident bird species have been observed in and around Millbrook Marsh, including songbirds and raptors, especially those that eat insects and fish. Some are truly wetland dependent or obligate species, while the majority are not wetland specialists, but generalists. There are 70 species of endangered and threatened birds in the United States. Of these, 31% are wetland species (Rymon, 1989, p. 196). In Pennsylvania, 48% of all special concern species are associated with wetlands, and 40% of them are wetland specific (Clark and Klem, 1986, p. 211). Of the 11 species of turtles found in Pennsylvania, 10 of them occur in a wetland habitat at some stage in life (McCoy, 1989, p. 177). There are also about six obligate wetland species of mammals in Pennsylvania, including the northern water shrew, star-nosed mole, muskrat, mink, beaver, and otter (Kirkland and Serfass 1989). In addition, Pennsylvania has 11 bat species, all of which benefit from the concentration of flying insects over water and wetlands.

The animal life of Millbrook Marsh has been only partially investigated at this time. There have been several inventories, formal and informal, resulting in the following species lists. Additional formal inventories of the wildlife of Millbrook Marsh should result in a more comprehensive list of the species living in, breeding in, and migrating through the marsh. A monitoring plan that includes continuing inventories, is proposed later in this report.

Table 11. A list of 52 bird species observed in Millbrook Marsh during formal point counts (1994, M. Gaudette and T. O'Connell pers. comm.) and informal observations (1993-98, T. O'Connell and R. Brooks pers. comm)(bird species are listed alphabetically by the more familar common name).

American crow	Corvus brachyrhynchos
American goldfinch	Carduelis tristis
American kestrel	Falco sparverius
American redstart	Setophaga ruticilla
American robin	Turdus migratorius
Barn swallow	Hirundo rustica
Belted kingfisher	Ceryle alcyon
Black capped chickadee	Parus atricapillus
Blue jay	Cyanocitta cristata
Brown-headed cowbird	Molothrus ater
Cedar waxwing	Bombycilla cedrorum
Chipping sparrow	Spizella passerina
Common grackle	Quiscalus major
Common snipe	Gallinago gallinago
Common yellowthroat	Geothlypis trichas
Coopers hawk	Accipiter cooperii
Dark-eyed junco	Junco hyemalis
Downy Woodpecker	Picoides pubescens
Eastern bluebird	Sialia sialis
Eastern kingbird	Tyrannus tyrannus
Eastern phoebe	Sayornis phoebe
European starling	Sturnus vulgaris
Field sparrow	Spizella pusilla

Gray catbird	Dumetella carolinensis
Great blue heron	Ardea herodias
Green heron	Butorides striatus
House finch	Carpodacus mixicanus
House sparrow	Passer domesticus
House wren	Troglodytes aedon
Indigo bunting	Passerina cyanea
Killdeer	Charadrius vociferus
Lincoln's sparrow	Melospiza lincolini
Mallard	Anas platyrhynchos
Mourning dove	Zenaida macroura
Northern cardinal	Cardinalis cardinalis
Northern flicker	Colaptes auratus
Northern mockingbird	Mimus polyglottos
Red-winged blackbird	Agelaius phoeniceus
Red eyed vireo	Vireo olivaceus
Red-tailed hawk	Buteo jamaicensis
Rock dove	Columba livia
Sharp-shinned hawk	Accipiter striatus
Song sparrow	Melospiza melodia
Swamp sparrow	Melospiza georgiana
Tree sparrow	Spizella arborea
Tree swallow	Tachycineta bicolor
Tufted titmouse	Parus bicolor
Warbling vireo	Vireo gilvus
White throated sparrow	Zonotrichia albicolis
Willow flycatcher	Empidonax traillii
Wood duck	Aix sponsa
Yellow warbler	Dendroica petechia

Table 12. A list of 6 species of amphibians and reptiles observed from 1993-1998 in Millbrook Marsh.*

Common snapping turtle	Chelydra serpentina
Eastern garter snake	Thamnophis sirtalis
Northern spring peeper	Hyla crucifer
Northern water snake	Nerodia sipedon
Pickerel frog	Rana palustris
Wood turtle	Clemmys insculpta

*** Personal observations by T. Pluto and R. Brooks.**

Table 13. A list of 13 species or sign of mammals observed from 1993-1998 in Millbrook Marsh.

Beaver	Castor canadensis
Deer mouse	Peromyscus maniculatus*
Eastern cottontail	Syvilagus floridanus
Eastern gray squirrel	Sciurus carolinensis
Meadow vole	Microtus pennsylvanicus*
Mink	Mustela vision
Muskrat	Ondatra zibethicus
Raccoon	Procyon lotor
Short-tailed shrew	Blarina brevicauda*
Star-nosed mole	Condylura cristata
White-footed mouse	Peromyscus leucopus*
White-tailed deer	Odocoileus virginianus
Woodchuck	Marmota monax

* Small mammals live trapped in 1993 in Millbrook Marsh by Urban (1993).

Management Goals

"The mission of the Millbrook Marsh Nature Center is to educate and inspire people about the natural world and to instill a passion for the environment through science, history, culture and art."

The following goals and principles envision Millbrook Marsh Nature Center as a sanctuary for nature and representative cultural heritage in a quickly urbanizing context. They set the framework for management that will help ensure a perpetually flourishing and complex ecosystem, one that the people of Centre Region will come to cherish and steward as a place of discovery, learning and inspiration. And because the Nature Center's vitality depends to a great extent on human influences beyond its boundaries, these goals and principles are proactive in calling for conservation measures throughout the watershed.

Overall Goal

To protect, restore, and enhance the biotic, abiotic, cultural and scenic values of the site, and to promote public understanding, appreciation, and enjoyment of this heritage. Priority will be given to the protection of the wetland and stream ecosystems.

Natural History Goal

To ensure the health and integrity of the Center's natural aquatic and upland ecosystems by protecting, restoring, and enhancing ecological and hydrologic functions in a manner that promotes self-sustaining and diverse biotic communities.

Cultural Heritage Goal

To identify, maintain and celebrate the cultural heritage features of the Center for their inherent value, and as they reveal the long term human use and occupancy of the area.

Education and Interpretation Goal

To provide opportunities for students of all ages to explore and learn about the site's ecosystem and its role as headwaters to the Spring Creek Watershed and the Chesapeake Basin in a manner that is experiential, participatory and respectful of the natural world.

Recreation Goal

To accommodate ongoing and new passive recreational opportunities in Millbrook Marsh that are consistent with the above goals.

Management Principles

The following principles serve as general tenets on which to base management decisions regarding the wetland and its environs. They represent a merging of knowledge about the site, its watershed context, and the wider body of literature on wetlands, landscape ecology, land use planning and environmental education. For each of the categories below a summary of current conditions is given, and a list of principles is presented to guide decisions on management, development and programming of the Center.

Natural History Principles

That Millbrook Marsh relies on the overall health and integrity of the watershed cannot be understated. Primarily at stake is the quantity and quality of water that originates up-gradient of the site. "Flashy" storm flows from urban development higher in the watershed have already heavily impacted the upper reaches of Thompson Run in the form of severe erosion of the stream's substrate, and to much of Slab Cabin Run. Processes of downcutting accelerate as hydraulic energy from storm events become increasingly concentrated in unnaturally deep and wide channels, rather than dissipating onto the natural floodplain. There is an anecdotal indication that the Thompson Run reach of Millbrook Marsh is downcutting (B. Niebel, pers. comm. 1997). If so, the implications for adjacent wetlands are serious—less-frequent but more severe flooding and extended periods of water table drawdown can result in the "perching" and drying out of streamside wetlands and the invasion of upland woody and herbaceous vegetation.

There are also indications that the water budget on site is being affected by urbanization. High runoff-low infiltration conditions in the developed portions of the watershed seem to be translating to a greater reliance on point sources—local springs and discharges from the water treatment plant —to augment low-flow. The tendency toward unnaturally extreme low-flows was apparent along Slab Cabin Run during the dry weather period in the early fall of 1997; reaches of Walnut Springs Run dried up entirely at several points through the summer and fall of 1997.

Extreme low flow conditions can impact aquatic invertebrates and displace the local trout population to reaches further downstream. Birds that forage on aquatic organisms may seek out other sites. Riparian-based small mammals, reptiles, and amphibians may likewise seek out more prosperous habitats, often to their peril where road crossings are encountered.

Also at stake is the physical and functional connectedness of Millbrook Marsh to its larger landscape context. In pre-settlement times, riparian and contiguous upland vegetation would have stretched along the entire Spring Creek corridor. Since the early-1800s land clearing activities and, later, urban development have served to isolate Millbrook Marsh from adjacent riparian ecosystems and upland habitats. Important ecological processes (e.g., nutrient and energy cycling, the free movement of species and genetic material) have been severed or compromised, probably resulting in lowered biodiversity and biotic complexity.

Finally, direct ecological stresses have been observed on-site. Disrupted groundwater flow and levels, disturbed soils, vegetation clearance and altered sun/shade patterns, heightened nutrient and silt inputs, and dumping and salt loading have resulted in habitat changes with loss of associated species, as well as the concurrent invasion of aggressive, non-indigenous plant species. The overall result has been an altered community composition, particularly along the wetland-upland interface.

While acknowledging the site's regionally significant natural resource values and its strategic location, site investigations have characterized a partially dysfunctional ecosystem. As Millbrook Marsh's links to larger terrestrial and hydrologic systems become more tenuous, its resilience

fades. Already, it appears there must be an increasing reliance on human inputs to maintain its basic ecological integrity.

The following principles are intended as a basis for managing for ecological integrity in a way that encourages self-sustaining natural processes and minimizes reliance on human inputs. While they are prescriptive and tailored to the key issues affecting Millbrook Marsh and its context, they draw on some of the more compelling concepts in watershed management, aquatic and wetland ecology, and landscape ecology. It is this interdisciplinary perspective that offers the greatest hope for the long-term viability of Millbrook Marsh.

Principles

- Promote watershed stewardship and ecosystem planning in general and, more particularly, within the Slab Cabin Run and Thompson Run-Walnut Springs Run subwatersheds. Accelerate comprehensive, multi-jurisdictional watershed management and land use policies that result in enhanced aquifer recharge up-gradient, stabilized base flows, improved water quality, restored stream morphologies, and stronger vegetative links between riparian and terrestrial habitats and surrounding parks and preserves.
- Ensure a sustainable hydrologic regime on-site to the greatest extent possible, including protection of spring discharge points, promotion of surface water infiltration, and protection and enhancement of natural stream morphology (e.g., pools and riffles, meanders, sandbars, substrate, bank overhangs).
- Remedy habitat patch isolation and strengthen riparian continuity through streamside revegetation initiatives upstream, downstream and within the marsh.
- Engage in ecological restoration where plant-soil communities have been negatively disturbed and where invasive species have displaced indigenous species or have altered ecosystem functions.
- Consider habitat creation projects that provide shelter and nesting for scarce or extirpated species, while enhancing opportunities for viewing and study of wildlife. Kingfisher nests, bat houses, osprey roosts, hibernacula, in-stream fish shelters are just some of the many installations possible on site.
- Revegetate nearby upland areas wherever possible, and accommodate safe wildlife passage between existing and restored habitats.
- Remove or remediate physical and spatial barriers (e.g. undersized culverts, fences, other impediments) to both aquatic and terrestrial species movement up- and down-stream and laterally to upland habitats.
- Affirm an adaptive management approach that realistically confronts past and current ecological stresses, is responsive to unforeseen variables, learns from its failures and successes and, throughout, strives to realize the vision of a thriving ecosystem.

Cultural Heritage Principles

Millbrook Marsh and the Bathgate community still contain some fine scenic resources and recreational opportunities that have been appreciated for generations. Bathgate's several original farmsteads, a number of century homes, a history of small-scale agricultural processing, and important freshwater springs serve as touchstones to the past and point to a heritage of human activities that was both productive and, for its day, stewardly. The nearby iron master's mansion and furnace offer opportunities for alliances, both programmatic and physical.

Principles

- Acquire a more in-depth understanding of the site's heritage and its relationship with the surrounding Bathgate community.
- Restore and adaptively re-use those structures that are of historical merit or that may enhance educational objectives. The barn is a fine example of a Pennsylvania forebay bank barn, and should be respected as such. The adjacent barnyard, likewise, still retains its original character. Open and utilitarian, it is the functional heart of the farmstead (Glass 1986; Ensminger 1992), and stands ready to accommodate outdoor group activities as generously as it did farming activities in times past.
- Provide for strong, safe pedestrian linkages between on-site and nearby cultural resources, such as the Centre Furnace Mansion, Bathgate Spring, Spring Creek Park, Slab Cabin Park, Walnut Spring Park, and contiguous bike paths.
- Be sensitive to field and hedgerow patterns that have long contributed to the area's rural character; use fence lines to order space and activities and to define areas of ecological restoration on the rear fields of Farm 12. Retain the spatial integrity of pastures along the front "facade" of the farmstead bordering Puddintown Road, with minor adaptations to reflect current standards of sustainable land management.
- Re-create historical structures and farmstead elements that may serve both cultural heritage and educational goals. For example, modified sun shelters could emulate the two livestock shelters that were evident through the 1950s, while accommodating small-group outdoor activities. Similarly, the existing double-fencerow tractor path from Orchard Road provides a unique, rhythmic entry experience; it should be renovated and mirrored with a second tractor path linking the proposed parking lot with the barnyard area.

Education and Interpretation Principles

Education and interpretation programs will provide the primary means of stimulating a bond between visitors to the Center and its natural and cultural systems. Effective programs will not only inform, but also inspire, celebrate, and challenge. Moreover, if they are holistic, they will make connections and find meaning. Over time these activities will help build a personal and collective empathy for Millbrook Marsh and its environs, contributing to a growing land ethic throughout the region.

A myriad of stories and insights are available through a careful reading of the site and its historical legacy. Local culture as expressed through a rich tradition of ritual, language, lore and arts can be accessed both on-site and through nearby points of interest. Farmstead activities and earlier eras of resource exploitation also offer rich interpretive opportunities, many of which are earth bound — seasonally tied to soil, water and plants. When viewed in this light, Millbrook Marsh provides an ideal setting to explore the relationships between rural and urban cultures and nature.

The historic forebay bank barn, other outbuildings and minor reconstructions (e.g., livestock sun shelters) can serve dual roles; as artifact, they reveal the past; as structure, they accommodate human use. Landscape patterns of field and hedgerows are reminders of a bygone era of bounty and toil, and can likewise adapt to a new era of outdoor discovery and meaning. The nearby Centre Furnace Mansion is a strategic ally. These local features are key to explaining the evolution of the farm and surrounding rural landscape. They may also serve to anchor a greenway/gateway, in which Millbrook Marsh and the mansion serve as focal points in an extended open space system.

Principles

- Invest in programs that bring together intellectual, experiential and sensory interactions—wetlands are complex and demand multiple ways of knowing. Programs should seek a balance between information and experience in stimulating knowledge, respect and wonder. This is consistent with Leopold's nature ethic, where contact with the "stuff" of nature was essential to the perception of how things came to be the way they are and how they maintain their existence (Leopold 1949, p. 173).
- Work with the processes and characteristics peculiar to wetlands. As *systems* they are complex, dynamic, and not easily made legible to the casual visitor. As *landscapes* they are immersive and intricate, requiring a quiet patience that distinguishes this from other "attractions". To facilitate understanding, therefore, requires a variety of approaches. Structures (boardwalks, paths, interpretive nodes) should be sited and designed so as to permit engagement with the spaces and nuances of the site while minimizing their inherent intrusiveness.
- Reproduce some of the features and processes inherent in the larger wetland through activities and installations on the Farm 12 complex. For example, a created pond and fringing wetland can provide a more accessible, intensified version of similar but more dispersed elements found in the adjacent natural setting. Likewise, new upland communities —native meadows, successional communities, forested nodes and corridors—contribute to overall ecological restoration of the area and allow for a closer interaction between nature and people. Insights and skills gained through this "packaged" format can then be more readily transferred to the more challenging wetland setting. These installations also serve to deflect some of the inevitable impacts that result from concentrating people in one area. Be consistent in acknowledging that these installations are *representations* of more naturalistic features found in the marsh.
- Integrate education and interpretation within the full scope of Center activities. Resource management thrusts, for example, should actively include visitors whenever possible. Then, tree plantings become not just an educational opportunity, but an act of participatory stewardship and a shared aesthetic and recreational experience. If repeated on a periodic basis, such programs can actually contribute *back* to the site, enhancing ecological function and, perhaps, a sense of personal and collective renewal.
- Use narrative, drama, and other creative arts to stimulate a deeper connection to the nature and culture of Millbrook Marsh. Sciences, arts and humanities all have a role to play in engendering learning and empathy with the site and its inhabitants.
- Explore the relationships between the various scales of ecological systems at hand in and around Millbrook Marsh. One primary emphasis should be the nested characteristic of the marsh, and its indivisibility from larger watershed and regional contexts.
- Acknowledge that program activities can be as environmentally intrusive as structures and vehicles. All programs should be carefully designed, piloted and monitored for their compatibility with natural values on site.

Recreation Principles

Millbrook Marsh has provided accessible, quality recreational experiences to the people of Centre Region for decades. Angling, casual hiking, nature appreciation and other passive uses have co-existed with few serious conflicts. Clearly, however, levels of use have traditionally been fairly low. Trails are only lightly traced along stream margins, and there is almost no sign of erosion or other forms of site degradation common to other more intensely used natural areas. The site's tradition of stream-related activities and its ability to absorb reasonable levels of passive use suggest several principles for sustainable recreation in the future.

Principles

- Be considerate of traditional uses, such as angling and hiking, as important aspects of the site's heritage. To the extent that they are consistent with other goals noted above, they should be integrated as valid activities.
- Inform recreational users of the site's sensitivities, and include them in ecosystems management efforts. Make evident the site's limited capacity to sustain human use; susceptible soils, vegetation and animal habitat require that all activities on site be managed more actively than in the past. An organized and well-programmed network of paths and boardwalks should help pattern recreational activities that are sympathetic with the site's natural and cultural values.
- Invite recreationists to view the marsh as an ecosystem rather than a commodity. Encourage recreational users to partake in interpretation and monitoring programs. This distinct constituency may prove invaluable in protecting wetland values and furthering the goals of the Center.

Management Zones

The purpose of establishing management zones is to advance the goals noted above through the application of policies and management interventions within generally contiguous areas of the site. For each of the three zones (Map 7) a rationale and location is given, as well as policies that serve to:

- direct *activities* by type and level of intensity to appropriate areas of the site;
- outline basic *management programs* (ecological restoration, monitoring, habitat creation, etc.) for areas or features on site;
- suggest type and extent of *structural installations* (boardwalks, paths, parking lots, buildings, etc.) which advance educational and recreational objectives while respecting site values.

Wetland-Riparian Zone

Basis and Landscape Position

This zone represents the core area of the Millbrook Marsh holdings. Diverse hydrologic and wetland ecological functions provide a range of important values, some of them unique to the Centre Region. Since many of these functions are highly sensitive to human-induced impacts, preservation and conservation over the long term are of paramount importance.

The position of this zone is a reflection of wetland vegetation, hydric soils, and hydrology (e.g., flooding limits, stream meanders). Taken together, these features and processes delineate a large central core. Within this core is a smaller, regionally unparalleled ecosystem - the fen - currently in private ownership. The wetland area in the northwesterly portion of Farm 12 and Bathgate Spring Run extending to Puddintown Road are also designated within the Wetland-Riparian Zone.

Intent. The values represented in this zone are both fragile and rich. Correspondingly, the mandates of this zone are: 1) to conserve and enhance ecological and hydrologic functions; and 2) to provide opportunities to learn about these functions and appreciate the beauty of the wetland ecosystem.

Activities and Facilities. Appropriate activities include nature education and appreciation, angling and hiking, and discreet scientific research that promotes the integrity and understanding of the wetland system. These activities are facilitated through the intentional and careful siting of paths, boardwalks and pedestrian bridges, viewing structures and educational stations. On-going monitoring of activities, facilities and ecological responses will help ensure the long-term viability of the wetland-riparian complex. Low-intrusion research installations (e.g., monitoring wells and vegetation transects) are appropriate, if consistent with the above-noted intent.

(Potential) *Preservation Sub-Zone*. This zone is proposed for the fen ecosystem - currently in private ownership - if the property becomes available. Prospective activities and structures would be extremely limited, with the emphasis on ecological preservation to ensure the perpetual integrity of the fen. Boardwalks, paths and all other structural intrusions would not be permitted. Very carefully crafted and controlled scientific research and monitoring may be permitted, if consistent with the primary objective of ecological preservation. To accommodate distinctive educational opportunities, visual access may be achieved through discreetly placed, boardwalk-accessed viewing structures set in the adjacent Wetland-Riparian Zone.

Transition-Buffer Zone

Basis and Landscape Position

This zone recognizes the urban influences encircling the site. Traffic noise, visual intrusions, disturbed soil regimes, surface runoff and invasive non-indigenous species are some of the more significant impacts present throughout this peripheral area. Fostered by fertile upland soil conditions and proximity to adjacent cultural features and roads, this is also the setting for a variety of on-site human activities, including access trails and outdoor group activities.

Intent. The Transition-Buffer Zone is decidedly more accommodating and resilient than adjacent and lower wetland areas. Essentially ringing Millbrook Marsh, this zone promotes ecological buffering and serves as a transitionary space between uplands and the more sensitive lowlands.

Activities and Facilities. Appropriate activities include nature education and appreciation, access for anglers and walkers, and controlled research functions. Primary management activities include the control of invasive plant species and the restoration of native species. Native vegetation should be planted in some currently open field areas to provide animal habitat, serve as ecological corridors and buffers, and define naturalistic outdoor activity spaces.

Pathways and other non-intrusive infrastructure are permitted, providing they are carefully integrated and consistent with the goals and principles of the property. Any future stormwater management installations must ensure that wetland and stream functions (both ecological and hydrologic) are not compromised.

Structures will be limited to those that advance education and interpretive objectives; these could include a nature center building, sunshelters, defining fence rows, storage sheds for education purposes, and other installations that accommodate appropriate site activities.

Cultural Zone

Basis and Landscape Position

The Cultural Zone is applied to areas where intensive human activities are present or anticipated in settings up-gradient of the Transition-Buffer Zone. Heavily utilized agricultural landscapes and areas such as the Farm 12 barnyard complex and the quonset hut are valid uses that complement the aforementioned management zones. In accommodating education and appreciation of both cultural heritage and natural history, this zone celebrates the synergies that can be achieved when human and non-human communities find a more sustainable balance.

Intent. The intent of this zone is to provide a program- and facilities-intensive land base that meet the primary educational objectives of the Millbrook Marsh Nature Center. It is intended that this zone complement the general mission of protection of the adjacent Millbrook Marsh system, while demonstrating a heightened level of sustainable land use in its own right. Agricultural activities should celebrate and interpret the site's heyday as a dairy farm and a landmark along Puddintown Road.

Activities and Facilities. A myriad of activities may take place within the Cultural Zone, providing they are consistent with the overall mission and goals of the Center. Both indoor and outdoor activities should focus on the natural and cultural heritage of the wetland, Farm 12, Bathgate and their watershed context. Low-intensity pasturing and forage cropping may be appropriate in the fields fronting Puddintown Road, providing they are managed in a sustainable manner. Large group activities and general gatherings should be confined specifically to this zone.

Facilities should reflect the agricultural heritage of the farmstead, including adaptive re-use of Farm 12 structures, a possible four-season nature center building, outdoor shelters and information kiosk, a porous parking lot and access lanes, defining fence rows, discreet signage and lighting, native plantings and interpretive nodes.

Monitoring Protocol

Our recommendations for monitoring focus on two aspects of the Millbrook Marsh Nature Center, the lack of comprehensive inventories for both flora and fauna, and the continuing evaluation of actual and potential environmental impacts to the site. As with any monitoring effort, the collection of data is warranted only if there is a clearly defined, intended use, and a repository for the information.

Ecological Inventories

This report, and the studies cited within it, serves as a beginning point for compiling a thorough baseline inventory of the plant and animal species that inhabit and visit Millbrook Marsh. We recommend that further natural history information be gathered by encouraging local naturalists and scientists to conduct informal and formal inventories and studies. There should be a repository for this information, which ultimately should be located at the site. Until suitable facilities are available, either the Centre Region's Parks and Recreation Department, The ClearWater Conservancy, and/or the Penn State Cooperative Wetlands Center should collect that information. A sign indicating the preferred location and a reporting procedure should be posted at the barn, trailheads, and future information kiosk. Formal studies should be coordinated by completing the Research Request included in this plan (page 73). At this time, routine requests will be reviewed and approved by the Director and Staff of the Penn State Cooperative Wetlands Center (CWC). Studies requiring broader scrutiny will be referred to the Millbrook Marsh Nature Center's Advisory Committee for consideration.

There is a urgent need for inventories targeted at amphibians, reptiles, terrestrial invertebrates, and non-vascular plants, for which little information is available. More comprehensive inventories for vascular plants, birds, and mammals are needed as well. The CWC plans to continue mist netting of birds periodically in strategic locations to gather data and for demonstration purposes.

Environmental Impacts

As a means to detect changes in the ecological integrity of the Millbrook Marsh Nature Center and its surroundings, we recommend that the aquatic inventories of streams and wetlands, as described in this plan, be repeated at approximately five-year intervals. If at all possible, the sampling methods and locations should be identical to the ones used for this plan. Brooks (CWC) and Carline (Pennsylvania Fish and Wildlife Cooperative Research Unit) can provide detailed methodologies upon request.

It is recommended that permanent plots and instrumentation be installed to collect periodic data that can be used to define trends. Examples of these permanent sampling procedures and equipment include; stream gauging stations, automatic water level wells (five wells are currently being monitored by the CWC), sediment disks (another CWC activity), permanent plots to monitor changes in existing plant communities and the spread of existing invasive species, and permanent photographic stations to provide a historic record of changes in vegetative structure (Brooks will establish these in 1998). All permanent stations and plots should be marked with metal reinforcing rods (rebar) that are unobtrusively flagged and located on a map.

The collection of data on water and sediment chemistry on a periodic basis is desirable, but expensive. These efforts should be coordinated with other sampling programs conducted by local, state, and federal agencies that monitor water quality. The Spring Creek Watershed Community is developing a program to sample water quality as it relates to non-point source pollution in the Spring Creek Watershed; Millbrook Marsh and its tributaries should be included in this program.

We are particularly concerned about removing invasive species, such as purple loosestrife and Japanese knotweed, should they be sighted in the marsh. Visitors and other volunteers should be encouraged to report these sightings to the Parks and Recreation Department. In addition, local citizens and frequent visitors to the site could be encouraged to report observations of other actual or potential environmental hazards to the Parks and Recreation Department. Volunteers and staff The staff and volunteers of ClearWater Conservancy are currently developing protocols and forms for monitoring natural heritage sites in the area, which would include Millbrook Marsh. It is anticipated that this type of observational sampling at Millbrook would occur 2-4 times per year.

The Millbrook Marsh Nature Center should be a key partner in all of these monitoring activities. The authors are willing to work with all parties to implement these monitoring s and to participate in the analysis of the data that is gathered.

RESEARCH REQUEST AND AGREEMENT
FOR USE OF
MILLBROOK MARSH NATURE CENTER

RESEARCHER(S):_____
AFFILIATION, ADDRESS, PHONE, FAX, EMAIL: _____
_____
_____

BRIEF DESCRIPTION OF PROJECT (ATTACH MAP AND LOCATION DESCRIPTION) AND FIELD ACTIVITIES THAT WILL TAKE PLACE:_____
_____
_____
_____
_____

PROJECT STARTING DATE:_____

PROJECT COMPLETION DATE: _____

WILL THE DATA BE AVAILABLE TO OTHER RESEARCHERS? _____

WHERE WILL THE RESEARCH PROJECT FILES BE STORED UPON COMPLETION OF THE PROJECT?
_____
_____

SPECIAL CONCERNS WITH RESEARCH AREA: _____
_____

I AGREE THAT WHEN THIS PROJECT IS COMPLETED, I WILL BE RESPONSIBLE FOR REMOVING ALL EVIDENCE OF THIS PROJECT AND RETURNING THE SITE TO AS NATURAL OF A STATE AS REASONABLY POSSIBLE.

_____
SIGNATURE(S) OF RESEARCHER(S)

PROJECT APPROVED BY:_____

DR. ROBERT P. BROOKS, DIRECTOR.
PHONE 814-863-1596
FAX 814-863-7193
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PENN STATE COOPERATIVE WETLANDS CENTER
301 FOREST RESOURCES LAB
PENNSYLVANIA STATE UNIVERSITY
UNIVERSITY PARK, PA 16802

ON BEHALF OF CENTRE REGION PARKS AND RECREATION

Recommendations

Ecological

Hydrology and Aquatic Habitats

- Adoption of best management practices (BMPs) for stormwater in the Spring Creek watershed is critical for the long term health of the Millbrook's streams and wetlands. Thus, we recommend that adoption of BMPs for stormwater be considered by the surrounding municipalities and University.

- The community should strive to eliminate any additional stormwater flows and work toward reducing existing storm surges into the marsh. Enhanced infiltration and detention of stormwater in the developed portions of the watershed are paramount to protect Millbrook Marsh.

- We recommend that a shallow wetland/pond be constructed on Farm 12 in the near future to complement the adjacent aquatic habitats on site and enhance interpretive opportunities.

Stormwater Management. Stormwater runoff into the streams and wetlands of the Millbrook Marsh Nature Center will continue to have negative environmental impacts as the State College area becomes more urbanized. There is evidence that high stream flows have altered the morphology of Slab Cabin Run through downcutting of the stream bottom. In addition, heavy sediment loads originating in upstream urban and agricultural areas may be depositing abnormally high loads on the wetland during flood events. This could potentially alter the composition of the plant community within the site.

The macroinvertebrate communities of 5 of 6 sampling stations reflected moderate degradation, which is probably due to impaired water quality associated with this urban runoff. Besides the usual mixture of heavy metals and petroleum derivatives in stormwater entering Thompson Run, there is a substantial sediment load in the stream originating from the ditch that conveys stormwater to the Duck Pond. Stabilization of this ditch, as planned, will greatly benefit the aquatic communities in the wetland complex.

Shallow Wetland/Pond Construction. The creation of a shallow pond and fringing marsh would provide an intense aquatic study site in the appropriate Transition-Buffer Zone, relatively free from the constraints evident in the more dispersed natural wetlands beyond ("K" on Map 9). A pond would also be consistent with the heritage of farm ponds in the region. Pond studies for school groups and researchers alike could be accommodated structurally by a small deck, limestone slabs, or geotextile-underlain gravel. Native plantings could mimic a range of plant associations: floating and emergent hydrophytes, shrub-scrub and, along the north side, overhanging trees. If connected via a planted corridor to the adjacent woodlot and wetland, one could expect a variety of riparian and upland related fauna. Migratory waterfowl and waterbirds, too, might use the pond on a seasonal basis, thus further enhancing opportunities for close observation of wildlife.

Several pond locations have been considered. Initially, it seemed logical to position the pond in the northeast field of Farm 12, adjacent to the small wetland (#56) and hydrologically connected to the Bathgate Spring Run. Upon further analysis, however, it has become evident that this could disrupt surficial flow which may be partially feeding the wetland. A second, equally strategic position would be in the field to the rear of the barnyard. Preliminary indications of a wet depression suggest a mid-point position between the two fence lines. If this site proves sufficient

to sustain a shallow marsh pond, there would be excellent potential to link this habitat with an extended boardwalk and other pathways.

Pond size and morphology should reflect objectives of high biodiversity and water quality and low maintenance. Generally, a pond 0.1 ha (0.25 ac) in surface area will accommodate a suitable range of breeding macroinvertebrates, selected fish species, herptofauna and several species of migratory waterfowl. Water budget calculations will need to consider infiltration, evaporation, transpiration and storm flows (in and out) to ensure adequate turnover and good water quality. In general, 25 to 50 percent of the water surface area should be between 0.5-1m deep (2-3 feet)(Brittingham 1991). Shallowly sloping, edges for amphibian and reptile access and shorebird feeding, subsurface shelves to support aquatic plants, a deeper hole for overwintering fish, and a waterfowl nesting island and nesting structures could all be incorporated into the overall pond design (USDA-SCS 1982, Brooks et al. 1993).

Vegetation

- We recommend a proactive program to control invasive species, including the active re-introduction of native plant associations.
- A *Vegetation Management and Restoration Plan* should be prepared for the restoration and creation of specific, desirable native plant communities and wildlife habitats. This can be accomplished, in part, by encouraging natural succession and planting desirable native species as needed.

Native Species. Native plant species, along with aquatic habitats, form the basic building blocks for a healthy, functional biotic environments in the Millbrook Marsh Nature Center. As elaborated in section on wetland and vegetation, native plant communities on site still exhibit some characteristics of species richness and integrity, particularly wetland areas. However, human-induced disturbances have significantly fragmented and impoverished most of the site. Agricultural and landfill activities around the fringes of the marsh have created a situation of ecological stress, and disturbed hydrological regimes are prevalent in all corners of the site. Invasive plants, as discussed above, have in some areas of the site entirely replaced native plant communities. Thus, the "management" of native species is more a matter of directing interventions that seek to ameliorate those conditions which limit the ability of nature to heal itself. This will require re-establishment of more natural hydrologic regimes and protection of existing soil resources. The recommendations are discussed in greater detail below.

Management of Invasive Plants. Because a range of natural resource values are at stake, it is wise to begin assuming responsibility for management and control of invasive plants in Millbrook Marsh. Three approaches can be identified. For comparative purposes, several of the species of primary concern in Millbrook Marsh will be addressed in each ("A" on Map 9).

1) *Direct management* primarily involves application of physical, chemical and biological interventions to the stand of invasive plants. Simple physical removal is one apparent solution, but will quickly prove unsatisfactory because of the shrub's ability to resprout from any remaining root stock. More frequently, managers have advocated direct management through chemical means: the application of a non-persistent systemic herbicide, such as Roundup®, to cut stems to effect a complete kill. Biological interventions—usually the introduction of a herbivorous insect originating from the same source as the invasive host plant—are often considered where physical and chemical approaches have shown to be ineffective, for example, with purple loosestrife.

Directing ecological succession is a common secondary management effort, often entailing the inter- or under-planting of robust, early successional native woody and herbaceous species. The objective is to out-compete the invasive plant. For example, after an initial round of honeysuckle

eradication, riparian species such as ash (*Fraxinus* spp.), willow (*Salix* spp.) or red-osier and gray dogwood (*Cornus* spp.) can be interplanted to prevent the honeysuckle from re-sprouting through canopy closure and root competition.

2) *Indirect ecological management* is gaining momentum as a more holistic approach to dealing with aggressive, non-indigenous plants. It stresses the importance of early plant detection, modification of human activity, and manipulation of system attributes as components of an ecological approach to modifying plant invasion (Hobbs and Humphries 1995). Unfortunately, the existing disturbance regime in Millbrook Marsh is already well-established: flashy hydrology, landfilled areas, a ready seed source from surrounding suburban landscapes, and a degree of on-site trampling. For example, there is little precedent for successful indirect management of honeysuckle where extensive thickets are already well-established. A literal interpretation of this approach would see the wholesale removal of deposited fill and the reestablishment of pre-disturbance landform, soil and hydrologic regimes. Indications are that this would essentially result in the restoration of the fen environment.

Once control and native revegetation tactics prove successful, indirect ecological management becomes more feasible. For example, people and deer management would reduce trampling and exposure of an open seed bank, thus limiting the potential for invasives such as garlic mustard to become re-established.

3) *The do nothing option* is a management option that is gaining renewed interest, albeit with ecological overtones this time around. Eastman (1995) argues that there is no definitive solution to the challenge of invasive species and, therefore, we should tolerate them as best we can. He cites community self-regulating mechanisms (herbivory, diseases, etc.) for their ability to moderate invasive dominance over the long term. The invasive plant is eventually integrated into a stable but changed ecosystem.

This perspective would be pragmatic in its recognition of Millbrook Marsh as a disturbed ecosystem within a quickly-urbanizing watershed. On the other hand, this stance can be seen as fatalistic - it denies the real progress made in restoration ecology over the last decade. And it belies an inherent pessimism: that any human intervention is, in the long run, bound to fail. Finally, it under-emphasizes the extensive damage invasive plants have inflicted on many stressed ecosystems across the continent.

We would suggest that the application of new ecological knowledge within an adaptive management approach - where monitoring and responsive-but-cautious interventions are essential to both long-term success and a heightened understanding of ecosystem dynamics - is the most appropriate approach for Millbrook Marsh.

Priorities for control or removal of invasive species should be directed at those that pose the greatest ecological threats, namely those that:

- replace key indigenous species;
- substantially reduce indigenous species diversity, particularly with respect to the species richness and abundance of conservative species;
- significantly alter ecosystem or community structure or functions;
- persist indefinitely as sizable sexually reproducing or clonally spreading populations;
- are very mobile and/or are expanding locally (SER 1994).

Continuous monitoring over a period of several years may be necessary to check for the spread of small clumps and/or recurrences after implementation of control measures. Aerial photography and field measurements are essential in building a geo-referenced data set on abundance and density.

Tracking with a global positioning system (GPS) should be considered for its ability to pin-point even subtle expansions or contractions of plant populations. The principles and priorities noted above should be considered in advance of any action in the field. The most environmentally benign approach should be used whenever possible.

Control Measures by Species. Honeysuckle - Light infestations may be cleared by hand with a shovel or grubbing hoe, provided the entire root is removed. However, since honeysuckle tends to stock its own prodigious seed bank, any soil disturbance is likely to be reflected in multiple sprouts the following spring. As noted previously, a single cut is inadvisable because of the plant's capacity to resprout. If a long-term commitment is made, a severe initial cut plus on-going clearing of seedlings and resprouts may be effective (Luken and Goessling 1994).

Severe infestations may be controlled by application of glyphosphate herbicide. Glyphosphate, like all biocides, should be used with restraint and applied carefully. However, should other means prove ineffective, spot application can be used with minimal impact on ecosystem functions, since glyphosphate is a low-toxicity herbicide that does not bioaccumulate (Monsanto 1994, Evans and Eckardt 1995). Applied to cut stumps late in the growing season usually results in a high mortality rate. Glyphosphates are a non-selective, affecting all green vegetation, so broadcast spray application is not recommended in sensitive areas.

Prescribed burning has been used to control honeysuckle. Generally, burns conducted during the growing season will top-kill shrubs and inhibit new shoot production. These burns will also favor warm-season grasses and perennial forbs increasing species diversity and productivity. Treatment of any severely infested areas usually requires management for a period of three to five years to inhibit the growth of new shoots and eradicate target plants (Williams 1995). Obviously, burning should be conducted with great care and full disclosure to the surrounding community before proceeding.

Multiflora rose - Active control may be necessary where meadows and natural succession are to take place on Farm 12 and around the periphery of the marsh. Periodic mowing and light grubbing are common for small or juvenile infestations, but soil disruption should be kept to a minimum. More mature and entrenched stands will require other means. Cutting to the main stem and direct application of a glyphosphate herbicide during peak growth seems to be the most popular and effective means of control (Evans and Eckardt 1995). Considering the typical regenerative abilities of the rose family, monitoring of control measures is important.

Garlic mustard - Establishment of garlic mustard should be a primary concern in any areas above-gradient of the wetland slated for revegetation, boardwalk or trail construction, and non-saturated soils subject to foot or vehicular traffic. Control has included careful hand-pulling prior to seed ripening, but severe infestations are most often treated with herbicides. Since it is a biennial, its first year basal rosette can be treated with a glyphosphate in the late fall, although follow-up treatment is usually required. Prescribed burning early in the growing season has also been used with some success but, again, follow-up treatment of new sprouts are required. In his search for biological controls, Blossey (1997) has noted that all of these methods are most effective only in the short term. Furthermore, some infested areas on Millbrook Marsh may be mixed within a fire-intolerant community.

Autumn olive - Because of Autumn olive's high seed germination rate and ability to resprout if cut or burned, there are few effective control methods at the present time besides herbicide application Spot application of glyphosphate to cut stumps in early fall is effective. Other managers have used basal injections of triclopyr at very low concentrations, with good success (Eckardt 1995).

Common buckthorn - Recommended control methods for buckthorn are similar to Autumn olive, due to high seed dispersal rate vigorous resprouting following top removal. Burning and hand

pulling are generally not considered effective; there has been some success winter girdling, as well as underplanting of hardwood saplings to effect light competition (Converse 1995). The most effective means of control is the spot application of glyphosate herbicide to stumps early in the Fall. Glass (1994) has found low-volume basal bark treatment with triclopyr (Garlon 4®) 97 percent effective.

Purple Loosestrife - An effective control for purple loosestrife has yet to be found. Early detection of the plant is important as small populations are more successfully controlled than large, entrenched populations. For small stands, uprooting by hand is often recommended. Pulling should be completed before flowering so as not to scatter seed, and plant fragments should be minimized. Burning is the preferred method of disposal. Follow-up treatments are often necessary on new plants which sprout from seed persisting in the ground. Digging plants out is not recommended as this creates disturbance, which may favor the spread of the species. Other conventional means — mowing, burning, and herbicide application— have proved expensive and environmentally degrading (Blossey 1997). Treatment with Rodeo® has often been used to control second and third generation seedlings which often follow initial eradication.

Cornell University's Center for Biological Control of Non-Indigenous Plant Species is spearheading a campaign using natural biological enemies to prevent purple loosestrife from expand its range. The objective of this biocontrol program is to restore the self-regulatory potential of plant-insect interactions, which, in the case of purple loosestrife requires the use of European insects. Four host-specific insect species (two weevils and two leaf-eating beetles) have been approved by USDA for release in infested areas. The strategy is to achieve long-term control, not complete eradication (Blossey 1997). Note, however, that Eastman (1995) contradicts these findings, contending that European results using biological control have been unimpressive. A more detailed control program, including monitoring suggestions, based on work by Blossey (1997) is available from the authors.

Japanese knotweed - Because this plant is poised just upstream along Slab Cabin Run, monitoring should key into this species. Establishment of a few individuals can be prevented by manually removing the entire plant. Small stands may be controlled by repeated cutting, which may need to be supplemented by native revegetation once growth has been reduced (Seiger 1995). The City of Toronto (1997) is conducting controlled test plots, wherein volunteers hand-pull the weed and revegetate the disturbed soil with fast-growing willow (*Salix*) saplings.

Native Plantings and Field Management

Upland Forest Restoration. The regeneration of small, interconnected forest stands is crucial to the overall long-term integrity of Millbrook Marsh. Enhanced forest habitat, improved ecological transition from cultural landscapes to wetland settings, strengthened visual buffers and spatial definition, moderated microclimate for human activities—all build a compelling case for the expansion of forest cover.

From a landscape ecology perspective, an increase in the size of the Farm 12 woodlot complex, to perhaps double its existing area, would result in much enhanced forest habitat. This strategy would effect a better balance of ecosystems; currently, "edge" habitats and related generalist species dominate the site. Woody plantings shown as "G" and "H" on Map 9, would serve to link the Niebel's woodlot with the the pond, providing a conduit for wildlife and "animating" barn-based nature studies. Plantings in the back field ("I" on Map 9) would serve to bolster the size of the Neibel woodlot, serve as an added buffer to outdoor activities, and create a series of outdoor "rooms" that are more human-scale than the current setting. The result is a new naturalistic environment for both humans and wildlife characterized by a high level of variety and choice.

Another area of key interest, is the old grove of Bur oak along Slab Cabin Run. These few specimens are over mature and seedlings and saplings are not present, possibly due to browsing pressure by deer. Thus, it is not too soon to consider a replacement plan of planting similar native seedlings and saplings in their vicinity. Since this grove has been an attractant to local users for years, the proposed boardwalk and path is designated to bring visitors to this point. Keeping this scenic place intact will preserve a unique feature of the site and tie it into other old growth trees found at Slab Cabin Park.

A number of techniques can be considered to establish wooded growth. One effective but materially intensive method, combines the planting of a closely-spaced nurse species of hybrid poplar (*Populus* spp.) with heavily mulched underplantings of native hardwood seedlings and saplings. Canopy closure is quick, reducing weed competition and limiting the affects of rodent girdling. After several years, the poplars are culled and the near-caliper sized hardwood trees are ready to mesh canopies (HSW 1989). Squirrels and birds help to recruit acorns and other seeds from nearby sources. Human volunteers can perform a similar function.

Other methods include the use of translucent plastic sapling shelters (Tubex®) which guard against rodent girdling, provide a protective microclimate, and somewhat limit weed competition and deer browsing. These are popular locally and across the northeast in reforestation projects involving oak (*Quercus* spp.) and hickory (*Carya* spp.). "Nucleation" entails the planting of clumps of larger caliper trees which are ready to produce seed; these are then permitted to regenerate outward from the center of the clump. Conventional planting of saplings in small mulched tree pits may also be tried, however, mortality is often high due to impacts from weeds and rodents and inhospitable microclimatic conditions. It is recommended that a *Vegetation Management and Restoration Plan* be prepared to provide an in-depth, phased approach to reforestation and other plant communities described below.

Sustainable Pastures and Native Meadows. Map 9 shows the recommended landscape management approach for Farm 12 pastures that are to be adaptively re-used as open space. Two basic vegetation covers are shown ("F" and "H"), each requiring conversion from the current dominant non-native cool-season grasses: F - new warm-season grass pastures along the cultural "front face" of Farm 12; and, H - native mixed grass/wildflower meadows in open areas of the rear fields.

The latter provides an ecological transition habitat between pasture and woodland, and provides greater opportunity for wildlife-human interaction by obscuring movement of visitors. Aesthetically somewhat more unkempt than grass pastures, these plant communities are best located back from Puddintown Road. The native pastures, as noted below, may provide for both light grazing and hay production, while requiring almost none of the fertilizers and biocides typical of non-native crops.

Although the scenario of native prairies and meadows may seem inconsistent with the image of dominant forests in central Pennsylvania, there are historical precedents of persistent tall grass-dominated landscapes in this region. The existence of a prairie community - the Great Plain of Penn's Valley - was determined by Losensky (1961). His hypothesis was that these ecosystems were relics of a vast prairie peninsula extending eastward from Ohio that formed during a lengthy warm, dry climatic period several thousand years ago. It apparently covered an area of several hundred hectares up until the time of settlement in the late 1700s. The area supported a number of species normally associated with prairie habitats of the Midwest, including native warm season grasses such as grama grass (*Bouteloua curtipendula*), panic grasses (*Panicum* spp.), Kalm's brome (*Bromus kalmii*), little bluestem (*Schizachyrium scoparium*), Indian grass (*Sorghastrum nutans*), and big bluestem (*Andropogon gerardii*). The last two species have been noted as excellent forage plants (Brown 1979); in fact, the feed value of warm-season grasses is generally comparable to that of non-native cool season grasses (Ernst 1996). Representative herbs in the

Great Plain included whorled and green milkweeds (*Asclepias verticillata* and *viridiflora*), long-fruited anemone (*A. cylindrica*) and hoary vervain (*Verbena stricta*) (Losensky 1961).

Planting of native pastures should occur in late spring once soils have reached at least 55° F. The conventional approach entails seeding with a no-till drill preceded with herbicide application to control existing perennial pasture grasses. A more benign, but less instantaneous, method entails what is known as "successional restoration" - the seeding of scarified, unplowed pasture with conservative native species. This method can take up to 5 years to yield results, since it relies on the building of below-ground root biomass as native prairie species prepare to out-compete non-native grasses and weeds (Packard 1994). The proposed mixed meadow will require the introduction of herbs, resulting in heightened biodiversity and providing for enhanced wildlife and insect cover and food. Native wildflower and grass seeds may be mixed and applied with a broadcast seeder. Where a higher intensity of color and more immediate habitat value is needed rooted plugs can be installed in "drifts". Plugs should be contract grown in advance, using seed or cuttings collected from local sources.

Prescribed fires are the most ecologically appropriate means of managing native meadows and grasslands. Controlled fires every several years also burn off duff and reduce the probability of a natural fire outbreak. If fire is selected as a management tool, it is recommended that a fire management strategy be developed in conjunction with the local fire officials and neighbors, and be incorporated into the recommended Vegetation Plan.

Mowing at a height of 15 to 20 cm (6-8 in) is a fall-back method of keeping woody succession at bay and ensuring persistent herbaceous growth. A late winter or early spring cut is preferred for several reasons: it coincides with the seeding period of warm-season grasses, it stretches winter habitat availability, and it maintains the beauty of tallgrass meadows as long as possible (Lambert 1992). Mowing should be scheduled to minimize interference with breeding grassland and forest-edge birds; after July 15 is a reasonably safe date, although later is even better.

The detailed *Vegetation Management and Restoration Plan* should include a strategy for establishment, maintenance and monitoring protocols for proposed native pastures and meadows. Related issues such as soil impoverishment, seed collection of local genotypes (within a 15 to 20 mile radius), and on-site propagation using volunteer help should also be an integral part of the implementation process.

Old Field Succession. Perhaps one of the most dynamic ecological lessons to be learned on site is one that requires relatively little human effort and resources: old field succession, or natural change. Map 9 ("I") designates several areas for transition from pasture/woodlot edge to herbaceous and woody old field. A variety of worthy educational themes would be available: underlying geologic and soil processes, nutrient and energy cycling, climatic and microclimatic influences, the role of birds and other wildlife, etc. Larger ecological debates—for instance, "balance-of-nature" versus "flux-of-nature" views— are neatly encapsulated in any landscape undergoing successional change. Young students would be especially likely to benefit from "growing up" with successional ecosystems on site.

Areas designated as successional old field are sited adjacent to forested areas so as to provide a continuum of plant communities from pasture to woodlot. This also serves to canopy cover in wooded communities, and helps strengthen the ecological corridor that links the proposed nature center with the existing woodlot. Successional areas are generally intended to move through all stages over the next century or so. Three to four decades of growth should result in early successional forest. Representative species might include ash (*Fraxinus* spp.), elm (*Ulmus* spp.), red cedar (*Juniperus virginiana*), bigtooth aspen (*P. grandidentata*), black cherry (*Prunus serotina*) and gray birch (*Betula populifolia*), and red maple (*Acer rubrum*), among others. As the site program, facilities, and landscape setting are tested through time, a clearer image of spatial

requirements will be formed. Active management (ecological disturbance) may then be required in some areas to "freeze" or recycle succession in order to accommodate other objectives of the Center.

Riparian Vegetation. Planting of streambank vegetation provides riparian habitat, improves bank stability, enhances water quality, shades the stream and contributes organic detritus to the benefit of aquatic organisms (Davis et al. 1994). Generally, the riparian edge along all streams on site should be well-vegetated and vertically stratified. Streamside plantings can be used in conjunction with careful regrading to bio-remediate bank failures evident primarily along Slab Cabin Run. The Bathgate Spring Run on Farm 12 proper should likewise have a vegetated buffer strip; it should be primarily herbaceous, to ensure the continuity of open space in this area. Open reaches along the larger streams may be revegetated without the use of fencing, but narrower sites, such as Bathgate Spring Run, should be defined with woven wire fencing to delimit the extent of mowing/prescribed burning of adjacent fields and to keep any grazing livestock well back from open water. Since the list of appropriate riparian plants is a long one, a native species palette should be determined during the preparation of detailed planting plans (Banski et al 1996). Seed, rooted cuttings and containerized plants should be obtained from on-site or locally-available stock whenever possible.

Hedgerows. Most hedgerows on site are relatively free of woody plants, indicative of recent on-going maintenance. Generally, the plan envisions that natural succession would be permitted along fence lines. This would permit reduced mowing and spraying, enhance edge habitat, define outdoor activity spaces and screen undesirable views. Appropriate native woody species could be installed to speed up screening where it may be most desirable; species could include the native cherries (*Prunus* spp.), hawthorne (*Crataegus* spp.), native roses (*Rosa* spp.), raspberries (*Rubus* spp.), sumac (*Rhus typhina*), viburnums (Viburnum spp.), serviceberry (*Amelanchier* spp.), red mulberry (*Morus rubra*), aspen (*Populus tremuloides*) and red cedar (*Juniperus virginiana*). Since fences represent perches from a bird's perspective, these strips will have to be monitored for invasive species such as honeysuckle, privet (*Ligustrum* spp.) and Multiflora rose, among others.

Specialized plantings. Strategic plantings for wildlife habitat can focus activity in key areas. One important location for such installations would be the habitat demonstration area shown on Map 9 "L". For example, nectar-producing plants can be concentrated to attract butterflies (old field and edge habitat would be required nearby to provide plant hosts to accommodate caterpillar feeding and reproductive activities). Planting of native evergreens and creation/installation of snags (standing dead trees) would attract insectivore birds, provide winter cover, and offer opportunities for wildlife observation, particularly in concert with the feeding stations.

Wildlife and Fisheries

Most wildlife species respond to habitat structure, primarily vegetation, so a "build/plant it and they will come" strategy should work. Several habitat projects have already been discussed, including the shallow wetland/pond, expanding woodlot, and native meadows. These areas can be enhanced by providing suitable nesting and denning structures. The following items are appropriate for consideration at the Millbrook Marsh Nature Center.

Osprey restoration. Osprey frequently migrate through the Spring Creek watershed, spending time at downstream fish hatcheries, but no recent nests have been reported. Removal of antiquated and unused utility lines could make artificial snags available for perching and nesting. The best location would be in the center of the marsh near the confluence of Slab Cabin and Thompson Runs. This is a centrally located and highly visible area, but affords the birds adequate protection from human disturbance. A closed-circuit video camera (proposed in a later section) could provide visitors in the barn with a "bird's eye" view.

Barn owl restoration. The existing silos on site provide a unique opportunity to restore a pair or two of barn owls to the area. This species has not fared well in urbanizing settings as lawns have replaced fields, and malls have replaced barns. Since visitor access to the tops of the silos is unlikely despite their appeal as observation towers, they provide a perfect nesting site for these nocturnal raptors. The meadow vole population is very high in the surrounding fields, so one of their preferred prey species is readily available.

Brook trout restoration. Thompson Run undoubtedly supported native brook trout sometime in the past. The large inputs of groundwater from Thompson Spring, Bathgate Spring, and other springs along this reach help maintain cool water temperatures in the summer. The establishment of a wild brook trout population would require removal of the existing brown trout and rainbow trout from Thompson Run, which could be easily accomplished by repeated use of electrofishing gear. Probably, it would be necessary to close Thompson Run to fishing, or at least prohibit harvest, because brook trout are vulnerable to intensive fishing pressure and their presence may attract anglers. Native brook trout from Buffalo Run or Galbraith Gap (both locations within the Spring Creek watershed) could be transplanted into Thompson Run. Periodic surveys would be needed to monitor the brook trout and remove encroaching brown trout.

Nest boxes for other birds and mammals. A bluebird nestbox trail could be established in the fields within the Transition-Buffer areas of the site along existing and proposed paths. The central portion of the wetland and riparian corridors could support several wood duck nestboxes, and this species has been observed frequently during migration. A purple martin house would be appropriate in the vicinity of the barn, providing not only opportunities for observation, but an opportunity to discuss the role of insectivorous birds in controlling flying insects, particularly mosquitoes (which, by the way, are not much of a problem within Millbrook Marsh). Bats play a similar role in insect control, so encouraging summer maternity colonies to use bat houses located on buildings or large trees can be beneficial and educational (Williams-Whitmer and Brittingham 1996). Plans for building artificial nesting structures can be found in Hassinger (no date).

Bird feeding area. Watching birds feed is one of the most common and enjoyed interaction between people and wildlife. We suggest that over time, a bird feeding area be established for year-round viewing. The most likely place in the vicinity of the barnyard at the back of the barn where it could be incorporated with the structures and plantings in the Habitat Demonstration Area (Map 9, "L") and perhaps relate to the orientation of a new building. It could be modeled after similar arrangements at Shaver's Creek and Sapsucker Woods (Cornell University), with large viewing windows, bird identification charts, and microphones that transmit sounds through speakers to the viewers inside. The inclusion of shrubs and flowers appealing to hummingbirds and butterflies would expand the activity into the summer season, when attracting birds to feeders is usually more difficult.

Shallow wetland/pond and natural streams. A number of habitat features could be incorporated into these aquatic habitats, including basking logs for turtles, fish habitat structures, artificial nesting burrows for belted kingfishers, and the like. There is almost no limit to the number of improvements that can be made. This in itself should instill some caution in managers of the facility, so that the site does not become a cluttered demonstration area. Rather each design element should be blended into the whole fabric of the Center.

Dead and down woody material. Many wildlife species benefit from, and in some cases rely upon dead and down woody material for nesting, denning, and foraging. As trees and shrubs die or are cut down for various reasons, the material should be used. Standing dead trees, or snags support the breeding and foraging activities of dozens of birds and mammals and should be left standing provided they do not pose a safety hazard for visitors. Likewise, downed woody material such as logs and branches, provide cover for amphibians, small mammals, and their prey. As shrubs and brush are cleared for other management activities, brush piles can be constructed for wildlife cover.

Long narrow piles (2-3 m (6-10 ft) wide and 5-10 m (15-30 ft) long) or circular mounds (2-3 m (6-10 ft) in diameter are recommended. Partially buried piles of large logs and stones could serve as a hibernaculum for hibernating reptiles.

Hunting, trapping, and fishing. Local residents and visitors have engaged in these consumptive recreational activities in the past, and thus, there are cultural and historic connections to be considered. However, because the uses of the Millbrook Marsh Nature Center have shifted toward non-consumptive recreation and education, some concerns have been raised regarding the continuation of hunting, trapping, and fishing at the site. We recommend that consumptive activities not be immediately excluded, and that a dialogue with consumptive and non-consumptive users be initiated by the Centre Region's Parks and Recreation Department. Involvement of the Pennsylvania Game Commission and Pennsylvania Fish and Boat Commission in these discussions is recommended. In addition to providing the benefits of outdoor recreation to the participants, consumptive activities provide a means to manage wildlife and fish populations at Millbrook Marsh should it be necessary to control excessive numbers (e.g., deer, raccoon, fox) or nuisance animals (e.g., burrowing by muskrat, flooding by beaver).

Hunting poses the greatest possible danger to visitors. A required safety zone of 150 yd (450 ft) from buildings, legally limits the discharge of firearms to a relatively small area on the east side of the site along upper Slab Cabin Run. Once the boardwalk is in place in this portion of the site (see Map 8), hunting in this area may be ill-advised. If allowed in the future, perhaps hunting should be strictly regulated through a permit system with limits on the number of individuals and the length of the season. Trapping, primarily for aquatic and riparian furbearers, poses less of a safety concern to visitors, particularly if only conibear-style and padded leg-hold traps are allowed. Although the monetary value of furs is minimal for an area this size, the option of using recreational or professional trappers to manage problem wildlife should be maintained. Again, a strictly regulated permit system seems appropriate. Anglers pose the least threat to visitors, and probably form the majority of consumptive users. Anglers should be encouraged to engage in only the most ethical and responsible practices. They could serve as a source of information through creel surveys and personal interviews. Once the boardwalk is installed, it seems appropriate that hunter, trappers, and anglers use it for access only, conducting their consumptive recreational activities away from this pedestrian path.

Cultural

Access and Circulation

The general recommended approach to managing access to the marsh proper is to establish a formal series of portals and entry points. This aids in legibility and orientation, and implies a level of care and watchfulness that can encourage positive user tendencies. A few informal "portals" already exist to some degree, and others will need to be constructed. The primary point of vehicular ingress would occur on Farm 12, as shown on Map 8. After considerable deliberation both on-site and with the Advisory Committee and local public, it seems most appropriate to site the main entry point along the flat portion of Puddintown Road. Traffic sight lines at the point are the best available along Farm 12 frontage, and ingress to the adjacent front field is unencumbered. Incoming traffic flow would veer immediately to the right to access the graveled parking lot, situated as shown on the plan to minimize visual impact and provide a discreet, but highly experiential, pedestrian entry sequence into the core farmyard area. A double wire mesh fence row (Map 9, "R") would appropriately mirror the existing tractor path extending north from the barn, providing a sense of rhythm and perspective that should prove quite interesting. This type of fencing would also provide an effective but porous separation between pedestrians and any livestock that may be grazing the front field (Map 9 "F"). Service, handicapped and emergency access are handled via the existing or modified entry lane near the farmhouse.

A single, formal portal (Maps 8 and 9) is identified to the rear of the barnyard to serve as primary access to Millbrook Marsh proper, providing a transition from the Cultural Zone into the more natural elements of the site. It would be accessed via a stonedust path paralleling the existing fencerow (Map 9, "R3"). This route, in fact, seems to have served as the informal link between barnyard and wetland for some time. Completing a radial pattern of three tractor paths set on cardinal axes, its rather honest directness is reflective of the historically rectilinear order of the farmstead, would be in distinct contrast to the organic path network of adjacent fields and the wetlands beyond.

The portal itself is the most important transition point on site. It represents both a physical and symbolic passage from "cultural" to "natural" landscape setting, provoking a calmer demeanor and heightened sensory awareness as one enters the immersive wetland environment. Structurally, it would consist of a slightly raised timber platform to serve as gathering node and to facilitate visitor orientation. A boardwalk would extend easterly from the platform into the marsh and stream complex.

As shown Map 8, a phased network of paths, boardwalks, viewing structure and bridges is envisioned. The length of boardwalk has not been precisely determined, but is estimated to be about 300 m (1,000 ft) long. Several sets of construction materials have been considered, but at present our recommendation is to proceed with a wooden structure, similar in pattern to the one built at the Wildwood Lake Sanctuary in Dauphin Co. (Photos 10A and 10B). The construction can be phased as indicated to better manage financial constraints. There are several vistas located along the boardwalk and one or two of these could support a wildlife hide or blind that would allow better chances to observe wildlife. These would be built on spurs off the main boardwalk route to provide a more serene experience for both the observer and the wildlife.

Access along the east side of the marsh will be almost entirely by foot or bicycle. Visitors may currently approach the southeast corner of the site by foot or bike via the existing asphalt path that passes through the large Slab Cabin Run culvert beneath College Avenue. The *de facto* trail head parking lot at the College Township offices will not be encouraged as a point of vehicular access, since no control mechanisms are available, and current parking capacity cannot expand to oblige alternate uses.

Ingress for pedestrian and cyclists coming in from the northeast is likewise well-established along the bike path that cuts under the Highway 322 bypass and links up to Spring Creek Park and the Houserville neighborhood. Access to the north and west banks of Slab Cabin Run near the bypass is currently under development. The passage along side Puddintown Road beneath the overpass and over the Slab Cabin Run bridge is being widened to accommodate a bicycle lane. A combination of rough surfacing and steel traffic barriers could be installed to limit pedestrian accessibility, if desirable.

It is anticipated that a more formalized network of portals, paths and boardwalks will be most effective in managing pedestrian circulation in the marsh proper. As noted in the Principles section, low-intensity passive access along the streams and through the marsh apart from the formal trail network will not be aggressively discouraged. Rather, the intention is that the combined effects of an attractive infrastructure and proactive educational programs will serve to minimize off-trail activities to a sustainably low level.

Activities and Structures

Although a large variety of activities can be envisioned for the Millbrook Marsh Nature Center, it is prudent to take an incremental approach, cautiously building the program and evaluating each step for effectiveness and fit with the site's opportunities and constraints. From a planning perspective,

Photo 10A. Example of boardwalk construction for Millbrook Marsh (from Wildwood Lake Sanctuary, Dauphin Co).

Photo 10B. Example of boardwalk and wildlife hide construction for Millbrook Marsh (from Wildwood Lake Sanctuary, Dauphin Co.).

emphasis should be placed on program *areas* rather than individual activities; these should reflect landscape patterns and underlying processes, and should take advantage of interpretive opportunities where they may be found. Just as an adaptive approach to natural resource management has been advocated, so too should programming and related structures be flexibly linked to the Center's mission and goals.

The previously-described management zones (Map 8) should provide the primary framework for establishing activities in appropriate areas of the site. However, an idealized conception for activities and structures is given in Map 9. To avoid the static qualities of many master plans, it should be seen as an attempt to "kick-start" the process of visualizing the immense possibilities that are inherent in the site and that are represented in its already broad constituency. The plan essentially gives form to the management zones and translates ideas first raised in the discussion of Principles.

Briefly, the concept plan attempts to balance ecological and cultural forces at work on Farm 12 and the adjacent natural areas. It stresses protection of wetland resources, careful transitions/linkages between lowland and upland, a more sustainable landscape management approach, and the siting of outdoor activities and structures to take advantage of both existing and proposed features. As befits a nature center, it obliges utilities and infrastructure in a minimalist fashion, stressing integration with site qualities over efficiency. Specific activities proposed for the Farm 12 complex and wetland, by zone, include:

Wetland-Riparian Zone

general: nature education and appreciation, angling, hiking, limited scientific research

specific:

- main marsh entry portal via the boardwalk, discussed above.
- stream and marsh study and appreciation along the boardwalk and path system
- stream study along Bathgate Spring Run
- observation platforms/wildlife hides

At this time our recommendation is to restrict group activities in this zone to no more than 12 people. Repetitive use of informal paths in the wetland will have significant (and eventually long-term) negative effects on the vegetation and soils. Even when the boardwalk is available, more than 12 people in a group will degrade the experience for those in attendance. For larger groups, we suggest staging at intervals, and sending small groups to different areas and then comparing experiences later.

Transition-Buffer Zone

general: nature education / appreciation, access to stream and wetlands, research and outdoor group activities.

specific:

- pond study
- outdoor activity spaces and possible small group camping area (possibly in "H")
- interpretive stations focusing on ecological succession and invasive species
- active involvement in revegetation and habitat demonstration projects

Cultural Zone

general: study of cultural heritage and natural history, general environmental education, farm-related activities, team-building games, interpretation and celebration of the site's values and the surrounding region through art, drama, and the written word.

specific:

- forebay bank barn; multi-use three-season facility; possible marsh viewing opportunities from the barn, silos, or new structures ("M")
- barnyard "hub" ("P"); primary outdoor orientation and gathering area on Farm 12; site of group games
- sunshelters for informal small group activities and storage of related equipment; several locations have been proposed on draft master plans for the building complex
- pasture conversion studies ("F, H, I"); studies of sustainable agriculture, old field succession, etc.
- habitat creation projects and activity area ("L")

There are several specific projects we would like to suggest that are most appropriate for the Cultural Zone, but provide linkages to the more natural portions of the site. Since it is likely that many visitors will not venture into the wetland itself, installation of a closed-circuit video camera system would be an exciting way to bring the wetland and its inhabitants to the visitor, particularly those that are disabled. The camera would have a remote control to pan and zoom into various areas and a capability to switch to separate scenes (this would require multiple cameras). Of particular interest would be observations of any raptor or waterfowl breeding structures, the bird feeding area, and scenes of the marsh, particularly during flooding events.

There are two projects that are suitable for inclusion in the lower part of the barn. The first involves creation of a "pond/wetland" room (Photo 11A and 11B). Here, the visitor enters as if they were a small aquatic creature underneath the water. Instructional displays, including a possible live, magnified video view of aquatic organisms, are easily accessible. The second, which could be part of this room, involves creation of a simulated beaver lodge (using actual beaver-chewed sticks and logs) in a profile view. As the master of wetland creation, and an occasional inhabitant of the wetland, information about beaver always appeals to visitors of all ages. Both of these exhibits would benefit from having water piped through the lower barn from the Bathgate Spring Run.

A Concluding Recommendation

This Plan, and the Principles and Recommendations included within it, are designed to guide first, the protection of the site, and second, how management should proceed. What we have presented here is but a beginning to the many projects, activities, and facilities that can happen at Millbrook. There will be other issues and concerns that arise in time that we did not address or even anticipate in this plan. Questions such as "Is my activity taking place in the proper zone?" and "How does this activity or facility relate to the listed goals and principles of this plan?", should constantly be asked. We have tried to prepare a document that can help answer those questions and meet the needs of the Center in the future. As a living document, it should be reviewed, updated, and re-confirmed every five years. The managing organization for the Millbrook Marsh Nature Center has sought professional and public input as they have developed programs for the site and its visitors, and they should continue to do so in the years to come. If the past year is a good example, then the community has already embraced the site and is willing to devote significant amounts of time and funds to make this place - the Millbrook Marsh Nature Center - a great place to visit.

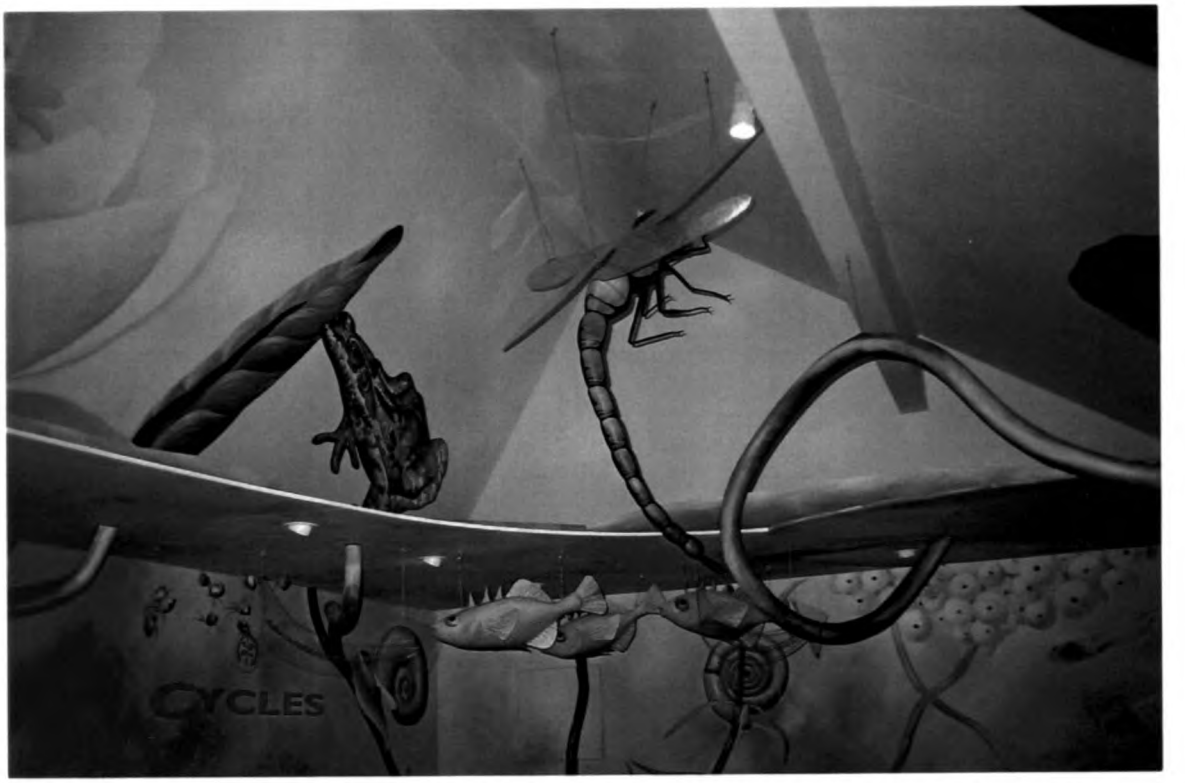

Photo 11A. Example of interpretive "pond" room from the Wildfowl and Wetlands Trust at Slimbridge, England.

Photo 11B. Example of interpretive "pond" room from the Wildfowl and Wetlands Trust at Slimbridge, England.

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Appendix

Spring Creek Wate

Map 1

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Millbrook Marsh Nature Center Property Boundary

Watershed Boundary

Streams

NWI Wetlands

Subwatershed Boundary

Roads

0 1 2 Miles

PENNSTATE

Cooperative Wetlands Center and Land Analysis Laboratory

March, 1998

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

FACILITIES COMMITTEE MEETING

Hybrid Meeting
November 1, 2022
8:30 AM

GENERAL MEETING INFORMATION	
RSVP	**To ensure an overall quorum of members, please let us know how you intend to participate:** https://us02web.zoom.us/meeting/register/tZUlf-GorzIpGdOE4IdEnV7CcY9Kd7rcRQP
Remote Participants	**To attend via Zoom:** https://us02web.zoom.us/meeting/register/tZUlf-GorzIpGdOE4IdEnV7CcY9Kd7rcRQP To attend this meeting by phone: +1 929 205 6099 | Meeting ID: 818 8801 9337
In-Person Participants	COG Building – Forum Room 2643 Gateway Drive, State College, PA 16801
Meeting Contact: Kathy Bisko | email: kbisko@crcog.net | 814-231-3077	
Click HERE to locate the AGENDA and ATTACHMENTS *Should you desire to annotate any attachments you must download them first.*	

- The chat feature for this meeting will be disabled. A recording of the meeting will be made available on the COG website upon its conclusion.
- We ask that non-voting participants that are attending remotely remain muted with their video turned off unless recognized to speak. To reduce audio interference, please remain off of speakerphone during the meeting.
- **VOTING PROCEDURES:** Members will provide their vote by voice. Clarification will be sought by the Chair if the vote is unclear. Members opposed to a motion should vote "No". For additional information on COG Voting Procedures, please click HERE.
- **PUBLIC COMMENT GUIDELINES:** Members of the public may comment on any items not already on the agenda (five minutes per person). Comments relating to specific items on the agenda should be deferred until that point in the meeting. Written public comment or requests to speak to the Facilities Committee for items not on the agenda, and requests to comment to specific agenda items listed below, may be submitted in advance by emailing kbisko@crcog.net. For additional information on COG public meeting guidelines, please click HERE.
- To access agendas and minutes of previously held meetings, and to learn more about the COG Facilities Committee on our website, please click HERE.

FACILITIES COMMITTEE MEETING

Hybrid Meeting
November 1, 2022
8:30 AM

AGENDA SUMMARY

1.	CALL TO ORDER
2.	PUBLIC COMMENTS
3.	NEW AGENDA ITEMS
4.	APPROVAL OF MINUTES – October 4, 2022
5.	COG BUILDING: Proposed Amendment to the Intermunicipal Agreement
6.	CRPR - WHITEHALL ROAD PROJECT: Regional Park Phase I Development
7.	MILLBROOK MARSH: Nature Center Education Building Phase 2 and Welcome Building
8.	LONG RANGE FACILITIES PLANNING
9.	OTHER BUSINESS
10.	CALENDAR
11.	HELPFUL REFERENCE LINKS
12.	ADJOURNMENT

CENTRE REGION COUNCIL OF GOVERNMENTS
2643 Gateway Drive, Suite 3
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FACILITIES COMMITTEE MEETING

Hybrid Meeting
November 1, 2022
8:30 AM

AGENDA

1. CALL TO ORDER

Chair will convene the meeting. Staff will perform a roll call of Committee members.

2. PUBLIC 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. NEW AGENDA ITEMS **(Discussion/Action)**

Members may request additional items of business be added to this meeting's agenda. If approved by a majority vote of the members, the proposed new agenda item(s) will be placed on the agenda at the discretion of the Chair.

4. APPROVAL OF MINUTES **(Action)**

A copy of the minutes from the Joint Facilities and Finance Committee meeting on October 4, 2022 are *enclosed* for approval by the Facilities Committee.

5. COG BUILDING INTERMUNICIPAL AGREEMENT MODIFICATION **(Discussion)**
Presented by Eric Norenberg

On September 27, 2021, at the recommendation of the Facilities Committee, the General Forum directed staff to develop the required documents that would be used as instruments to transfer ownership of the COG Building to the Centre Region Council of Governments at the end of the lease on May 15, 2028. These documents were presented to the Facilities Committee in May 2022 and a presentation regarding the proposed modifications to the COG Building Inter-Municipal Agreement was made during the July 25, 2022, General Forum meeting. At this meeting, time was afforded for members to provide feedback on the matter and to ask questions of the COG Solicitor and staff. No action was taken at the July 25, 2022, General Forum meeting to

approve the proposed modifications to the COG Building Inter-Municipal Agreement. Action was later planned for the September General Forum meeting.

During the September 2022 General Forum meeting, further discussion regarding the proposed amendment to the COG Building Intermunicipal Agreement took place. That discussion was followed by a Unit Vote that failed, 5-1 (Harris Township). On October 10, the Harris Board of Supervisors met, consulted with their Solicitor, and agreed to support the amendment regarding ownership transfer with two conditions:

(1) That the Articles of Agreement be amended to reflect that at the end of the lease in 2028, the enterprise funds (Code, Refuse, etc.) will pay rent to the COG that will be deposited into a dedicated fund to be used solely to fund future capital improvements to the building

(2) A long-range capital improvement plan be developed to guide how these funds are used.

Following additional discussion with staff and the COG Solicitor about the best way to incorporate these conditions into the appropriate document, additional revisions to the COG Building Intermunicipal Agreement amendment document were developed (enclosed). New sections 5. and 6. were added by the Solicitor and are ready for discussion and consideration by the Facilities Committee:

5. *Upon completion of all payments under the Lease, funds received from COG enterprise operations such as Code Administration and Refuse and Recycling Program will be deposited in the dedicated COG Building fund for COG Building maintenance, repairs, and capital improvements. Funds so deposited shall offset municipal support as may be determined from time to time by a vote of the General Forum during the annual budget process, unless directed otherwise by vote of the General Forum.*

6. *COG Facilities Committee shall remain responsible for actively monitoring and updating, as needed, the COG Building Facilities Condition Assessment to identify future maintenance, repairs, capital improvements and reinvestment in the COG Building as may be directed from time to time by the COG General Forum.*

If the Facilities Committee agrees these additions, the following motion could be considered:

"That the Facilities Committee recommends that the Executive Committee forward the proposed revised document to amend the COG Building Intermunicipal Agreement, as included in the November 1, 2022, Facilities Committee agenda packet, to the General Forum for approval and referral to the Centre Region municipalities for action to approve the document."

6. WHITEHALL ROAD: Regional Park Phase I Development **(Discussion/Action)**
Presented by Pam Salokangas and Ed Bell

An update on the current project progress and status will be provided.

In addition, the Agency would like to follow-up and provide an update on the discussion held during the October Joint Meeting of the Facilities Committee and CRPR Authority of the Facilities Committee and the subsequent motion to forward the request for replacement of project contingency funding and related project funding. Following the discussion, the following motion was approved with one dissenting vote (Ferguson Township):

The Facilities Committee asks the General Forum to consider the release of $625 from the $816K of undrawn restricted loan funds available, that must be approved unanimously by the General Forum to be released. These funds are requested for the following purposes: $275K for project contingency funds, $250K for an anticipated one-to-one grant match for the all-season pavilion, and $100K for funding irrigation for Fields 3 and 4.

As a follow-up, information will also be presented on the financial and construction status of the project and impacts if additional funding is not available to complete the project.

The Committee is asked to receive these updates from staff and provide input on possible next steps, and a recommended revision, if any, to the motion approved during the last meeting.

7. MILLBROOK MARSH: MMNC Spring Creek Education Building Phase 2 and Welcome Building **(Informational)**
Presented by Pam Salokangas, Melissa Kauffman, and Ed Bell

The bid process for this project is complete for four of the five bid packages; the four bids that were accepted and approved during the September Authority meeting have signed contracts and all related documentation on insurance, W-9s, bonds, and site safety plans have been collected. Those documents are with DCNR for their final review.

The fifth bid—Fire Protection—was re-bid and rejected; the low bidder, unfortunately, did not attend the mandatory pre-bid meeting, and the second bidder was too high. At this point, we are moving to an RFP process for this bid package and will distribute that RFP to local and regional vendors. The responding proposals will go forward to the Authority for their approval, most likely, at the December meeting. This delay does not impact the start of this project as the Fire Protection work will be a late winter/early spring project.

The project kick-off meeting was held on October 27 with a tentative project start date of November 14 for on-site mobilization and November 24 for the start of construction.

8. LONG RANGE FACILITIES PLANNING **(Informational/Discussion)**
Presented by Eric Norenberg and Kathy Bisko

The need for a comprehensive long-range facilities plan has been recognized and recommended as a goal for the Facilities Committee. With this in mind, it is expected that over the next year the Facilities Project Manager will collaborate with the Committee, staff, and other key resources to define the focus and direction of this initiative.

Broad organizational goals that have been identified that are proposed to guide this as an inclusive, objective COG-wide planning effort are to:

- Take care of our own
- Take care of what we own, and
- Plan and prepare for the future

It is also proposed that this effort reflect the Facilities Committee values and goals to:

- Understand the operational needs of all COG agencies
- Provide impartial guidance that moves the entire organization
- Leverage resources through joint action
- Explore, consider, and foster effective partnerships and regional cooperation
- Support infrastructure investment and renewal
- Support economic, environmental, and social responsibility
- Reflect fiscal accountability and strategic investment of resources

To build a foundation to support the long-range planning effort, over the next 12 months the following is proposed:

Approach and Direction:

- Strategies and goals for organizing and guiding the planning process shall be evaluated and presented for consideration.
- The effort will be coordinated with the COG strategic planning process and other program, partner, and municipal planning whenever possible and relevant.

Proposed Topics:

- Current and projected program goals and needs will be summarized and reviewed
- Baseline facility condition assessments data will be consolidated and re-assessed including data on facility functionality, space, security, and public access needs.
- A preliminary summary and geographic analysis of facility location, proximity, access, and other spatial features and constraints will be completed.
- Building systems, operational costs and energy efficiency data will also be consolidated and reviewed with respect to cost-effectiveness and sustainability goals and criteria defined in the Centre Region Climate Action and Adaption Plan.
- Financial considerations will also be analyzed including an updated summary and assessment of facility ownership costs, lease costs, lease terms, current and future funding constraints, capital improvement needs/commitments, and facility operations and maintenance needs, and cost projections.

9. **OTHER BUSINESS**

A. Matter of Record – Proposals were received on October 19, 2022 for the Solar Power Purchase Agreement (SPPA) by the SPPA Working Group. They are currently under review. The evaluation, ranking, and selection process with take 5-6 weeks. It is expected that a presentation on the proposals received and the SPPA Working Group's recommendation will be made at Facilities Committee December 6, 2022 meeting.

B. Matter of Record - LAN Associates has finished the stream modeling—the largest task—for the MMNC Boardwalk Feasibility Study Part 2 final draft, which relates to the stream bank stabilization recommendations within the study. That document will be available in November and will begin making the COG Committee rounds throughout the month and should be in front of the COG Facilities Committee at their December meeting. The Agency will provide feedback to LAN Associates so that the document can be finalized and accepted by the Centre Region Parks and Recreation Authority at their December meeting.

10. **CALENDAR**

The next meeting of the Facilities Committee is scheduled for Tuesday, December 6, 2022.

A calendar with upcoming COG committee, General Forum, and municipal meetings can be found by clicking the following link: COG and Municipal Meeting Overlay Calendar.

11. **HELPFUL REFERENCE LINKS**

Repositories of helpful information have been assembled for use by the elected officials and COG staff:

- Governance policies, procedures, and other related documents can be viewed on SharePoint by clicking here or going to https://www.crcog.net/governance.
- Updates on current COG Studies and Projects can be found by clicking here or going to https://bit.ly/3vZP8Zs.
- The Whitehall Road Regional Park project site facilitates easy access to documents, resources, and current information about the project. Staff continues to develop and update the site which can be found at https://www.crcog.net/wrrpinfoguide.
- COG Facilities Reference information can be found at: https://bit.ly/3qnEbMA. The Facilities Committee uses this information as a collection point and serves as a resource for new members of the Committee as well as others. Please contact Kathy Bisko at kbisko@crcog.net for access.

Please contact Eric Norenberg with feedback and suggestions.

11. **ADJOURNMENT**

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

EXECUTIVE COMMITTEE

Hybrid Meeting
October 18, 2022
12:15 PM

GENERAL MEETING INFORMATION	
RSVP	**To ensure an overall quorum of members, please let us know how you intend to participate:** https://us02web.zoom.us/meeting/register/tZ0odu6qpzoqG9a8c0EH6K0wJmYihEuqswWB
Remote Participants	**To attend via Zoom:** https://us02web.zoom.us/meeting/register/tZ0odu6qpzoqG9a8c0EH6K0wJmYihEuqswWB To attend this meeting by phone: +1 929 205 6099 | Meeting ID: 895 1729 1012
In-Person Participants	**COG Building – Forum Room** 2643 Gateway Drive, State College, PA 16801
Meeting Contact: Scott Binkley | email: sbinkley@crcog.net | 814-235-7818	
Click HERE to locate the AGENDA and ATTACHMENTS *Should you desire to annotate any attachments you must download them first.*	

- To simplify meeting management and to ensure that all attendees have equal ability to participate, the Chat feature has been disabled on the Zoom platform. A recording of the meeting will be made available on the COG website upon its conclusion.
- We ask that non-voting participants that are attending remotely remain muted with their video turned off unless recognized to speak. To reduce audio interference, please remain off speakerphone during the meeting.
- **VOTING PROCEDURES:** Members will provide their vote by voice. Clarification will be sought by the Chair if the vote is unclear. For additional information on COG Voting Procedures, click HERE.
- **PUBLIC COMMENT GUIDELINES:** Members of the public may comment on any items not already on the agenda (five minutes per person). Comments relating to specific items on the agenda should be deferred until that point in the meeting. For additional information on COG public meeting guidelines, please click HERE. Written public comment or requests to speak to the Executive Committee for items not on the agenda, and requests to comment on specific agenda items listed below, may be submitted in advance by emailing sbinkley@crcog.net.
- To access agendas and minutes of previously held meetings, and to learn more about the COG Executive Committee on our website, please click HERE.

EXECUTIVE COMMITTEE

Hybrid Meeting
October 18, 2022
12:15 PM

AGENDA SUMMARY

1.	CALL TO ORDER AND ROLL CALL
2.	PUBLIC COMMENTS
3.	NEW AGENDA ITEMS

4.	CONSENT AGENDA
CA-1	Approval of Minutes: September 22, 2022 – Executive Committee Meeting
CA-2	2021 Audits
CA-3	Referral of the 2023 COG Summary Budget to the General Forum

5.	COMMITMENT FOR PLANNED ENGINE REPLACEMENT
6.	JUNETEENTH HOLIDAY
7.	COG SOLICITOR RFP/RFQ DISCUSSION
8.	2022 EVALUATION PROCESS FOR EXECUTIVE DIRECTOR
9.	EXECUTIVE DIRECTOR'S REPORT
10.	OTHER BUSINESS
11.	CALENDAR
12.	HELPFUL REFERENCE LINKS
13.	ADJOURNMENT

CENTRE REGION COUNCIL OF GOVERNMENTS

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EXECUTIVE COMMITTEE

Hybrid Meeting
October 18, 2022
12:15 PM

AGENDA

1. CALL TO ORDER AND ROLL CALL

Chair will convene the meeting. Staff will take a roll call of committee members.

2. PUBLIC COMMENTS

Chair will invite members of the public 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. Submitted comments will be read into the record by the Recording Secretary at the appropriate time in the meeting.

3. NEW AGENDA ITEMS

Executive Committee members may request additional items of business be added to this meeting's agenda. If approved by a majority vote of the members, the proposed new agenda item(s) will be added at an appropriate place on the agenda at the discretion of the Chair. Ideally, items for future agendas should be proposed to the Executive Committee through your municipal representative.

4. CONSENT AGENDA **(Action)**

The following items listed on the Consent Agenda portion of the Executive Committee agenda may be approved with a single motion by the Executive Committee unless a Committee member or member of the public requests that an item be removed from the Consent Agenda for a question or further discussion.

CA-1 APPROVAL OF MINUTES

Enclosed is a copy of the minutes of the September 22, 2022, Regular Executive Committee meeting.

Approval of this item approves the listed minutes of previous meetings.

CA-2 2021 AUDITS

The COG contracts with Maher Duessel, CPAs to prepare the annual audits of the Centre Region COG, Schlow Centre Region Library, and Centre Region Parks and Recreation Authority. These three entities each require annual audits.

It has been the practice of the COG that a representative of the auditing firm attends a Finance Committee meeting to review the audit and respond to questions annually. This year the three 2021 audits were presented by representatives of Maher Duessel during the October 17, 2022, meeting of the Finance Committee. (It should be noted that Maher Duessel also performs an annual audit of the Centre County Library Federation, a fourth entity serviced by the COG Finance Office, but that audit is independent of the purview of the Centre Region COG.) Copies of the 2021 audit reports are enclosed.

After reviewing, the Finance Committee recommended that the Executive Committee place the 2021 COG audit on the General Forum agenda for approval.

Approval of this item will place receipt of the 2021 audit reports on the October 24, General Forum Consent Agenda.

CA-3 REFERRAL OF THE 2023 COG SUMMARY BUDGET TO THE GENERAL FORUM

This agenda item asks the Executive Committee to consider advancing a recommendation from the Finance Committee to refer the 2023 COG Summary Budget to the General Forum for distribution to the participating municipalities for review and comment.

On Monday, October 17, 2022, the Finance Committee completed its review of the 2023 COG Detailed Budget and authorized the preparation and distribution of the 2023 Summary Budget. This meeting served as a "wrap-up" session of outstanding budget questions/discussion items that had been deferred until all programs had been reviewed. The Committee moved the Budget process forward by voting on a motion that recommends that the General Forum receive the draft 2023 Summary Budget for the Centre Region Council of Governments and refer it to the municipalities for consideration.

Staff is working to incorporate the information from the October 17, 2022, Finance Committee meeting into the 2023 Detailed Budget and 2023 Summary Budget documents.

The motion as approved by the Finance Committee at its October 17, 2022 meeting is as follows:

> *"That the General Forum receive the draft 2023 Summary Budget for the Centre Region Council of Governments and refer it to the municipalities for consideration; and, furthermore, that comments be referred to the COG Executive Director by 8:00 AM on November 17, 2022, for distribution to the Finance Committee."*

Approval of this item would place it on the October 24, 2022, General Forum consent agenda for consideration of referral to the member municipalities.

Consent Agenda Approval Motion:

"That the Executive Committee approves items CA-1 – CA-3 as listed on the October 18, 2022, Executive Committee Consent Agenda."

All municipalities should vote on this motion.

5. COMMITMENT FOR PLANNED ENGINE REPLACEMENT **(Action)** — *Presented by Steve Bair, Centre Region COG Fire Director*

The COG CIP proposes the replacement of a fire engine in 2025. Staff suggests committing to the order now to assure delivery in 2025 and avoid pending cost increases. The commitment for this purchase is $975,687 if the order is placed before November 1, 2022. **No funds will be paid before February 2025.**

The estimated delivery time for the engine is 28.5 to 29.5 months ARO. Pierce has announced a price increase of 13.5% effective November 1, 2022. By committing to this planned purchase before the price increase, we can avoid $133,552 in cost.

The Finance Committee will review this proposal at its October 17, 2022, meeting and an update will be provided to Executive Committee members.

To proceed, the Executive Committee should consider the following motion:

"The Executive Committee as recommended by the Public Safety and Finance Committees recommends that the General Forum commits to the engine replacement described in the COG CIP and scheduled for 2025 delivery before November 1, 2022."

Halfmoon and Harris Townships should abstain from voting on this motion.

6. JUNETEENTH HOLIDAY **(Action)** — *Presented by Eric Norenberg and Becca Petitt*

In 2020, momentum to establish Juneteenth as a federal holiday accelerated during a summer defined by racial unrest and protests in response to the murder of George Floyd. In June of 2021, President Biden signed legislation making Juneteenth a federal holiday. June 19 is now the national day to commemorate the end of slavery in the US. As discussed at its August 4, 2021, HR Committee meeting, a proposal is now being brought forward to amend the COG and Schlow holiday schedules in support of the Juneteenth holiday.

The proposal was presented in the 2023 COG Program Plan and Detailed Budget to designate Juneteenth as a paid holiday. To date, a majority of the municipal comments have been supportive of this proposal. Ferguson Township and the Borough of State College added the holiday for employees in 2022 and Patton Township plans to add the holiday for 2023.

Please note the Schlow Library holiday schedule differs from COG's holiday schedule, and therefore,

any motion considered by the General Forum will require Library Board ratification to implement the holiday for Schlow employees.

During the October 12, 2022, meeting of the Human Resources Committee the following motion was presented for Committee consideration:

> *"That the HR Committee recommends that the COG General Forum amend Section 4.15 – Holidays/Personnel Days of the COG Personnel Policy Handbook to designate Juneteenth as an additional paid holiday for eligible non-library COG employees, effective January 1, 2023, and further, that the Schlow Centre Region Library Board be asked to consider similar action for eligible Library employees."*

There was not consensus among Human Resources Committee members at this meeting to move this item forward as presented and opted to refer this item to the Executive Committee for discussion and a possible recommendation for the General Forum to potentially consider.

If there is action to approve the proposal at the October 24, 2022, General Forum meeting the COG holiday schedule will be amended so that it is in place on January 1, 2023.

7. COG SOLICITOR RFP/RFQ DISCUSSION **(Discussion)** – *Presented by Eric Norenberg*

Background

During the November 18, 2021, Executive Committee meeting, members discussed a method and procedure regarding the selection process for retaining the COG solicitor. The following information was presented:

The responsibility to appoint a solicitor by the General Forum first appeared in the COG Articles of Agreement when they were revised in 1989. The current Articles of Agreement contain the following text in Article V item C:

> *Solicitor: The Centre Region COG General Forum shall appoint a solicitor, who shall be the chief consultant of the Centre Region COG in all legal matters.*

The then-COG solicitor was in place prior to that responsibility being added to the Articles of Agreement in 1989 and before the hiring of former Executive Director, Jim Steff. At that time, the COG solicitor was John R. Miller Jr. He was a partner in the same firm that current COG solicitor Terry Williams is a partner in. Mr. Miller provided his services to the COG until 2007 when due to illness, Terry Williams was chosen to succeed him because of his knowledge and understanding of COG.

The COG Purchasing Policy and Procedures note:

> *"Applicable state procurement laws do not require the bidding of professional/consulting services such as legal, accounting, engineering, auditing, insurance, medical, and architectural services"* at *"times, it may be in the best interest of the Centre Region Council of Governments to retain a professional consultant for a multi-year*

contract period (such as for legal or auditing services). In these cases, a contract not exceeding a three (3) year term may be awarded by the governing body using the RFP process."

At the time this topic was considered in 2021, it was noted that there is no additional guidance in the COG Articles of Agreement as to how the COG solicitor is selected and appointed, nor any directive regarding the frequency of appointment. Accordingly, the Executive Committee discussed possible preferences regarding the selection process for retaining the next COG solicitor. During the April 2021 discussion, Committee members expressed several opinions and recommendations, including that a review and periodic appointment of the COG solicitor should be conducted no less than every three years by the Executive Committee and General Forum. In addition, the conversation touched on:

- When engaging in the selection of a Solicitor, the process should utilize a two-step (RFP/RFQ) process through which a pool of qualified individuals and firms could be established, while being mindful to avoid conflicts of interest.

- A procedure should be developed to clarify the role and relationships between the COG solicitor and the COG Executive Director and Executive Committee with respect to requesting opinions, advice, etc.

The COG Executive Director was asked to continue research and to develop a process and procedure policy regarding the selection process for retaining the COG solicitor which will be presented for further discussion at an upcoming Executive Committee meeting.
During the November 2021 discussion, the Executive Director reported on his review of a number of example procurement documents used by Pennsylvania municipalities to procure/select solicitors. Rather than requests for proposals (RFPs), the example documents were generally Requests for Qualifications (RFQs). These documents had similar structures and were intended not to get a specific fee proposal for the services needed, but rather to gather documented interest and statements of qualifications from attorneys and/or firms who were interested in providing the services as a municipal solicitor.

Most of the **RFQs** reviewed included the following components:

A.	Background and description of the organization and type(s) of legal expertise needed.
B.	Required professional legal credentials and background expected of candidates.
C.	Scope of work.
D.	Schedule for the process and selection.
E.	Elements to be included in the submission (specialized competencies, personnel qualifications (if a firm) and capabilities, client lists, etc.).

Note: No pricing information would be included at this stage. After review and evaluation by the municipality, terms and pricing would be negotiated and agreed to, and then approved by the governing body.

Locally, Centre Region COG municipalities have generally not used an RFP/RFQ process to procure solicitor services. Only two communities have entered into a contract or agreement, while the others

simply get an annual statement of fees from their solicitor. Three of the COG municipalities use a combination of retainer (for defined included services, e.g., legal opinions, consultation, meeting attendance, and other routine municipal legal issues) and hourly fees for items not covered by the retainer. Four of the COG municipalities formally reappoint the solicitor annually. The other two have an evergreen relationship, with one using a contract with a 90-day notice for termination.

The experiences of the latter COG municipalities are consistent with the COG's situation: The COG and its solicitor have an evergreen relationship without the need or requirement for an annual reappointment. There is an annual retainer that covers COG legal opinions, consultation, meeting attendance (if needed), and other routine legal issues and the COG may occasionally pay the Solicitor for services outside the scope of the retainer (e.g., litigation or grant certifications). In addition, the COG occasionally utilizes outside counsel for specialized matters (examples in the past year: loan refinancing, a unique human resources issue, and the TRAISR software contract review).

While the COG is made up of three entities (two covered by the annual retainer) and the COG Solicitor represents all three entities, there have not been situations where there was a legal conflict of interest. The potential for a legal conflict of interest to arise would be over an issue between the COG and a municipal or private client of the Solicitor's firm.

Future:

When it becomes necessary to select new legal counsel for the COG, the Request for Qualifications process would be the appropriate process to follow. The steps involved would include:

- Outlining the scope of work and services needed.
- Advertising and soliciting statements of qualifications and detailed responses to the scope of work.
- Screening and interviewing.
- Selecting an individual or firm and approving a three-year agreement for legal services.

Requesting Opinions or Advice:

It is recommended that all requests of the COG Solicitor for legal advice or opinions be channeled through the COG Executive Director. If the COG Executive Director has any concerns with a particular request, they can review the request with the COG Chair and/or the Executive Committee before proceeding.

There are two exceptions:

- Any elected official may contact the Solicitor directly for advice on the necessity to recuse themselves from a vote.
- If the request for advice or an opinion relates directly to the Executive Director, the COG Chair should handle the request.

Discussion

During the November 2021 discussion on this subject, Mr. Francke said that he believed it was not the intent of the COG to appoint the COG solicitor for life. He encouraged a regular periodic RFQ appointment process to be conducted and that the process should begin now. It was noted that a similar regular appointment process is used for COG auditing services. Ms. Dininni indicated that she would like the RFQ process to begin once the procedure is approved. To Ms. Dininni's comment, Mr. Barlow suggested adding that the COG could terminate the contract for any reason or no reason at all and at any time. No official action was taken.

Members of the Executive Committee have asked that this be placed on the agenda for discussion and consideration of either an official endorsement of the current evergreen arrangement or direction to staff to begin an RFP/RFQ process for a solicitor. The Committee is further asked to officially endorse a policy for legal advice or opinions.

8. 2022 EVALUATION PROCESS FOR EXECUTIVE DIRECTOR **(Discussion)** – *Presented by Rich Francke*

The annual COG employee evaluation process is getting underway, so it is time for the Executive Committee to begin preparations for the annual evaluation of the COG Executive Director. Last year, the COG Agency Directors and Municipal Managers were surveyed to provide feedback that was used by members of the Executive Committee in preparing their evaluation of the Executive Director. Before those surveys are distributed, the Committee is asked to review and discuss the questions and provide any changes. Enclosed are the following survey documents:

- Draft survey for Agency Directors
- Draft survey for Municipal Managers
- Draft survey the Executive Committee

The process will take approximately two months and culminate with the Executive Committee meeting in Executive Session with the Executive Director to review his evaluation. Upcoming steps include:

- Survey of Agency Directors and Municipal Managers through October 28
- Data compiled for review by the Executive Committee along with the Executive Director's self-evaluation based on the 2022 goals set by the Executive Committee at the beginning of the year.
- Survey of Executive Committee November 7-16
- Data compiled for review by the Executive Committee for its November 22 meeting
- Evaluation meeting with the Executive Director during the December 13 meeting

9. EXECUTIVE DIRECTOR'S REPORT **(Informational)** – *Presented by Eric Norenberg*

The Executive Director will update the Executive Committee on other items of current interest.

10. OTHER BUSINESS

A. Matter of Record – The next meeting of the Executive Committee is scheduled to be a joint hybrid meeting with the Human Resources Committee on **Tuesday, November 22, 2022, at**

12:15 PM.

B. Matter of Record – The following meet and greet events have been scheduled for the elected officials, municipal managers, and agency directors to attend:

Tuesday, December 6, 2022, from 6:00 PM – 7:00 PM
Pennsylvania Senator – Cris Dush
Representing: Bellefonte and State College Boroughs, and Harris and College Townships

Wednesday, December 7, 2022, from 6:00 PM – 7:00 PM
Pennsylvania Senator – Wayne Langerholc
Representing: Patton, Ferguson, and Halfmoon Townships

Both events will take place in the General Forum Room of the COG building.

C. Matter of Record – Matter of Record – At its October 10, 2022 meeting the CAS Committee unanimously passed a motion that the CAS Committee send a letter of support on behalf of COG for SB 472 and HB 1555 that would allow for community solar facilities. Community solar arrangements connect people who want to use solar energy, but can't install it where they live, to a local solar installation. Enclosed is the draft letter that will be sent to our current and new senators. A similar letter will be sent to our representatives to support HB 1555.

D. Matter of Record – Recently COG staff installed acoustical sound panels throughout the General Forum meeting room to help improve the audio aspects of its meetings. Your feedback is appreciated in completing this short survey https://www.surveymonkey.com/r/Z8SSQLZ to determine if these improvements have had a positive impact compared with meetings you may have attended earlier this year. Your participation in this survey will help direct staff to determine any possible next steps.

E. Matter of Record – You can subscribe to the official COG YouTube channel by going to https://bit.ly/3ypDlTT. Staff has begun to live stream some of its meetings as well as started to include informational videos on COG and its services to educate viewers.

F. Matter of Record – To watch an informational session on the Centre Region Council of Governments (COG) please go to https://www.crcog.net/orientation. This video is designed to provide an informational overview of COG, its operations, and its agencies. If you have questions regarding this video please contact COG Executive Director, Eric Norenberg at enorenberg@crcog.net.

G. Matter of Record – A COG Committee assignments roster can be found on the COG website at https://www.crcog.net/cogcommitteeassignments.

11. CALENDAR

A calendar with upcoming COG committee, General Forum, and municipal meetings can be found by clicking the following link: COG and Municipal Meeting Overlay Calendar.

12. HELPFUL REFERENCE LINKS

Repositories of helpful COG information have been assembled for use by elected officials, COG staff, and others:

- Governance policies, procedures, and other related documents can be viewed on SharePoint by clicking here or going to https://www.crcog.net/governance.
- Updates on current COG Studies and Projects can be found by clicking here or going to https://bit.ly/3vZP8Zs.
- The Whitehall Road Regional Park project site facilitates easy access to documents, resources, and current information about the project. Staff continues to develop and update the site which can be found at https://www.crcog.net/wrrpinfoguide.
- COG Facilities Reference information can be found at: https://bit.ly/3qnEbMA.The Facilities Committee uses this information as a collection point and serves as a resource for new members of the Committee as well as others. Please contact Kathy at kbisko@crcog.net for access.

13. ADJOURNMENT

ENCLOSURES

Item #	Description
CA-1	September 22, 2022 – Regular Executive Committee Meeting Minutes
CA-2a	CRCOG CL FINAL 2021
CA-2b	CRCOG FS FINAL 2021
CA-2c	Schlow Centre Library CL FINAL 2021
CA-2d	Schlow Centre Library FS FINAL 2021
CA-2e	Centre Parks and Rec CL FINAL 2021
CA-2f	Centre Parks and Rec FS FINAL 2021
10-C	Centre Region COG Letter of Support Community Solar SB 919

TOWNSHIP OF FERGUSON

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Public Works Director's Report to the Board of Supervisors (BOS)

for the regular meeting on November 1, 2022

1. **Public Works Road Crew Activities:** Leaf collection started October 3rd and continues every working day until the week of December 12th or otherwise hampered by winter operations. We now have 3 leaf collection vehicles in our fleet that can be operated by one person per vehicle. Other planned activities for the 2-week period beginning October 31st include inlet repairs, sign repairs, mowing pollinator areas at Cecil Irvin park and Haymarket park, various work orders, setting corner and line posts around Suburban Park. Another township-wide round of brush collection starts November 7th.

2. **Arborist and Ferguson Township Tree Commission (FTTC) Activities-** Injections of 80 oak trees to limit the spread of oak wilt on Beaver Branch Road and removal of 2 infected oak trees is complete. The Tree Commission meets October 17th and in addition to routine business will conduct a public hearing for tree removals. Work continues to get a tree pruning contract and tree planting contract out to bid. The FTTC meets next on November 21st.

3. **Stormwater –** The stormwater fee implementation committee continues to meet biweekly to discuss issues and concerns. A presentation on the stormwater fee was provided to the BOS at a work-session on October 11th. The stormwater engineer continues work on preliminary design and master planning for potential stream rehabilitation projects including a section of Slab Cabin run between Chestnut Street and Butternut Street, and a section of a tributary to Beaver Branch in the Piney Ridge neighborhood, as part of potential pollution reduction projects for our MS4 permit. Staff plans to provide an update on the MS4 Pollutant Reduction Plan projects at the BOS work session in December.

4. **Work Orders and Asset Management –** Staff continues to develop and improve our work order system and is working with the mechanics and consultant to roll out a fleet module.

5. **Contract 2016-C11 Traffic Signal Performance Metrics –** Work resumed by Wyoming Electric and Signal Company to install poles and finalize the interconnect our traffic signals using radio signals to allow for more efficient and timelier optimization of signals from the Township office and PennDOT's Traffic Management Office.

6. **Contract 2018-C20 Park Hills Drainageway** – A permit from PaDEP is pending easement acquisition. 11 of 11 claimants verbally accepted the offer of just compensation. The Public Works Director serving as Right of Way Representative will set up "closings" to obtain signatures on documents and provide the compensation check. 1 of 11 closings has occurred.

Construction of the drainage project is expected in 2023 with final landscaping in spring of 2024. A supplement for additional work is being negotiated with the design professional.

7. **Contract 2018-C20U Park Hills Drainageway Utility relocations:** Prior to constructing channel improvements, certain utilities such as electric and communications must be relocated. This work was bid separately to advance the channel construction work. Bids were opened for this work on October 11th. Refer to separate award recommendation memo.

8. **Contract 2019-C21 Pine Grove Mills Street Light Conversion:** This contract involves rewiring existing ornamental lights in Pine Grove Mills and installing new power supplies and new power cutoffs to allow them to be serviced by FTPW. This work removes the lights from the WPP tariff and installs meters. High pressure sodium lamps will be removed, and the light fixtures retrofitted with 2700K LED lamps. Work includes the installation of underground conduit by directional boring. Refer to separate award recommendation memorandum.

9. **Contract 2020-C4 Suburban Park** This project includes features shown in the master plan including play equipment, a perimeter walk path, restoration of a stream channel, installation of bridges. Design is in final review.

10. **Contract 2020-C18 Science Park and Sandy Drive Signal Design** – Design work was on hold during 2022 given other capital project priorities. This project was discussed during the CIP review by the BOS and final design and bidding is deferred to 2024.

11. **Contract 2021-C16 Chesapeake Bay Pollutant Reduction Plan (CBPRP) Design and Permitting** – In compliance with our MS4 permit and CBPRP, certain projects need to be advanced through the design and permitting phase. The stormwater engineer reviewed the MS4 Pollutant Reduction Plan and conducted site visits to evaluate projects. The section of Slab Cabin Run between Chestnut Street and SR45 and the tributary to Beaver Branch in the Piney Ridge neighborhood continue to be viewed favorably as candidate projects by the Stormwater Engineer and PaDEP. There may be a possibility for a partnership with Pa Fish and Wildlife on the Beaver Branch tributary project. An update to the Board is planned in December.

12. **Contract 2022-C3 Cured in Place Pipe Lining** – This contract includes repairing corrugated metal storm pipes with a pipe liner allowing pipe repair from the inside without the need for digging. The contract is prepared based on a completed video assessment of the pipes. The process includes ultraviolet light cured in place pipe lining. Spot repairs by FTPW are complete. This contract was awarded to Hydro-Klean, LLC. A preconstruction meeting was held on October 12th. Work should begin in November.

13. **Contract 2022-C11 Sidewalk Repairs** – FTPW Engineering Section inspected a portion of the public sidewalks. Property owners were sent notices to fix deficient sidewalk sections and given an opportunity to fix it themselves or have the Township perform the work by contract and bill the property owner. Work is underway to be completed by the end of October.

14. **Contract 2022-C14 Street Tree Planting** – Work involves replacing dead or damaged street trees as well as planting opportunities identified by the tree commission and arborist. Notices

are sent to adjoining property owners regarding tree species. The contract should be advertised by December, 2022.

15. **Contract 2022-C15 Street Tree Pruning** – Each year a certain number of street trees are pruned to include shaping while they are young, clearance over sidewalks and roadways, deadwood removal as the trees mature, and hazard mitigation. This project should go out to bid in October.

16. **Contract 2022-C16 Audible Pedestrian Signal (APS) Push Buttons** – This project (in design) includes upgrades to the traffic signals at the College/Bristol intersection and the College/Blue Course intersection to install audible pedestrian signals. An APS provides audible information along with the visual indicators to let blind pedestrians know when to safely cross an intersection.

17. **Contract 2022-C19 FTPW Building 3 Roof Repair -**The existing rubber roof on FTPW building 3 has failed and the roof needs replaced. A pre-construction meeting was held on October 5th. Work is expected to begin after bonds are submitted. The contractor has not submitted the required bonds and paper work and has been put on notice.

18. **Contract 2022-C20 Admin Building HVAC –** Staff is awaiting final electrical drawings and special provisions from Barton Associates. Staff will then put together the "front end" specifications and put this project out to bid. This project includes replacing the existing energy recovery unit or direct outside air unit (DOAU) on the roof of the administration building.

19. **Contract 2022-C21 Pine Grove Mills Bike and Pedestrian Improvements (TASA grant)** – The Township received notice of a $700,000 grant award for construction and inspection of this project. The 2022 budget includes $120,000 for survey and design. The County will provide a $50,000 liquid fuel grant toward construction of this project. A kickoff meeting with PennDOT and CRPA was held on June 14th. In December, the Township should expect to receive a reimbursement agreement that must be executed with PennDOT. Staff prepared a request for professional proposals from consultants in accordance with PennDOT solicitation requirements for professional services. This is a two-step selection process. Proposals were received from 3 firms: EADS Group, McCormick Taylor, Stahl Sheaffer Engineering. An evaluation team of Township and PennDOT personnel independently reviewed and rank the proposals. The team met and reviewed rankings on September 19th. MTA is selected as the top ranked firm. A scope of work for the design phase was developed by PaDOT and the Township and provided to MTA on September 26th. MTA and Ferguson Township and PennDOT representatives met on 10/24/22 to review the scope of work of the project design to advance submission of a price proposal.

20. **Contract 2022-C23 Pine Grove Mills Lighting Design (18 new lights)** – Work includes the design of new ornamental lights in Pine Grove Mills mostly to the west of the flashing light. Work has not yet started on the design of this project.

21. **Operating Budget for 2023** – The Public Works Director submitted the public works portions of the 2023 operating budget and is reviewing the document with the Manager and Finance Director.

TOWNSHIP OF FERGUSON

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PLANNING & ZONING DIRECTOR'S REPORT

Tuesday, November 1, 2022

LAND DEVELOPMENT PLANS AND OTHER PROJECTS

1. Active Plans are listed below for the Board of Supervisors (10/25/2022).
    - **The Peace Center/Cemetery—Islamic Society Preliminary Land Development Plan** (24-004-078C-0000)
    - **Farmstead View Subdivision Plan** (24-022-306-0000)
    - **Imbt Preliminary Subdivision Plan** (24-004-017A-0000)
    - **1004 West College Avenue Vertical Mixed-Used Preliminary Land Development Plan** (24-002A-051-0000)
    - **MP Machinery Preliminary Land Development Plan** (24-433-007-0000)
    - **MP Machinery Minor Subdivision Plan** (24-433-007-0000 and 24-433-008-0000)
    - **165 Volos Lane Minor Land Development Plan** (24-007-016-0000)
    - **Salvation Baptist Church Preliminary Land Development Plan** (24-004-078-0000)
    - **All Washed Up Auto Spa** (24-012-023-0000 & 24-012-022-0000)
    - **Pine Grove Hall Preliminary Land Development Plan** (24-009A-030-0000)
    - **LeCrone—West College Avenue Replot Minor Subdivision Plan** (24-004-079H-0000 and 24-004-079I-0000)

2. PZ Director met with the Manager and Finance Director to review the 2023 budget for PZ, met with the Assistant Manager and GIS Administrator to review GIS needs for the department, attended a meeting about Knob Hill Trailer Park with CCHLT and Habitat for Humanity, attended the Leadership Team Meeting, and the Route 45 Getaways bi-weekly meeting.

3. Planning Commissioners and PZ Staff attended the PSU Land Use Webinar on Green Corridors, Blue Corridors: Planning to Protect our Natural Assets and staff provided the recording to the PineSAP.
4. Community Planner and Director met with the PineSAP Land Use Subcommittee to review zoning district boundary for the Village Zoning District, attended the Municipal/CRPA Planners Joint Staff meeting.
5. PZ Staff attended the Planning Commission meeting, PZ Weekly meeting, a meeting with the Township Stormwater Engineer and Solicitor to prepare for the November 2022 Zoning Hearing Board meeting, and the Bi-Weekly Meeting with Mackin Engineering.

PLANNING COMMISSION

The Planning Commission met October 24, 2022, to review College Township's Pedestrian Facilities Master Plan and the Salvation Baptist Preliminary Land Development Plan.

ZONING HEARING BOARD

The Zoning Hearing Board held a Zoning Officer Determination Appeal Hearing at the August 23, 2022, meeting:

1. **Nixon Road (24-003-007M-0000)**
   On June 29, 2022, C. Anthony Fruchtl, Penn Terra Engineering, Inc. submitted an application for an appeal hearing at 24-003-007M-0000, on behalf of the property owner, Lindsey Kiefer. The property is zone Rural Agricultural (RA), and the applicant is appealing the Zoning Administrator's application of the Riparian Buffer Overlay Zoning District regulations. The Zoning Administrator has determined that a storage of land clearing material is not a permitted use within the Riparian Buffer and as a result, denied the Zoning Permit Application. ***The applicant provided additional information that was requested by staff and the Board referred the review back to the Zoning Officer in light of the new information provided.***

PINE GROVE MILLS SMALL AREA PLAN ADVISORY COMMITTEE

The Pine Grove Mills Small Area Plan Advisory Committee will meet October 27, 2022. Throughout the month of October, Committee members have been meeting with PZ Staff to discuss ordinance amendments and zoning map amendments. Staff are helping these members identify their specific purpose/goals for amending the zoning ordinance, identify their purpose/goals for creating an overlay zoning district, and review current regulations for Home Occupations/No-Impact Home Based Businesses.

The Committee reviewed season streetlight décor ideas and chose string lights to wrap around every other streetlight, a fall bow for every light, and a holiday wreath for every other streetlight. Concerns were expressed over the decorations that are lit up and how close the streetlights are to residential homes and opted to alternate every other pole to start.

The Committee is also working on developing educational materials for residents of Pine Grove Mills to inform them of different processes of obtaining a home occupation permit, zoning permits for additions, the minor alteration process and uses permitted in the Village Zoning District to help educate residents of the benefits of rezoning property to Village.

ROUTE 45 GETAWAYS COMMITTEE

The Committee will meet October 26, 2022.

The Committee received notification that Happy Valley Agventure Bureau (HVAB) awarded the Committee $8,000.00 for infrastructure projects that will improve visitor/customer experience for businesses in Centre County. Funding for the grant program was made possible by the PA Department of Community and Economic Development (DCED) as part of its Marketing to Attract Tourists program.

The Committee will utilize the funds for installing Tourist Oriented Directional Signing (TODS) for businesses that participate in the Route 45 Getaways event and to purchase footers and poles to display event banners across Route 45. Ideally, with additional signage, tourists and visitors will support the local economy in the arts, entertainment, recreation, and agricultural sectors along the Route 45 corridor. PZ Staff completed an application for businesses interested in obtaining TOD Signage.

ORDINANCE NO. _____

AN ORDINANCE OF THE TOWNSHIP OF FERGUSON, CENTRE COUNTY, PENNSYLVANIA, ESTABLISHING CHAPTER 21, STREETS AND SIDEWALKS; PART 6, NON-TOWER SMALL CELL WIRELESS COMMUNICATION FACILITIES IN THE RIGHT-OF-WAY, AS ATTACHED HERETO AS EXHIBIT "A", AND AMENDING CHAPTER 27, ZONING; PART 7, SUPPLEMENTAL REGULATIONS; SECTION 710, TOWER-BASED WIRELESS COMMUNICATIONS FACILITIES, AND PART 11, DEFINITIONS; SECTION 1102, DEFINITIONS AS ATTACHED HERETO AS EXHIBIT "B".

The Board of Supervisors of the Township of Ferguson hereby ordains:

Section 1—Chapter 21, Streets and Sidewalks, Part 6, Non-Tower Small Cell Wireless Communication Facilities in the Right-of-Way is hereby established as attached hereto as Exhibit "A".

Section 2—Chapter 27, Zoning, Part 7, Supplemental Regulations, Section 710, Tower-Based Wireless Communications Facilities and Part 11, Definitions; Section 1102, Definitions is hereby amended by removing the stricken text and adding the underlined text as attached hereto as Exhibit "B".

Section 3—The forgoing Section 1 and Section 2 shall be effective immediately upon the date of the enactment of this ordinance.

ORDAINED and ENACTED this 1st day of November 2022**.**

TOWNSHIP OF FERGUSON

By:_____
Laura Dininni, Chair
Board of Supervisors

[S E A L]

ATTEST:

By:_____
Centrice Martin, Secretary

Chapter 21
Streets and Sidewalks

Part 6
Non-Tower-Based or Small Wireless Communications Facilities in the Right-of-Way

1. Purpose and Intent.

A. The purpose of this Part is to establish procedures and standards consistent with all applicable federal and state laws, for the consideration, permitting, siting, construction, installation, collocation, modification, operation, regulation and removal of Non-Tower-Based or Small-Wireless Facilities ("SWF") in the public right-of-way of streets and roads.

B. The intent of this Part is to:

(1) Establish basic criteria for applications to install and/or collocate SWFs in the public right-of-way;

(2) Ensure that SWFs are appropriately designed, constructed, modified, maintained, and removed when no longer in use in conformance with all applicable health and safety regulations;

(3) Preserve the character of the Township by minimizing the potentially adverse visual impact of SWFs through careful design, siting, landscaping and camouflaging techniques to blend these facilities into their environment to the maximum extent practicable;

(4) Establish an application process and structure for payment of fees and charges to be uniformly applied to all applicants, operators and owners of SWFs for such facilities;

(5) Comply with, and not conflict with or preempt, all applicable state and federal laws, as may be amended or superseded, and all FCC rules and regulations to interpret and implement applicable federal statutes; and

(6) Limit interference with the use of streets, sidewalks, alleys, parkways, public utilities, public views, certain Township corridors, and other public ways and places.

C. Zoning. Applications to collocate a SWF or install or modify an associated utility pole in the rights-of-way shall be treated as a permitted use pursuant to Act 50 of 2021, the Small Wireless Facilities Deployment Act, and exempt from local zoning where required by the Act. However, the applicant must obtain any and all permits of general applicability otherwise required for the work required to accomplish the above, including but not limited to any pave-cut or right-of-way occupancy permit required under this Chapter of Ferguson Township Code of Ordinances. All other wireless facilities not meeting the definition of a small-wireless facility shall remain subject to any applicable zoning requirements.

D. This Chapter is intended to implement the requirements of the Small Wireless Facilities Deployment Act. Failure of the Township to include all language set forth in that Act in this Ordinance does not constitute a waiver of any right under the Act.

2. Applicability. The provisions of this Chapter shall only apply to activities of a wireless provider within the right-of-way to deploy SWFs and associated new utility poles with small wireless facilities

attached.

3. Definitions. The following words and phrases when used in this Chapter shall have the meanings given to them in this Part unless the context clearly indicates otherwise:

ANTENNA—Telecommunications equipment that transmits and receives electromagnetic radio signals used in the provision of all types of wireless telecommunications services.

APPLICABLE CODES—Any of the following codes: (1) uniform building, fire, electrical, plumbing or mechanical codes adopted by a recognized code organization or local amendments to those codes enacted solely to address imminent threats of destruction of property or injury to persons. (2) Ferguson Township zoning, land use, streets and sidewalks, rights-of-way and permitting ordinances.

APPLICANT—A communications service provider that submits an application.

APPLICATION—A request submitted by an applicant to Ferguson Township:

(1) for a permit to collocate small wireless facilities; or

(2) to approve the installation, modification, or replacement of a utility pole with small wireless facilities attached.

CABLE FACILITY—Buildings, other structures and equipment used by the owner or operator of a cable television system to provide service. As used in this definition, the term "cable system" shall have the meaning given to it in section 602(6) of the Cable Communications Policy Act of 1984 (Public Law 98-549, 47 U.S.C. § 522(7)).

COLLOCATION OR COLLOCATE—To install, mount, maintain, modify, or replace small wireless facilities on an existing utility pole or other wireless support structure.

COMMUNICATIONS FACILITY—A set of equipment and network components, including wires and cables and associated facilities, used by a communications service provider to provide a communications service.

COMMUNICATIONS SERVICE PROVIDER—Any of the following:

(1) A cable operator as defined in section 602(4) of the Cable Communications Policy Act of 1984 (Public Law 98-549, 47 U.S.C. § 522(5)).

(2) A provider of information service as defined in section 3(20) of the Communications Act of 1934 (48 Stat. 1064, 47 U.S.C. § 153(24)).

(3) A telecommunications carrier as defined in section 3(44) of the Communications Act of 1934 (48 Stat. 1064, 47 U.S.C. § 153(51)).

(4) A wireless provider.

DECORATIVE POLE—A municipal pole that is specially designed and placed for aesthetic purposes.

EMERGENCY—A condition that (1) constitutes a clear and immediate danger to the health, welfare, or safety of the public, or (2) has caused or is likely to cause facilities in the rights-of-way to be unusable and result in loss of the services provided.

FCC—The Federal Communications Commission.

HISTORIC DISTRICT OR BUILDING—A building that is or a group of buildings, properties or sites

that are:

(1) Listed in the National Register of Historic Places or formally determined eligible for listing by the Keeper of the National Register.

(2) Determined to be eligible for listing by the Keeper of the National Register of Historic Places who has been delegated the authority by a Federal agency to list properties and determine their eligibility for the National Register of Historic Places in accordance with section VI.D.1.a.i-v of the Nationwide Programmatic Agreement for Review Regarding the Section 106 National Historic Preservation Act Review Process as specified under 47 CFR Pt. 1, App. C (relating to Nationwide Programmatic Agreement Regarding the Section 106 National Historic Preservation Act Review Process).

(3) Marked as a historical site by the Pennsylvania Historical and Museum Commission pursuant to 37 Pa.C.S. (relating to historical and museums).

(4) Within a historic district created pursuant to the act of June 13, 1961 (P.L.282, No.167), entitled "An act authorizing counties, cities, boroughs, incorporated towns and townships to create historic districts within their geographic boundaries; providing for the appointment of Boards of Historical Architectural Review; empowering governing bodies of political subdivisions to protect the distinctive historical character of these districts and to regulate the erection, reconstruction, alteration, restoration, demolition or razing of buildings within the historic districts."

MICRO WIRELESS FACILITY—A small wireless facility that:

(1) Does not exceed two cubic feet in volume; and

(2) Has an exterior antenna no longer than 11 inches.

MODIFICATION OR MODIFY—The improvement, upgrade or replacement of a small wireless facility or an existing utility pole that does not substantially change, as defined in 47 CFR 1.6100(b)(7) (relating to wireless facility modifications), the physical dimension of the small wireless facility or utility pole.

MUNICIPAL POLE—A utility pole owned, managed, or operated by or on behalf of a municipality.

RIGHT-OF-WAY—The area on, below or above a public roadway, highway, street, sidewalk, alley, utility easement or similar property. The term does not include a Federal interstate highway.

SMALL WIRELESS FACILITY—The equipment and network components, including antennas, transmitters, and receivers, used by a wireless provider that meet the following qualifications:

(1) Each antenna associated with the deployment is no more than three cubic feet in volume.

(2) The volume of all other equipment associated with the wireless facility, whether ground-mounted or pole-mounted, is cumulatively no more than 28 cubic feet. Any equipment used solely for the concealment of the small wireless facility shall not be included in the calculation of equipment volume under this paragraph.

TECHNICALLY FEASIBLE—By virtue of engineering or spectrum usage, the proposed placement for a small wireless facility or its design or site location can be implemented without a material reduction in the functionality of the small wireless facility.

UTILITY FACILITY—Buildings, other structures and equipment owned or operated by a public utility, as defined in 66 Pa.C.S. § 102 (relating to definitions), to provide service.

UTILITY POLE—A pole or similar structure that is or may be used, in whole or in part, by or for telecommunications, electric distribution, lighting, traffic control, signage or a similar function or for collocation. The term includes the vertical support structure for traffic lights but does not include wireless support structures or horizontal structures to which signal lights or other traffic control devices are attached.

WIRELESS FACILITY—As follows:

(1) Equipment at a fixed location that enables wireless service between user equipment and a communications network, including any of the following:

(i) Equipment associated with wireless services.

(ii) Radio transceivers, antennas, coaxial or fiber optic cables, regular and backup power supplies or comparable equipment, regardless of technological configuration.

(2) The term includes a small wireless facility.

(3) The term does not include any of the following:

(i) The structure or improvements on, under or within which the equipment is collocated.

(ii) The coaxial or fiber optic cables that are not immediately adjacent to or directly associated with a particular antenna.

WIRELESS INFRASTRUCTURE PROVIDER—A person authorized by the Pennsylvania Public Utility Commission to provide telecommunications service in this Commonwealth that builds or installs wireless communication transmission equipment, wireless facilities or wireless support structures but is not a wireless services provider.

WIRELESS PROVIDER—A wireless infrastructure provider or a wireless services provider.

WIRELESS SERVICES—Services, whether at a fixed location or mobile, using a licensed or unlicensed spectrum, provided to the public using wireless facilities.

WIRELESS SERVICES PROVIDER—A person who provides wireless services.

WIRELESS SUPPORT STRUCTURE—The term shall have the same meaning given to it in the act of October 24, 2012 (P.L.1501, No.191), known as the Wireless Broadband Collocation Act.

4. Application for the Use of Township Rights-of-Way and Associated Rates and Fees.

A. In accordance with the Small Wireless Facilities Deployment Act, and with the permission of the owner of the structure, upon application to and approval of the Township, a wireless provider shall have the right to perform the following within the public right-of-way;

(1) Collocate a small wireless facility up on an existing utility pole or other support structure;

(2) Replace an existing utility pole or install a new utility pole with attached small wireless facilities.

B. Application and Application Fees: No person shall place a SWF or associated utility pole in the ROW without first filing an application and obtaining a permit therefor, excepts as otherwise provided in this Chapter.

(1) Application. All applications for the permits filed pursuant to this Chapter shall be on a form, paper or electronic, provided by the Township and shall contain at a minimum the following:

(a) The wireless provider's name, address, telephone number, and e-mail address.

(b) The applicant's names, address, telephone numbers, and e-mail address, if different.

(c) The names, addresses, telephone numbers, and e-mail addresses of all consultants, if any, acting on behalf of the applicant with respect to the filing of the application.

(d) The name, address, telephone numbers, and e-mail address of the contractor(s) performing the work.

(e) A general description of the proposed work and the proposed and intent of the small wireless facilities. The scope and detail of such description shall be appropriate to the nature and character of the work to be performed, with special emphasis on those matters likely to be affected or impacted by the work proposed.

(f) A site plan, with sufficient detail to show the proposed location of items the applicant seeks to install in the ROW, including any manholes or poles, the size, type, and depth of any conduit or enclosure.

(g) A certificate of insurance naming Ferguson Township as additional insured with types of coverage and minimum amounts as determined by the Township.

(h) An attestation that the SWFs will be operational for use by a wireless services provider within one year after the permit issuance date unless the Township and the applicant agree to extend this period.

(i) An attestation that to the best of the applicant's knowledge, the information contained in the application is true.

(j) Whether each SWF is proposed to be installed on an existing pole or structure or a new pole or structure.

(k) The name of the owner of the pole or structure on which the SWF is proposed to be installed and the address, phone number, email address of the owner's contact person.

(l) If a SWF is proposed to be installed on a pole or structure owner by a party other than the applicant, the application shall be accompanied by a written confirmation of the owner's agreement to allow the applicant to locate each SWF on such owner's pole or structure.

(m) Documentation in the form of both narrative and drawings indicating the size of each proposed SWF, the height of the pole or structure on which each is proposed to be installed, and the cubic volume of each SWF.

(2) Applications Fees: All applications filed for a permit pursuant to this Chapter shall include a one-time application fees, authorized by the Small Wireless Facilities Deployment Act, and subject to the fee adjustment requirements contained therein, as established by a Resolution of the Township Board of Supervisors.

(3) Consolidated Applications. An applicant may submit a consolidated Application for up to 20 SWFs, subject to the following:

(a) A single applicant shall not exceed applications for 20 SWFs in a 30-day period;

(b) The denial of one or more SWFs in a consolidated application shall not delay processing of any other SWFs in the same consolidated application;

(c) A single permit may be issued for siting and collocating multiple SWFs spaced to provide wireless coverage in a contiguous area; and

(d) If multiple applicants submit applications cumulatively exceeding 20 SWFs applications within a 30-day period, the extensions to deadlines provided for in the Small Wireless Facilities Act shall apply.

(4) When Application Not Required. An application shall not be required for:

(a) Routine maintenance;

(b) The replacement of a small wireless facility with another small wireless facility that is substantially similar in size, weight, and height; or

(c) For the installation, placement, maintenance, operation, or replacement of micro wireless facilities that are strung on cables between existing utility poles, in compliance with the National Electrical Safety Code.

(d) However, all permits of general applicability otherwise required for the work required to accomplish the above, including but not limited to any pave-cut of right-of-way occupancy permit required under Chapter 21 of the Ferguson Township Code of Ordinance, Streets and Sidewalks. In all cases, whether under permit or not under permit, all work in the Township right-of-way shall be performed in accordance with PennDOT Publication 213, Temporary Traffic Control Guidelines, and flagmen shall be certified in the work they perform, and all workers shall wear approved high visibility safety gear.

C. Right-of-Way Use Fees. Wireless providers shall be required to pay an annual Wireless Use Fee for the use of right-of-way. The Wireless Use Fee shall be set by Resolution of the Township Board of Supervisors. The Township may amend the fee from time to time by resolution of the Township Board of Supervisors to a rate not to exceed the maximum rate which it demonstrates is a reasonable approximation of the Township's costs to manage the right-of-way, consistent with the law.

D. Township Pole Make-Ready-Fees. In accordance with the Small Wireless Facilities Deployment Act, collocation on Township-owned poles may be permitted unless the small wireless facility would cause structural or safety deficiencies to the municipal pole. Any application to collocate on a Township-owned pole requires certification from a structural engineer that the existing pole can safely handle the additional load and modification including pole penetrations and the structural integrity of the pole is not compromised. Should the pole require upgrades or make-ready-work for modification, all costs for the improvements shall be born by the applicant. The Township shall provide a good faith estimate for any make-ready-work necessary to enable a Township-owned pole to support the requested collocation within 60-days after receipt of a complete application. Make-ready-work, including pole replacement, shall be completed within 60-days of written acceptance of the good faith estimate by the applicant.

5. Action on Permit Applications.

A. Review of Small Wireless Facility and Utility Pole Applications.

(1) Within ten (10) days of receiving an initial application, the Township will determine and notify the applicant whether the application is materially complete. Each application shall be accompanied by a checklist from the applicant identifying all elements required in the application as required by the Township to be considered materially complete. The processing deadline set forth below shall restart at zero on the date which the applicant submits all documents and information identified by the Township to make the applicant complete. If the applicant fails to submit all required documents information within 20 days of the notification to the applicant, the Township may deny the application.

(2) The Township shall approve or deny an application for:

(a) Collocation of SWFs on an existing structure within 60-days of receipt of a complete application, or;

(b) Within 90-days of receipt of a complete application to replace an existing utility pole or install a new utility pole with small wireless facilities attached.

(3) An applicant and the Township may enter into a written agreement to toll the time periods set forth in Subsection (2).

(4) The Township may deny a proposed collocation of a SWF or installation or modification of a utility pole only if the proposed application:

(a) The SWF materially interferes with the safe operation of traffic control equipment, sight lines or clear zones for transportation or pedestrians or compliance with the Americans with Disabilities Act of 1990 (Public Law 101·336, 104 Stat. 327) or similar Federal or State Standards regarding pedestrian access or movement.

(b) The SWF fails to comply with applicable codes.

(c) The SWF fails to comply with the requirements specified under the Small Wireless Facilities Deployment Act.

(d) The applicant fails to submit a report by a qualified engineering expert which shows that the SWF will comply with applicable FCC regulations.

(5) The Township shall document the basis for a denial, including the specific code provisions on which the denial was based, and send the documentation to the applicant on or before the day the Township denies an application. The applicant may cure the deficiencies identified by the Township and resubmit the application within 30-days of receiving the written basis for the denial without paying an additional application fee. The Township shall approve or deny the revised application within 30-days. Any subsequent review shall be limited to the deficiencies cited in the denial unless, the resubmitted application addresses or changes other sections of the application that were not previously denied, in which case the Township shall be given an additional 15-days to review the resubmitted application and may charge an additional fee for the review.

(6) Permit Scope and Effect. Installation, modification, or collocations for which a permit is granted pursuant to this section shall be completed within one year after the permit issuance date unless the Township and the applicant agree to extend this period. Approval of an application authorizes the applicant to:

(a) Collocate on an existing utility pole, modify, or replace a utility pole or install a new utility pole with SWFs attached as identified in the initial application.

(b) Subject to the permit requirements and the applicant's right to terminate at any time, operate and maintain SWFs and any associated equipment on a utility pole covered by the permit for a period of not less than five years, which shall be renewed for two additional five-year periods if the applicant is in compliance with the criteria set forth in the Small Wireless Facilities Deployment Act and applicable codes, and the applicant has obtained all necessary consent from the utility pole owners.

(7) Authority Granted; No Property Right or Other Interest Created. A permit from the Township authorizes an applicant to undertake only certain activities in accordance with this Chapter and does not create a property right or grant authority to the applicant to impinge upon the rights of

others who may already have an interest in the ROW.

(8) Design Criteria and Permit Review.

(a) All SWF proposed under this Chapter must meet the following design criteria:

(i) Height: the installation of a SWF on an existing utility pole may not extend more than five (5') feet above the existing utility pole, if collection on an existing utility pole cannot be achieved, the maximum height permitted for the entire facility, including the utility pole and SWF including antenna facilities, may not be taller than fifty (50') feet. The Township Board of Supervisors may grant a waiver of this height requirements subject to applicable code.

(ii) SWF Size: Each antenna associated with the deployment (excluding the associated equipment) may be no more than three cubic feet in volume; and all other equipment associated with the facility (excluding antenna) are cumulatively no more than 28 cubic feet in volume.

(b) General Design Requirements.

(i) The Township may adopt by resolution Small Wireless Facility Design Guidelines with objective, technically feasible criteria applied in a non-discriminatory manner that reasonably match the aesthetics and character of the immediate area.

(ii) The Small Wireless Facility Design Guidelines may include examples of SWF preferences including visual depictions (if readily available and identified by the Township).

(iii) The provisions in this Chapter shall not limit or prohibit the Township's discretion to promulgate and make publicly available other information, materials, or requirements in addition to, and separate from, Small Wireless Facility Design Guidelines so long as the information, materials, or requirements do not conflict with federal or state law.

(iv) All SWFs and associated equipment located within the Public Right-of-Way shall be located such that it meets ADA requirements and does not hinder, obstruct, or impede usual pedestrian and vehicular travel.

(v) The Township shall have the authority to update or supplement the Small Wireless Facility Design Guidelines to address relevant changes in law, technology, or administrative processes.

(c) Wireless Support Structure Design Standards

(i) General Guidance.

1. SWF equipment must be indistinguishable from the support pole or structure to the greatest degree possible using matching colors, textures, and materials. The antennas and related equipment shall be in a color that will provide the most camouflage.

2. All wires, antennas, and other small wireless facility equipment shall be enclosed and not visible.

3. Screening and equipment enclosures shall blend with or enhance the surrounding context in terms of scale, form, texture, materials, and color. Equipment shall be concealed as much as possible by blending into the natural and/or physical

environment.

4. Casing to enclose wires, antennas, and other small wireless facility equipment may be mounted on top of existing and new poles in a cylinder shape to look like an extension of the pole.

5. Signage of all SWF will be no larger than required to be legible from street level. It may include contact information to be used by workers on or near the SWF and as otherwise required by federal or state law.

6. As a condition for approval of new SWFs or new Wireless Support Structure in a Historic District, the Applicant shall comply, to the greatest extent possible, with the design and aesthetic standards of the Historic District, or historic preservation standards in place to minimize the negative impact to the aesthetics in these districts or areas.

6. Removal of Equipment.

A. Within 60-days of a suspension or revocation of a permit due to noncompliance with applicable codes, the applicant shall remove the small wireless facility and any associated equipment, including the utility pole and any support structures if the applicant's wireless facilities and associated equipment are the only facilities on the utility pole, after receiving adequate notice and an opportunity to cure noncompliance. Surety, in a form acceptable to the Township, shall be posted by the applicant to cover the cost by the Township to remove the SWF and associated equipment, should the applicant fail to comply.

B. Within 90-days of the end of a permit term or an extension of the permit term, the applicant shall remove the small wireless facility and any associated equipment, including the utility pole and any support structures if the applicant's wireless and associated equipment are the only facilities on the utility pole. Surety, in a form acceptable to the Township shall be posted by the applicant to cover the cost by the Township to remove the SWF and associated equipment, should the applicant fail to comply.

7. Restoration of the Right-of-Way.

A. Applicants are required to repair all damage directly caused by the activities of the applicant and return the right-of-way in as good of condition as it existed prior to any work being done. If the applicant fails to make the repairs required by the Township within 30-days after written notice, the Township may perform those repairs and charge the provider the reasonable, documented cost of the repairs plus a penalty not to exceed $500. The Township may suspend the ability of an applicant to receive a new permit from the Township until the applicant has paid the amount assessed for the repair costs and the assessed penalty.

8. Indemnification.

A. Each person that owns or operates a Non-Tower WCF shall, at its sole cost and expense, indemnify, defend and hold harmless the Township, its elected and appointed officials, employees, and agents, at all times against any and all claims for personal injury, including death, and property damage arising in whole or in part from, caused by or connected with any act or omission of the person, its officers, agents, employees, or contractors arising out of, but not limited to, the construction, installation, operations, maintenance or removal of the Non-Tower WCF. Each Person that owns or operates a Non-Tower WCF shall defend any actions or proceedings against the Township in which it is claimed that personal injury, including death, or property damage was caused by the construction, installation, operation, maintenance or removal of a Non-Tower WCF. The obligation to indemnify, hold harmless and defend shall include, but not be limited to, the obligation to pay judgements, injuries, liabilities, damages,

reasonable attorneys' fees, reasonable expert fees, court costs and all other costs of indemnification.

9. Other Ordinances.

A. Nothing in this Ordinance shall be interpreted to relieve any individual from compliance with all other ordinances, resolutions, laws, and regulations of the Township.

10. Severability.

A. The provisions of this ordinance are severable, and if any section, sentence, clause, part, or provisions hereof shall be held illegal, invalid, or unconstitutional by any court of competent jurisdiction, such decision of the court shall not affect or impair the remaining sections, sentences, clauses, or parts of this Ordinance. It is hereby declared to be the intent of the Township Board of Supervisors that this Ordinance would have been adopted if such illegal, invalid, or unconstitutional sections, sentence, clause, part, or provisions had not been included herein.

The following Code does not display images or complicated formatting. Codes should be viewed online. This tool is only meant for editing.

§ 27-710 Tower-Based **Wireless Communications Facilities.**
[Ord. No. 1049, 11/18/2019]

1. Intent. The wireless communications facilities (WCF) regulations are intended to achieve the following:

   A. To provide a competitive and wide range of communications services.

   B. To encourage the shared use of existing communication towers, buildings and structures.

   C. To ensure compliance with federal and state regulations.

   D. To promote the health, safety and welfare of Township residents and businesses with respect to wireless communications facilities.

   E. To address modern and developing technologies including, but not limited to, distributed antenna systems, data collection units, cable Wi-Fi and other communications facilities.

   F. To establish procedures for design, siting, construction, installation, maintenance and removal of both tower-based and non-tower-based wireless communications facilities in the Township, including facilities both inside and outside of the public rights-of-way.

   G. To protect Township residents and businesses from potential adverse impacts of wireless communications facilities and preserve, to the extent permitted under law, the visual character of established communities and the natural beauty of the landscape.

2. General Requirements for All Tower-Based Wireless Communications Facilities. The following regulations shall apply to all tower-based wireless communications facilities:

   A. Standard of Care. Any tower-based WCF shall be designed, constructed, operated, maintained, repaired, modified and removed in strict compliance with all current applicable technical, safety, and safety-related codes including, but not limited to, the most recent editions of the American National Standards Institute (ANSI) Code, National Electrical Safety Code, National Electrical Code, as well as the accepted and responsible workmanlike industry practices of the National Association of Tower Erectors. Any tower-based WCF shall at all times be kept and maintained in good condition, order and repair by qualified maintenance and construction personnel, so that the same shall not endanger the life of any person or any property in the Township.

   B. Wind. Any tower-based WCF structures shall be designed to withstand the effects of wind according to the standard designed by the ANSI as prepared by the engineering departments of the Electronics Industry Association, and Telecommunications Industry (ANSFEINTIA-222-E Code, as amended).

   C. Height. Any tower-based WCF outside of the ROW shall be designed at the minimum functional height and shall not exceed a maximum total height of 200 feet~~, or 40 feet when located within the ROW, which height~~and shall include all subsequent additions or alterations. Height shall be measured from the average natural grade to the top point of the communications tower or antenna, whichever is greater. All tower-based WCF applicants must submit documentation to the Township justifying the total height of the structure. Tower-based WCF constructed outside the ROW at a height greater than 200 feet but not to exceed 300 feet shall be permitted as a conditional use in the RA, AR, RR, C, FG, I and IRD Districts by the Board of Supervisors if the following criteria are met:

      (1) The applicant shall provide documentation to the Township which details the commitment to provide capacity on the proposed tower-based WCF to more than one provider. The

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document must describe the additional tower height that is required to provide the capacity to the additional provider(s). The document shall also show that by providing the additional height and capacity, there will not be a need from the involved companies for an additional tower outside the ROW within a radius of one mile of the site. The burden of proof shall be on the applicant to show that the proposed tower is the minimum height needed to provide the required service.

(2) The applicant shall provide documentation to the Township that the height limitation of 200 feet will require the construction of two or more towers and that by permitting an increase in the height of the tower, only one tower will be required. The burden of proof shall be on the applicant to show that the proposed tower is the minimum height needed to provide the required services. The purpose of this conditional use is to permit an increase in the height of one tower to reduce the need for additional towers.

D. Public Safety Communications. No tower-based WCF shall interfere with public safety communications or the reception of broadband, television, radio or other communication services enjoyed by occupants of nearby properties.

E. Maintenance. The following maintenance requirements shall apply:

(1) Any tower-based WCF shall be fully automated and unattended on a daily basis and shall be visited only for maintenance or emergency repair, except as permitted and in accordance this section.

(2) Such maintenance shall be performed to ensure the upkeep of the facility in order to promote the safety and security of the Township's residents.

(3) All maintenance and activities shall utilize the best available technology for preventing failures and accidents.

F. Radio Frequency Emissions. No tower-based WCF may, by itself or in conjunction with other WCF, generate radio frequency emissions in excess of the standards and regulations of the Federal Communications Commission (FCC) including, but not limited to, the FCC Office of Engineering Technology Bulletin 65 entitled "Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields," as amended. The applicant shall provide, upon request, a statement from a qualified licensed and professional registered engineer that the non-ionizing electromagnetic radiation (NIER) emitted from the tower-based WCF, when measured in conjunction with the emissions from all communications antenna on the tower, does not result in an exposure at any point on or outside such facility which exceeds the lowest applicable exposure standards established by the FCC or the ANSI.

G. Historic Buildings or Districts. No tower-based WCF may be located on or within 200 feet of a site that is listed on an historic register, a site listed for inclusion on the historic register, or in an officially designated state or federal historic district.

H. Identification. All tower-based WCF shall post a notice in a readily visible location identifying the name and phone number of a party to contact in the event of an emergency, subject to approval by the Township. The notice shall not exceed two square feet in gross surface area and shall maintain the contact party.

I. Lighting. Tower-based WCF shall not be artificially lighted, except as required by the Federal Aviation Administration and as may be approved by the Township. If lighting is required, the applicant shall provide a detailed plan for sufficient lighting, demonstrating as unobtrusive and inoffensive an effect as is permissible under state and federal regulations. No flag shall be located on the structure that requires lighting.

J. Appearance. Towers shall be galvanized and/or painted with a rust-preventive paint of an appropriate color as determined by the Township Planning and Zoning Director to harmonize

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with the surroundings.

K. Noise. Tower-based WCF shall be operated and maintained so as not to produce noise in excess of applicable noise standards under state law and Chapter **10**, Part **3**, of the Ferguson Township Code of Ordinances, except in emergency situations requiring the use of a backup generator, where such noise standards may be exceeded on a temporary basis only.

L. Aviation Safety. Tower-based WCF shall comply with all federal and state laws and regulations concerning aviation safety.

M. Retention of Experts. The Township may hire any consultant(s) and/or expert(s) necessary to assist the Township in reviewing and evaluating the application for approval of the tower-based WCF and, once approved, in reviewing and evaluating any potential violations of the terms and conditions of this section. The applicant and/or owner of the WCF shall reimburse the Township for all costs of the Township's consultant(s) in providing expert evaluation and consultation in connection with these activities.

N. Timing of Approval. Within 30 calendar days of the date that an application for a tower-based WCF is filed with the Township, the Township shall notify the applicant, in writing, of any information that may be required to complete such application. All complete applications for tower-based WCF shall be acted upon within 150 days of the receipt of a fully completed application for the approval of such tower-based WCF, and the Township shall advise the applicant, in writing, of its decision. If additional information is requested by the Township to complete an application, the time required by the applicant to provide the information shall not be counted toward the 150-day review period.

O. Nonconforming Uses. Nonconforming tower-based WCF which are hereafter damaged or destroyed due to any reason or cause may be repaired and restored at their former location, but must otherwise comply with the terms and conditions of this section. Co-location of facilities may be permitted on nonconforming structures in accordance with standards established in the Pennsylvania Wireless Broadband Collocation Act.

P. Removal. In the event that use of a tower-based WCF is planned to be discontinued, the owner shall provide written notice to the Township of its intent to discontinue use and the date when the use shall be discontinued. Unused or abandoned WCF or portions of WCF shall be removed as follows:

(1) All unused or abandoned tower-based WCF and accessory facilities shall be removed within six months of the cessation of operations at the site unless a time extension is approved by the Township.

(2) If the WCF and/or accessory facility is not removed within six months of the cessation of operations at a site, or within any longer period approved by the Township, the WCF and accessory facilities and equipment may be removed by the Township and the cost of removal assessed against the owner of the WCF. The Township reserves the right to pursue any and all available remedies under law or equity to ensure removal of the WCF and restoration of the site at the expense of the owner. Any delay in the Township in taking action shall not invalidate the Township's right to take such action.

(3) Any unused portions of tower-based WCF, including antennas, shall be removed within six months of the time of cessation of operations. The Township must approve all replacements of portions of a tower-based WCF previously removed.

Q. Application Fees. The Township may assess appropriate and reasonable application fees directly related to the Township's actual costs in reviewing and processing the application for approval of a tower-based WCF, as well as related inspection, monitoring and related costs.

3. Tower-Based Wireless Communications Facilities Outside the Rights-of-Way. The following

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regulations shall apply to tower-based wireless communications facilities located outside ~~of~~ the right-of-way (ROW):

A. Permitted Only in Certain Zones. No tower-based WCF shall be permitted within 500 feet of the nearest adjoining property line. Tower-based WCF shall only be permitted as designated in zoning districts as identified within the chapter.

~~B. Evidence of Need. It is required that the applicant for the placement of a tower-based WCF that will exceed 40 feet in height shall submit to Ferguson Township evidence of the need for the tower-based WCF in the proposed location and that the applicant has exhausted all alternatives to locate on an existing tower or structure (co-location). In addition, the applicant must demonstrate via written evidence from a qualified, licensed, and professional engineer that, in terms of location and construction, there are no existing towers, tower-based WCF, buildings, structures, elevated tanks or similar uses able to provide the platform for the antenna within a one-mile radius of the chosen location, unless the applicant can demonstrate to the satisfaction of the Township that a different distance is more reasonable. Co-location is not possible if:~~

~~(1) Coverage diagrams and technical reports demonstrate that co-location on an existing tower-based WCF is not technically possible in order to serve the desired need.~~

~~(2) Planned equipment would exceed the structural capacity of existing towers within the Township, considering existing and planned use of those towers and existing towers cannot be reinforced to accommodate planned or equivalent equipment at a reasonable cost.~~

~~(3) Planned equipment will cause radio frequency (RF) interference with other existing or planned equipment for that tower and the interference cannot be prevented at a reasonable cost.~~

~~(4) Existing or approved towers do not have the space on which planned equipment can be placed so it can function effectively and at least in parity with other similar equipment in place or planned.~~

~~(5) Other reasons can be demonstrated to the satisfaction of the Township that make it impractical to place the equipment planned by the applicant on existing and approved towers.~~

~~C~~B. Sole Use on a Lot. A tower-based WCF is permitted as the sole use on a lot subject to the minimum lot size and setbacks complying with the requirements of the applicable zoning district.

~~D~~C. Combined with Another Use. A tower-based WCF may be permitted on a property with an existing use or on a vacant parcel in combination with another agricultural, industrial, commercial, or municipal use, subject to the following conditions:

(1) The existing use on the property may be any permitted use in the applicable zoning district and need not be affiliated with the communications facility.

(2) Minimum Lot Area. The minimum lot shall comply with the requirements for the applicable zoning district and shall be the area needed to accommodate the tower-based WCF, the communications facility building, security fence, and buffer planting.

(3) Minimum Setbacks. The tower-based WCF and accompanying communications facility building shall comply with the requirements for the applicable zoning district, provided that no tower-based WCF shall be located within 500 feet of the nearest adjoining property line.

~~E~~D. Notice. Upon receipt of a letter of a complete application by the Township for a tower-based

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WCF, the applicant shall mail notice thereof to the owner or owners of every property within 500 radial feet of the parcel or property of the proposed facility. The applicant shall provide the Township with evidence that the notice was mailed out to applicable property owners.

~~F~~E. Design and Construction.

(1) The WCF shall employ the most current stealth technology available in an effort to appropriately blend into the surrounding environment and minimize aesthetic impact. The application of the stealth technology chosen by the WCF applicant shall be subject to the approval of the Township.

(2) To the extent permissible under applicable law, any height extensions to an existing tower-based WCF shall require prior approval of the Township. The Township reserves the right to deny such requests based upon aesthetic and land use impact, or any other lawful considerations related to the character of the Township.

(3) Any proposed tower-based WCF shall be designed structurally, electrically, and in all respects to accommodate both the WCF applicant's antennas and comparable antennas for at least two additional users if the tower is over 100 feet in height or for at least one additional user if the tower is over 60 feet in height. Tower-based WCF must be designed to allow for future rearrangement of antennas upon the tower and to accept antennas mounted at various heights.

(4) Guy wires are not permitted. The monopole must be self-supporting.

~~G~~F. Surrounding Environs. A soil report complying with the standards of Appendix I: Geotechnical Investigations, ANSI/EIA/TIA-222-G Manual, as amended, shall be submitted to the Township to document and verify design specifications of the foundation for the tower-based WCF.

~~H~~G. Fence/Screen.

(1) A security fence of approved design, of not less than eight feet in height and no greater than 10 feet in height, shall completely enclose the tower-based WCF. The fencing required in must also have a one-foot barbed arm slanted at a 45° angle which runs along the entire top of the fence.

(2) The applicant shall submit a landscaping plan. Sites in which communications towers are located shall be required to comply with the following landscape requirements:

(a) Landscaping, consisting of evergreen plantings which shall reach a height of at least eight feet within five years of planting shall be required at the perimeter of the security fences and WCF. Existing wooded areas, tree lines and hedgerows adjacent to the facility shall be preserved and used to substitute or meet a portion of the buffer yard requirements. When the WCF is located in a developed commercial or industrial area, the Board of Supervisors may waive the buffer yard regulations in exchange for another type of screening which is compatible with the surrounding land use.

(3) Where feasible/appropriate, the tower or antenna shall be constructed to blend in with the surrounding area.

(4) No signs or any form of advertising of any kind shall be permitted on the WCF or antennas. However, one sign, not to exceed two square feet in gross surface area, which identifies the phone number and contact in the event of an emergency is required. In addition, "No Trespassing" signs may be placed on the security fencing in accordance with the Township's Sign Ordinance (Chapter **19**).

~~I~~H. Accessory Equipment.

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(1) Ground-mounted equipment associated with, or connected to, a tower-based WCF shall be underground, if possible. In the event that an applicant can demonstrate that the equipment cannot be located underground to the satisfaction of the Township Engineer, then the ground-mounted equipment shall be screened from public view using stealth technologies, as described above.

(2) All buildings and structures associated with a tower-based WCF shall be architecturally designed to blend into the environment in which they are situated and shall meet the minimum setback requirements of the underlying zoning district.

~~J~~I. Access Road. An access road, turnaround space and parking shall be provided to ensure adequate emergency and service access to tower-based WCF. Maximum use of existing roads, whether public or private, shall be made to the extent practicable. Road construction shall at all times minimize ground disturbance and the cutting of vegetation. Road grades shall closely follow natural contours to assure minimal visual disturbance and minimize soil erosion. The vehicular access to the tower-based WCF and communications facility building shall meet the applicable municipal street standards for private streets and/or driveway standards. Where applicable, the WCF owner shall present documentation to the Township that the property owner has granted an easement for the proposed facility.

~~K~~J. Inspection. The Township reserves the right to inspect any tower-based WCF to ensure compliance with the provisions of this section and any other provisions found within the Township Code of Ordinances or state or federal law. The Township and/or its agents shall have the authority to enter the property upon which a WCF is located at any time, upon reasonable notice to the operator, to ensure such compliance.

~~4. Tower-Based Wireless Communications Facilities Inside the Rights-of-Way. The following regulations shall apply to tower-based wireless communications facilities located in the rights-of-way (ROW):~~

~~A. Permitted Where Aboveground Utility Infrastructure Exists. No tower-based wireless communications facilities shall be located in areas where utility infrastructure is installed underground.~~

~~(1) In areas not served by aboveground utility infrastructure, tower-based WCF may be constructed at intersections of arterial and arterial street classifications and arterial and collector street classifications to provide coverage and capacity.~~

~~B. Evidence of Need. It is required that the applicant for the placement of a tower-based WCF shall submit to Ferguson Township evidence of the need for the tower-based WCF in the proposed location and that the applicant has exhausted all alternatives to locate on an existing tower or structure (co-location). In addition, the applicant must demonstrate via written evidence from a qualified, licensed, professional engineer that, in terms of location and construction, there are no existing towers, tower-based WCF, buildings, structures, elevated tanks or similar uses able to provide the platform for the antenna within a 1/2-mile radius of the chosen location, unless the applicant can demonstrate to the satisfaction of the Township that a different distance is more reasonable. Co-location is not possible if:~~

~~(1) Capacity diagrams and technical reports demonstrate that co-location on an existing tower-based WCF is not technically possible in order to serve the desired need.~~

~~(2) Planned equipment would exceed the structural capacity of existing towers within the Township, considering existing and planned use of those towers and existing towers cannot be reinforced to accommodate planned or equivalent equipment at a reasonable cost.~~

~~(3) Planned equipment will cause radio frequency (RF) interference with other existing or~~

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planned equipment for that tower and the interference cannot be prevented at a reasonable cost.

(4) Existing or approved towers do not have the space on which planned equipment can be placed so it can function effectively and at least in parity with other similar equipment in place or planned.

(5) Other reasons can be demonstrated to the satisfaction of the Township that make it impractical to place the equipment planned by the applicant on existing and approved towers.

C. Notice. Upon submission of an application for a tower-based WCF, the applicant shall mail notice thereof to the owner or owners of every property within 500 feet of the parcel or property of the proposed facility. The applicant shall provide the Township with evidence that the notice was mailed out to applicable property owners.

D. Co-Location. An application for a new tower-based WCF in the ROW shall not be approved unless the Township finds that the proposed wireless communications equipment cannot be accommodated on an existing structure, such as a utility pole. Any application for approval of a tower-based WCF shall include a comprehensive inventory of all existing towers and other suitable structures within a 1/2 mile radius from the point of the proposed tower, unless the applicant can show to the satisfaction of the Township that a different distance is more reasonable, and shall demonstrate conclusively why an existing tower or other suitable structure cannot be utilized. Co-location shall not be permitted on ornamental streetlight fixtures.

E. Time, Place, and Manner. The Township shall determine the time, place, and manner of construction, maintenance, repair, and/or removal of all tower-based WCF in the ROW based on public safety, traffic management, physical burden on the ROW, and related considerations. For public utilities, the time, place, and manner requirements shall be consistent with the police powers of the Township and the requirements of the Public Utility Code.

F. Equipment Location. Tower-based WCF and accessory equipment shall be located so as not to cause any physical or visual obstruction to pedestrian or vehicular traffic, or to otherwise create safety hazards to pedestrians and/or motorists or to otherwise inconvenience public use of the ROW as determined by the Township in addition:

(1) In no case shall ground-mounted equipment, walls, or landscaping be located within 18 inches of the face of the curb. In the absence of a curb, facility must be located outside the safe clear zone of the roadway as determined by Public Works Director.

(2) Ground-mounted equipment that cannot be underground shall be screened, to the fullest extent possible, through the use of landscaping or other decorative features to the satisfaction of the Township.

(3) Required electrical meter cabinets shall be screened to blend in with the surrounding area to the satisfaction of the Township.

(4) Any graffiti on the tower or any accessory equipment shall be removed at the sole expense of the owner within 10 business days of notice of the existence of the graffiti.

(5) Any underground vaults related to tower-based WCF shall be reviewed and approved by the Township.

G. Design Regulations.

(1) The WCF shall employ the most current stealth technology available in an effort to

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appropriately blend into the surrounding environment and minimize the aesthetic impact. The application of the stealth technology chosen by the WCF applicant shall be subject to the approval of the Township.

(2) Any height extensions to an existing tower-based WCF shall require prior approval of the Township, and shall not increase the overall height of the tower-based WCF to more than 50 feet. The Township reserves the right to deny such requests based upon aesthetic and land use impact or any other lawful considerations related to the character of the Township.

(3) Guy wires are not permitted. The monopole must be self-supporting.

H. Additional Antennas. As a condition of approval for all tower-based WCF in the ROW, the WCF applicant shall provide the Township with a written commitment that it will allow other service providers to co-locate antennas on tower-based WCF where technically and economically feasible. The owner of a tower-based WCF shall not install any additional antennas without obtaining the prior written approval of the Township.

I. Relocation or Removal of Facilities. Within 60 days following written notice from the Township, or such longer period as the Township determines is reasonably necessary or such shorter period in the case of an emergency, an owner of a tower-based WCF in the ROW shall, at its own expense, temporarily or permanently remove, relocate, change, or alter the position of any WCF when the Township, consistent with its police powers and the applicable public utility commission regulations, shall determine that such removal, relocation, change, or alteration is reasonably necessary under the following circumstances:

(1) The construction repair, maintenance, or installation of any Township or other public improvement in the right-of-way.

(2) The operations of the Township or other governmental entity in the right-of-way.

(3) Vacation of a street or road or the release of a utility easement.

(4) An emergency as determined by the Township.

J. Compensation for ROW Use. In addition to the permit fees, every tower-based WCF in the ROW is subject to the Township's right to fix annually a fair and reasonable compensation to be paid for use and occupancy of the ROW. Such compensation for ROW use shall directly related to the Township's actual ROW management costs including, but not limited to, the costs of the administration and performance of all reviewing, inspecting, permitting, supervising, and other ROW management activities by the Township. The owner of each tower-based WCF shall pay an annual fee to the Township to compensate the Township for the Township's costs incurred in connection with the activities described above. The annual ROW management fee for tower-based WCF shall be determined by the Township and authorized by resolution of the Board of Supervisors and shall be based on the Township's actual ROW management costs as applied to such tower-based WCF.

K. Restoration Deposit. Prior to the issuance of a permit, the owner of each individual tower-based WCF shall, at its own cost and expense, deliver a restoration deposit in an amount determined by the Director of Public Works, or his designee. The return of the deposit shall be contingent upon the proper restoration of the ROW and compliance with the terms and conditions of this section. Upon installation of the tower-based WCF, the applicant shall notify the Township that the site is ready for inspection. The Public Works Director or his designee shall inspect the site and, if it is found to be satisfactory, the restoration deposit shall be refunded to the applicant within 30 days. The restoration deposit may be forfeited in whole or in part to the Township if any work is found to be incomplete or not in compliance with all applicable standards.

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~~5~~4. General Requirements for All Non-Tower-Based Wireless Communications Facilities or Small Wireless Communications Facilities located outside the Right-of-Way:~~.~~

A. For the purposes of this section, the regulations shall only apply to non-tower-based wireless communications facilities that are not regulated by the Pennsylvania Wireless Broadband Collocation Act~~,~~ or the Small Wireless Facilities Deployment Act (Act 50), except where noted or where otherwise permitted by law.

B. The following regulations shall apply to all non-tower-based wireless communications facilities located outside the right-of-way, that do not substantially change the physical dimensions of the wireless support structure to which they are attached, as defined above:

(1) Permitted in All Zones Subject to Regulations. Non-tower-based WCF are permitted in all zones subject to the restrictions and conditions prescribed below and subject to the prior written approval of the Township.

(2) Standard of Care. Any non-tower-based WCF shall be designed, constructed, operated, maintained, repaired, modified, and removed in strict compliance with all current applicable technical, safety, and safety-related codes, including, but not limited to, the most recent editions of the American National Standards Institute (ANSI) Code, National Electrical Safety Code, and National Electrical Code. Any non-tower-based WCF shall at all times be kept and maintained in good condition, order, and repair by qualified maintenance and construction personnel, so that the same shall not endanger the life of any person or any property in the Township.

(3) Wind. Any non-tower-based WCF structure shall be designed to withstand the effects of wind according to the standard designed by the American National Standards Institute as prepared by the engineering departments of the Electronics Industry Association, and Telecommunications Industry Association (ANSI EIA/TIA-222-G, as amended).

(4) Public Safety Communications. No non-tower-based WCF shall interfere with public safety communications or the reception of broadband, television, radio, or other communication services enjoyed by occupants of nearby properties.

(5) Aviation ~~s~~Safety Non-tower-based WCF shall comply with all federal and state laws and regulations concerning aviation safety.

(6) Radio Frequency Emissions. No non-tower-based WCF shall, by itself or in conjunction with other WCF, generate radio frequency emissions in excess of the standards and regulations of the FCC, including, but not limited to, the FCC Office of Engineering Technology Bulletin 65 entitled, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields," as amended.

(7) Removal. In the event that the use of a non-tower-based WCF is discontinued, the owner shall provide written notice to the Township of its intent to discontinue use and the date when the use shall be discontinued. Unused or abandoned WCF or portions of WCF shall be removed as follows:

(a) All abandoned or unused WCF and accessory facilities shall be removed within three months of the cessation of operations at the site unless a time extension is approved by the Township.

(b) If the WCF and/or accessory facilities are not removed within three months of the cessation of operations, or within any longer period of time approved by the Township, the WCF and/or associated facilities and equipment may be removed by the Township and the cost of removal assessed against the owner of the WCF.

(8) Timing of Approval. Within 30 calendar days of the date that an application for a non-

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tower-based WCF is filed with the Township, the Township shall notify the applicant, in writing, of any information that may be required to complete such application. Within 60 calendar days of receipt of a complete application, the Township shall make its final decision on whether to approve the application and shall advise the applicant, in writing, of such decision. If additional information was requested by the Township to complete an application, the time required by the applicant to provide the information shall not be counted toward the Township's ~~sixty~~60-day review period. This standard shall only apply to facilities that are regulated by the Pennsylvania Wireless Broadband Collocation Act.

(9) Application Fees. The Township may assess appropriate and reasonable permit fees directly related to the Township's actual costs in reviewing and processing the application for approval of a non-tower-based WCF, as well as related inspection, monitoring and related costs. Such fees may be assessed by applicable federal or state statute for relevant co-located facilities and other non-tower-based WCF.

C. The following regulations shall apply to all non-tower-based wireless communications facilities located outside the right-of-way that substantially change the wireless support structure to which they are attached:

(1) Permitted in All Zones Subject to Regulations. Non-tower-based WCF are permitted in all zones subject to the restrictions and conditions prescribed below and subject to the prior written approval of the Township.

(2) Standard of Care. Any non-tower-based WCF shall be designed, constructed, operated, maintained, repaired, modified, and removed in strict compliance with all current applicable technical, safety, and safety-related codes, including but not limited to the most recent editions of the American National Standards Institute (ANSI) Code, National Electrical Safety Code, and National Electrical Code. Any non-tower-based WCF shall at all times be kept and maintained in good condition, order, and repair by qualified maintenance and construction personnel, so that the same shall not endanger the life of any person or any property in the Township.

(3) Wind. Any non-tower-based WCF structure shall be designed to withstand the effects of wind according to the standard designed by the American National Standards Institute as prepared by the engineering departments of the Electronics Industry Association, and Telecommunications Industry Association (ANSI EIA/TIA-222-G, as amended).

(4) Public Safety Communications. No non-tower-based WCF shall interfere with public safety communications or the reception of broadband, television, radio, or other communication services enjoyed by occupants of nearby properties.

(5) Historic Buildings. Non-tower WCF may not be located on a building or structure that is on an historic register or a building or structure listed for inclusion on a historic register.

(6) Aviation Safety. Non-tower-based WCF shall comply with all federal and state laws and regulations concerning aviation safety.

(7) Maintenance. The following maintenance requirements shall apply:

(a) The non-tower-based WCF shall be fully automated and unattended on a daily basis and shall be visited only for maintenance or emergency repair.

(b) Such maintenance shall be performed to ensure the upkeep of the facility in order to promote the safety and security of the Township's residents.

(c) All maintenance activities shall utilize nothing less than the best available technologies for preventing failures and accidents.

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(8) Radio Frequency Emissions. No non-tower-based WCF shall, by itself or in conjunction with other WCF, generate radio frequency emissions in excess of the standards and regulations of the FCC, including, but not limited to, the FCC Office of Engineering Technology Bulletin 65 entitled, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields," as amended.

(9) Removal. In the event that the use of a non-tower-based WCF is discontinued, the owner shall provide written notice to the Township of its intent to discontinue use and the date when the use shall be discontinued. Unused or abandoned WCF or portions of WCF shall be removed as follows:

(a) All abandoned or unused WCF and necessary facilities shall be removed within three months of the cessation of operations at the site unless a time extension is approved by the Township.

(b) If the WCF or accessory facility is not removed within three months of the cessation of operations, or within any longer period of time approved by the Township, the WCF and/or associated facilities and equipment may be removed by the Township and the cost of removal assessed against the owner of the WCF.

(c) Timing of Approval. Within 30 calendar days of the date that an application for a non-tower-based WCF is filed with the Township, the Township shall notify the applicant, in writing, of any information that may be required to complete such application. Within 60 calendar days of receipt of a complete application, the Township shall make its final decision on whether to approve the application and shall advise the applicant, in writing, of such decision. If additional information was requested by the Township to complete an application, the time required by the applicant to provide the information shall not be counted toward the Township's ~~sixty~~60-day review period. This standard shall only apply to facilities that are regulated by the Pennsylvania Wireless Broadband Collocation Act.

(d) Retention of Experts. The Township may hire any consultant(s) and/or expert(s) necessary to assist the Township in reviewing and evaluating the application for approval of the non-tower-based WCF and, once approved, in reviewing and evaluating any potential violations of the terms and conditions of this section. The applicant and/or owner of the WCF shall reimburse the Township for all costs of the Township's consultant(s) in providing expert evaluation and consultation in connection with these activities.

~~(e) Restoration Deposit. Prior to the issuance of a permit, the owner of each individual tower-based WCF shall, at its own cost and expense, deliver a restoration deposit in an amount determined by the Director of Public Works, or his designee. The return of the deposit shall be contingent upon, where applicable, the proper restoration of the ROW and compliance with the terms and conditions of this section. Upon installation of the tower-based WCF, the applicant shall notify the Township that the site is ready for inspection. The Public Works Director or his designee shall inspect the site and, if it is found to be satisfactory, the restoration deposit shall be refunded to the applicant within 30 days. The restoration deposit may be forfeited in whole or in part to the Township if any work is found to be incomplete or not in compliance with all applicable standards.~~

(f) Permit Fees. The Township may assess appropriate and reasonable permit fees directly related to the Township's actual costs in reviewing and processing the application for approval of a non-tower-based WCF, as well as related inspection, monitoring and related costs.

~~6~~5. Non-Tower-Based Wireless Communications Facilities Outside the Right~~s~~-of-Way. The following

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additional regulations shall apply to non-tower-based wireless communications facilities located outside the right~~s~~-of-way that substantially change the wireless support structure to which they are attached:

A. Development Regulations. Non-tower-based WCF shall be co-located on existing structures, such as existing building or tower-based WCF, subject to the following conditions:

(1) Such WCF does not exceed a maximum height of 10 feet above the permitted height of any structure in the applicable zoning district.

(2) If the WCF applicant proposes to locate the communications equipment in a separate building, the building shall comply with the minimum requirements for the applicable zoning district.

(3) A six-foot-high security fence with evergreen screening shall surround any separate communications equipment building. Vehicular access to the communications equipment building shall not interfere with the parking or vehicular circulations on the site for the principal use.

B. Design Regulations.

(1) Non-tower-based WCF shall employ stealth technology and be treated to match the supporting structure in order to minimize the aesthetic impact. The application of the stealth technology chosen by the WCF applicant shall be subject to the approval of the Township.

(2) Non-tower-based WCF ~~which~~ that are mounted to a building or similar structure may not exceed a height of 15 feet above the roof or parapet, whichever is higher, unless the WCF applicant obtains a conditional use approval.

(3) All non-tower-based WCF applicants must submit documentation to the Township justifying the total height of the non-tower structure. Such documentation shall be analyzed in context of such justification on an individual basis.

(4) Antennas, and their respective accompanying support structures, shall be no greater in diameter than any cross-sectional dimension that is reasonably necessary for their proper functioning.

(5) Noncommercial Usage Exemption. The design regulations enumerated in § **27-710**, Subsection 6A(2), shall not apply to direct broadcast satellite dishes installed for the purpose of receiving video and related communications services at residential dwellings.

C. Removal, Replacement, and Modification.

(1) The removal and replacement of non-tower-based WCF and/or accessory equipment for the purpose of upgrading or repairing the WCF is permitted, so long as such repair or upgrade does not increase the overall size of the WCF or the numbers of antennas.

(2) Any material modification to a WCF shall require prior amendment to the original permit or authorization.

D. Inspection. The Township reserves the right to inspect any WCF to ensure compliance with the provisions of this section and any other provisions found within the Township Code of Ordinances or state or federal law. The Township and/or its agents shall have the authority to enter the property upon which a WCF is located at any time, upon reasonable notice to the operator, to ensure such compliance.

~~7~~6. Non-Tower-Based or Small Wireless Communications Facilities ~~in the Rights-of-Way. The~~

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~~following additional regulations shall apply to all non-tower-based wireless communications facilities located in the rights-of-way:~~ as defined by the Small Wireless Facilities Deployment Act, Act 50 of 2021, (Act 50) shall be permitted by right in all zoning districts subject to the application requirements and design standards of Chapter 21, Part 6, and the standards, rights, and obligations set forth in Act 50.

~~A. Location. Non-tower-based WCF in the ROW shall be co-located on existing poles, such as utility poles. Co-location shall not be permitted on ornamental streetlight fixtures.~~

~~B. Design Requirements.~~

~~(1) WCF installations located above the surface grade in the public ROW including, but not limited to, those on streetlights and joint utility poles, shall consist of equipment components that are no more than six feet in height and that are compatible in scale and proportion to the structures upon which they are mounted. All equipment shall be the smallest and least visibly intrusive equipment feasible.~~

~~(2) Antennas and all support equipment shall be treated to match the supporting structure. WCF and accompanying equipment shall be painted, or otherwise coated, to be visually compatible with the support structure upon which they are mounted.~~

~~C. Compensation for ROW Use. In addition to the permit fees as described in § **27-710**, Subsection 5B(9), and otherwise herein, every non-tower-based WCF in the ROW is subject to the Township's right to fix annually a fair and reasonable compensation to be paid for use and occupancy of the ROW. Such compensation for ROW use shall directly related to the Township's actual ROW-management costs including, but not limited to, the costs of the administration and performance of all reviewing, inspecting, permitting, supervising, and other ROW management activities by the Township. The owner of each non-tower-based WCF shall pay an annual fee to the Township to compensate the Township for the Township's costs incurred in connection with the activities described above. The annual ROW management fee for non-tower-based WCF shall be determined by the Township and authorized by resolution of the Board of Supervisors and shall be based on the Township's actual ROW-management costs as applied to such non-tower-based WCF.~~

~~D. Time, Place, and Manner. The Township shall determine the time, place, and manner of construction, maintenance, repair, and/or removal of all non-tower-based WCF in the ROW based on public safety, traffic management, physical burden on the ROW, and related considerations. For public utilities, the time, place, and manner requirements shall be consistent with the police powers of the Township and the requirements of the Public Utility Code.~~

~~E. Equipment Location. Non-tower-based WCF and accessory equipment shall be located so as not to cause any physical or visual obstruction to pedestrian or vehicular traffic, or to otherwise create safety hazards to pedestrians and/or motorists or to otherwise inconvenience public use of the ROW as determined by the Township. In addition:~~

~~(1) In no case shall ground-mounted equipment, walls, or landscaping be located within 18 inches of the face of the curb. In the absence of a curb, facility must be located outside the safe clear zone of the roadway as determined by Public Works Director.~~

~~(2) Ground-mounted equipment shall be located underground. In the event an applicant can demonstrate, to the satisfaction of the Township Engineer, that ground-mounted equipment cannot be underground, then all such equipment shall be screened, to the fullest extent possible, through the use of landscaping or other decorative features to the satisfaction of the Township.~~

~~(3) Required electrical meter cabinets shall be screened to blend in with the surrounding area to the satisfaction of the Township.~~

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~~(4) Any graffiti on the tower or any accessory equipment shall be removed at the sole expense of the owner within 10 business days of notice of the existence of the graffiti.~~

~~(5) Any underground vaults related to tower-based WCF shall be reviewed and approved by the Township.~~

~~F. Relocation or Removal of Facilities. Within 60 days following written notice from the Township, or such longer period as the Township determines is seasonably necessary, or such other period in the case of an emergency, an owner of a WCF in the ROW shall, at its own expense, temporarily or permanently remove, relocate, change, or alter the position of any WCF when the Township, consistent with its police powers and applicable Public Utility Commission regulations, shall have determined that such removal, relocation, change, or alteration is reasonably necessary under the following circumstances:~~

~~(1) The construction, repair, maintenance, or installation of any Township or other public improvement in the right-of-way.~~

~~(2) The operations of the Township or other governmental entity in the right-of-way.~~

~~(3) Vacation of a street or road or the release of a utility easement.~~

~~(4) An emergency as determined by the Township.~~

~~G. Visual and/or Land Use Impact. The Township retains the right to deny an application for the construction or placement of a non-tower-based WCF based upon visual and/or land use impact.~~

~~8~~7. Violations Applicable to All Wireless Communications Facilities.

A. Penalties. Any person violating any provision of this section shall be subject, upon finding by a Magisterial District Judge, to a penalty not exceeding $500, for each and every offense, together with attorneys' fees and costs. A separate and distinct violation shall be deemed to be committed each day on which a violation occurs or continues to occur. In addition to an action to enforce any penalty imposed by this section and any other remedy at law or in equity, the Township may apply to a federal district court for an injunction or other appropriate relief at law or in equity to enforce compliance with or restrain violation of any provision of this section.

B. Determination of Violation. In the event a determination is made that a person has violated any provision of this section, such person shall be provided written notice of the determination and the reasons therefor. Except in the case of an emergency, the person shall have 30 days to cure the violation. If the nature of the violation is such that it cannot be fully cured within such time period, the Township may, in its reasonable judgment, extend the time period to cure, provided that person has commenced to cure and is diligently pursuing its efforts to cure. If the violation has not been cured within the time allowed, the Township may take any and all actions authorized by this section and/or federal and/or Pennsylvania law and regulations.

~~9~~8. Miscellaneous.

A. Police Powers. The Township, by granting any permit or taking any other action pursuant to this section, does not waive, reduce, lessen, or impair the lawful police powers vested in the Township under applicable federal, state, and local laws and regulations.

B. Severability. If any section, subsection, sentence, clause, phrase, or word of this section is for any reason held illegal or invalid by any court of competent jurisdiction, such provision shall be deemed a separate, distinct, and independent provision, and such holding shall not render the remainder of this section invalid.

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§ 27-1102 **Definitions.**
[Ord. No. 1049, 11/18/2019]

ACCESSORY EQUIPMENT—Any equipment serving or being used in conjunction with a wireless communications facility or wireless support structure. The term 'Accessory Equipment" includes but is not limited to utility or transmission equipment, power supplies, generators, batteries, cables, equipment buildings, cabinets and storage sheds, shelters, or similar structures.

APPLICABLE CODES—Any of the following codes: (1) uniform building, fire, electrical, plumbing or mechanical codes adopted by a recognized code organization or local amendments to those codes enacted solely to address imminent threats of destruction of property or injury to persons. (2) Ferguson Township zoning, land use, streets and sidewalks, rights-of-way and permitting ordinances.

~~**CO-LOCATION**—The placement or installation of new wireless telecommunications facilities on previously approved and constructed wireless support structures, including self-supporting or guyed monopoles and towers, electrical transmission towers, water towers, or any other structure not classified as a wireless support structure that can support the placement or installation of wireless telecommunications facilities if approved by the Township. The term includes the placement, replacement, or modification of accessory equipment within a previously approved communications facility building.~~ **COLLOCATION OR COLLOCATE**—To install, mount, maintain, modify or replace small wireless facilities on an existing utility pole or other wireless support structure.

CABLE FACILITY—Buildings, other structures and equipment used by the owner or operator of a cable television system to provide service. As used in this definition, the term "cable system" shall have the meaning given to it in section 602(6) of the Cable Communications Policy Act of 1984 (Public Law 98-549, 47 U.S.C. § 522(7)).

COMMUNICATIONS SERVICE PROVIDER—Any of the following:

(1) A cable operator as defined in section 602(4) of the Cable Communications Policy Act of 1984 (Public Law 98-549, 47 U.S.C. § 522(5)).

(2) A provider of information service as defined in section 3(20) of the Communications Act of 1934 (48 Stat. 1064, 47 U.S.C. § 153(24)).

(3) A telecommunications carrier as defined in section 3(44) of the Communications Act of 1934 (48 Stat. 1064, 47 U.S.C. § 153(51)).

(4) A wireless provider.

FCC—The Federal Communications Commission.

MICRO WIRELESS FACILITY—A small wireless facility that:

(1) Does not exceed two cubic feet in volume; and

(2) Has an exterior antenna no longer than 11 inches.

MODIFICATION OR MODIFY—The improvement, upgrade or replacement of a small wireless facility or an existing utility pole that does not substantially change, as defined in 47 CFR 1.6100(b)(7) (relating to wireless facility modifications), the physical dimension of the small wireless facility or utility pole.

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TO: Ferguson Township Board of Supervisors

FROM: Kristina Bassett, Community Planner

DATE: October 25, 2022

SUBJECT: Planning Commission's Discussion on the Amendment to Chapter 27, Section 710 and Section 1102 and establishing Chapter 21, Part 6.

The Planning Commission reviewed the draft Amendments to the Chapter 27 and Chapter 21 for the Small Wireless Communications Facilities Ordinance at their September 12, 2022, Regular Meeting.

Planning Commission questioned if the Township is planning on establishing design guidelines that applicants would need to follow for installation, are hand radios/transistor radios are included in the regulations, providing more service to the western part of the Township, and emissions.

Mr. Crassweller moved that the Planning Commission recommend approval to the Board of Supervisors to adopt the amendment to Chapter 27, Section 710, Wireless Communications Facilities, Section 1102, Definitions and establish Chapter 21, Streets and Sidewalks Part 6, Non-Tower-Based or Small Wireless Communication Facilities in the Right-of-Way. Mr. Keough seconded the motion. The motion passed unanimously.

CRPA Centre Regional Planning Agency
2643 Gateway Drive, Suite #4 • State College, PA 16801 • Phone (814) 231-3050 • www.crcog.net

September 9, 2022

Ms. Centrice Martin
Township Manager
Ferguson Township
3147 Research Drive
State College, PA 16801

RE: FERGUSON TOWNSHIP – PROPOSED UPDATES TO FERGUSON TOWNSHIP WIRELESS COMMUNICATIONS FACILITIES - CPRA COMMENTS

Dear Centrice:

The Joint Articles of Agreement of the Centre Regional Planning Commission (CRPC) require that the CRPC review any proposed action of a governing body of a participating municipality relating to:

1. *The location, opening, vacation, extension, narrowing or enlargement of any street, public ground, or watercourse;*
2. *The location, erection, demolition or sale of any public structures located within a municipality;*
3. *The adoption, amendment or repeal of any official map, subdivision and land development ordinance, zoning ordinance or planned residential ordinance.*

This process facilitates regional cooperation and coordination by allowing members of the CRPC to provide advisory comments to the governing body for its consideration. In some instances, such as this, the CRPA Director is authorized to provide comments on behalf of the CRPC. The CRPA has the following comment:

1. The updates to the Township's Ordinance are being completed to bring wireless facilities into conformance with the provisions of Act 50 and do not have a regional impact.

Please call or e-mail if you have questions, or if you require additional information.

Sincerely,

Jim May, AICP
Director

cc: Jenna Wargo, Director of Planning and Zoning, Ferguson Township
Centre Regional Planning Commission

CENTRE COUNTY
PENNSYLVANIA

PLANNING AND COMMUNITY DEVELOPMENT OFFICE

Willowbank Office Building
420 Holmes Street
Bellefonte, Pennsylvania 16823-1488
Telephone (814) 355-6791
FAX (814) 355-8661
www.centrecountypa.gov

September 30, 2022

Ferguson Township Planning & Zoning Department
Attn: Jenna Wargo, AICP, Director of Planning & Zoning
3147 Research Drive
State College, PA 16801

Re: **Ferguson Township Zoning Ordinance Amendment to Chapter 27, Zoning, Section 710, Wireless Communications Facilities, Section 1102, Definitions and establishment of Chapter 21, Streets and Sidewalks, Part 6, Non-Tower-Based or Small Wireless Communications Facilities in the Right-of-Way**
County Planning & Community Development Office Review

Dear Jenna:

The Centre County Planning and Community Development Office appreciates the opportunity to review the proposed ordinance amendments for Ferguson Township regarding Wireless Communication Facilities and Small Wireless Communication Facilities within Township Right-of-Way within the Zoning and Street and Sidewalk chapters. On September 7, 2022, this office received your email requesting our review of the Amendments with an advertised a Public Hearing for November 8, 2022. Pursuant to **§ 609 (e)** of the Pennsylvania Municipalities Planning Code:

> ***"the county planning agency shall receive a copy of the proposed municipal zoning amendment for recommendations, thirty days (30) prior to public hearing on an amendment by the local governing body, the municipality shall submit the amendment to the county planning agency for recommendations."***

Moreover, as your municipality considers amending the existing zoning ordinance, **§ 609** - **Enactment of Zoning Ordinance Amendments** should be followed as a guide towards properly amending the document. Current case law suggests that any deviation from properly amending a zoning ordinance may cause the ordinance to be referred to as "void ab initio" or, in other words, not effective.

Our staff reviewed the proposal and offers the following comments:

1. **REVIEW REQUESTED BY**:

   Jenna Wargo, AICP, Ferguson Township Director of Planning & Zoning

2. **LOCATION:**

   N/A

3. CURRENT/PROPOSED ZONING:

Ferguson Township currently regulates Wireless Communication Facilities under §27-710 that includes references to Tower Based Communication Facilities inside Rights-of-Way. However, Act 50, the Small Wireless Facilities Deployment Act, addresses standards, provisions, fees and procedures for Non-Tower-Based or Small Wireless Facilities within public right-of-way.

After review by the Township Solicitor, Betsy Dupuis, Esq., a recommendation was made to remove all reference to Small Wireless Facilities located in the Right-of-Way in the Ferguson Township Zoning Ordinance since it is not a Zoning issue. Per ***Act 50***, these types of Small Wireless Facilities must be permitted in all zoning districts and that has resulted in establishing a new part in ***Chapter 21***, ***Streets and Sidewalks***, because these facilities are located in rights-of-way.

4. BACKGROUND:

Act 50, the ***Small Wireless Facilities Deployment Ac***t, adopted June 30, 2021, applies to activities of a wireless provider within the right-of-way to deploy small wireless facilities and associated new utility poles with small wireless facilities attached. Moreover, it establishes procedures and standards consistent with all applicable federal and state laws, for the consideration, permitting, siting, construction, installation, collocation, modification, operation, regulation, and removal of Non-Tower Based or Small Wireless Facilities (SWF) in the public right-of-way of streets and roads.

5. ADJACENT USES:

N/A

6. COMMENTS AND RECOMMENDATIONS:

The Ferguson Township Board of Supervisors **<u>may</u>** accept the following recommendations related to the proposed zoning ordinance amendment:

A) Under Part 6, 4.B.1.(e), should read, "A general description ~~**fo**~~ <u>of</u> the proposed work and ~~**pruposed**~~ <u>proposed</u>…
B) Under Part 6, 5.A.(5.), states, "The applicant may cure the deficiencies identified by the Township and resubmit the application within 30-days of the denial…". Act 50 stipulates, "The applicant may cure the deficiencies identified by the municipality and resubmit the application within 30 days of <u>receiving the written basis for the denial</u> without being required to pay an additional application fee.
C) Under Part 6, 5.A.(6.), states, "Subject to the permit requirements and the applicant's right to terminate at any time, operate and maintain SWFs and any associated equipment on a utility pole covered by the permit for a period of five years…". Act 50 stipulates, "Subject to the permit requirements and the applicant's right to terminate at any time, operate and maintain small wireless facilities and any associated equipment on a utility pole covered by the permit <u>for a period of not less than five years</u>…".

As a reminder, the Pennsylvania Municipalities Planning Code, **§ 609 (g)** specifies that within thirty (30) days after enactment, a copy of the amendment to the zoning ordinance shall be forwarded to the county planning agency, if approved by the Ferguson Township Board of Supervisors.

Thank you for allowing our office to review this proposed zoning ordinance amendment in a timely manner. If you

require any additional information or have any questions regarding these comments, please contact our office at your earliest convenience.

Sincerely,

Raymond J. Stolinas Jr., AICP
Centre County Planning Director

RJS

cc: Centrice Martin, Ferguson Township Interim Manager (email)
John Franek, Jr., Centre County Administrator (email)
Elizabeth Lose, Asst. Planning Director, CCPCDO (email)
file

Accounts Payable

Checks by Date - Detail by Check Number

User: eendresen
Printed: 10/17/2022 11:22 AM

Check No	Vendor No / Invoice No	Vendor Name / Description	Check Date / Reference	Void Checks	Check Amount
20	11045	STEPHENSON EQUIPMENT INC	08/11/2022		
	15049519	COMPLETE ALUMINUM DUMP BODY W/A			301,180.85
			Total for Check Number 20:	0.00	301,180.85
37	10209	CENTRE REGION PARKS & RECREATI	08/11/2022		
	755	Regional Parks Capital			32,422.00
			Total for Check Number 37:	0.00	32,422.00
44	11676	WOOD ENVIRONMENT & INFRASTRU	08/11/2022		
	H14220251	FT SWU PHASE 2			506.00
			Total for Check Number 44:	0.00	506.00
457	10436	GLENN O HAWBAKER INC	08/11/2022		
	805390	9.5 MM I 64-S-22 0-.3			746.66
	805392	9.5 MM I 64-S-22 0-.3			280.23
			Total for Check Number 457:	0.00	1,026.89
458	10509	HRI INC	08/11/2022		
	2786979	STOCK PATCH			405.00
	2795885	9.5MM M .3<3 WMA			208.58
	2805422	9.5MM M .3<3 WMA			282.15
	2807529	9.5MM M .3<3 WMA			280.13
	2810111	9.5MM M .3,3 WMA			270.68
	282427	25MM M .3<3 WMA			352.00
			Total for Check Number 458:	0.00	1,798.54
948	11332	NTM ENGINEERING INC	08/11/2022		
	12577	FERG TWP COMPLIANCE REVIEW			530.25
			Total for Check Number 948:	0.00	530.25
949	11045	STEPHENSON EQUIPMENT INC	08/11/2022		
	15049522	DAS 1800 GAL ANTI ICING SYSTEM PER A1			34,790.00
			Total for Check Number 949:	0.00	34,790.00
12923	10026	ALL IN ONE BACKFLOW SERVICES	08/11/2022		
	1074	ANNUAL INSPECTION AND TESTING OF B			525.00
	1088	TOOL REPAIR KIT/LABOR TO REPAIR/TES1			737.53
			Total for Check Number 12923:	0.00	1,262.53
12924	11242	AMAZON CAPITAL SERVICES INC	08/11/2022		
	1HHY-WRV3-V3QD	HIGH SPEED GEAR PISTOL TACO WITH ON			385.98
	1KVQ-3T1X-C9YN	SMALL BINDER CLIPS			20.01
	1LJF-QRWK-DFKR	DONGLE TIP CONVERTER ADAPTER FOR I			19.97

Check No	Vendor No / Invoice No	Vendor Name / Description	Check Date / Reference	Void Checks	Check Amount
	1NV3-1LH9-W7MW	BOOSTEADY MOLLE CLIPS STRAPS FOR P			76.98
			Total for Check Number 12924:	0.00	502.94
12925	10047	AMSOIL INC	08/11/2022		
	20895404 RI	SYNTHETIC TORQUE DRIVE ATF			217.68
			Total for Check Number 12925:	0.00	217.68
12926	11239	ASAP HYDRAULICS STATE COLLEGE,	08/11/2022		
	95463	HYDRAULIC MOTOR			453.65
			Total for Check Number 12926:	0.00	453.65
12927	11376	B&I AUTO SUPPLY	08/11/2022		
	2079614	DEL 10-4023			24.08
	2082515	ACD			19.96
	2148335	DEL 9005LL			45.12
	2150807	DEL 10-4023			24.08
	2150807	ACD			4.99
			Total for Check Number 12927:	0.00	118.23
12928	11390	BAKER TILLY US, LLP	08/11/2022		
	BT2152924	ANNUAL COMPREHENSIVE FINANCIAL RI			3,540.08
			Total for Check Number 12928:	0.00	3,540.08
12929	11910	BARTON ASSOCIATES	08/11/2022		
	54234	ES-409			350.00
			Total for Check Number 12929:	0.00	350.00
12930	10085	BASTIAN TIRE & AUTO CENTERS	08/11/2022		
	154000	TIRES			485.28
			Total for Check Number 12930:	0.00	485.28
12931	10122	BOROUGH OF STATE COLLEGE	08/11/2022		
	071622	DUI CHECKPOINT 7/13, 7/14, 7/15, 7/16			403.56
	072122	DUI CHECKPOINT 7/20, 7/21, 7/22			200.16
	072622	DUI CHECKPOINT 7/26			194.79
	072922	DUI CHECKPOINT 7/9, 7/29			932.97
	11537	HEALTH SERV 2ND QTR			2,240.28
			Total for Check Number 12931:	0.00	3,971.76
12932	11990	BURGMEIER'S SHREDDING	08/11/2022		
	27X67595	SHREDDING			315.00
			Total for Check Number 12932:	0.00	315.00
12933	11224	CAMPBELL DURRANT BEATTY PALOI	08/11/2022		
	74774	LOSS CONTROL STANDARDS, PW & POLIC			741.00
			Total for Check Number 12933:	0.00	741.00
12934	11885	CDI	08/11/2022		
	54766	MONTHLY CLOUD HOSTING SERVICE			17.08
			Total for Check Number 12934:	0.00	17.08
12935	10184	CENTRE COMMUNICATIONS INC	08/11/2022		

Check No	Vendor No / Invoice No	Vendor Name / Description	Check Date / Reference	Void Checks	Check Amount
	134387	COAX MOUNT KIT/800 LOW PROFILE ANT			141.00
	134395	SERV KENWOOD NX5900K SN:B7C10077			191.00
	134441	COAX KIT/PROGRAMMED RADIO			10.00
			Total for Check Number 12935:	0.00	342.00
12936	10197	CENTRE COUNTY RECYCLING & REF	08/11/2022		
	073122	TIRES			50.43
			Total for Check Number 12936:	0.00	50.43
12937	10208	CENTRE REGION COUNCIL OF GOVEI	08/11/2022		
	753	COG Planning			23,466.50
	753	COG Building Capital			1,460.00
	753	COG EMS Contingency			641.00
	753	COG Fire Capital			22,053.75
	753	COG Administration Operating			39,394.50
	753	COG Fire Operating			79,732.25
	753	COG EMS Operating			9,569.00
	753	COG Regional Planning			7,833.00
	753	COG Fire Capital			2,732.25
			Total for Check Number 12937:	0.00	186,882.25
12938	10209	CENTRE REGION PARKS & RECREATI	08/11/2022		
	755	Regional Pools Debt			28,019.50
	755	MM Nature Center Capital			18,210.40
	755	Regional Pools Capital			10,042.50
	755	MM Nature Center Operating			10,271.60
	755	Parks Operating Programs			16,357.20
	755	Active Adult Center			14,046.40
	755	Parks Capital			18,499.60
	755	Parks Operating Maintenance			98,382.00
	755	Parks Administration			66,166.00
			Total for Check Number 12938:	0.00	279,995.20
12939	10231	CLEARFIELD WHOLESALE PAPER CO	08/11/2022		
	534147	WIPER/CLEANER/DEGREASER			132.47
	534582	TRASH LINER/TISSUE/TOWEL/C-FOLD			520.48
			Total for Check Number 12939:	0.00	652.95
12940	10142	CNET	08/11/2022		
	080822	2ND QTR 2022 COMCAST PEG FEES			2,183.06
			Total for Check Number 12940:	0.00	2,183.06
12941	11760	COMCAST	08/11/2022		
	080322	FAX LINES			148.08
			Total for Check Number 12941:	0.00	148.08
12942	12032	WILL DAUBENSPECK	08/11/2022		
	080522	MEAL ALLOWANCE DAUBENSPECK			587.22
			Total for Check Number 12942:	0.00	587.22
12943	10345	ECKS GARAGE INC	08/11/2022		
	1042306	BRAKE/SWITCH/TERMINAL/SEAL/LOCK/C			116.00

Check No	Vendor No / Invoice No	Vendor Name / Description	Check Date / Reference	Void Checks	Check Amount
			Total for Check Number 12943:	0.00	116.00
12944	10374	FEDERAL EXPRESS	08/11/2022		
	9-631-08100	STNDRD OVRNGHT			3.13
			Total for Check Number 12944:	0.00	3.13
12945	11944	FERGUSON TOWNSHIP ELEMENTARY	08/11/2022		
	080322	2022 SPONSORSHIP			500.00
			Total for Check Number 12945:	0.00	500.00
12946	10398	FIVE STAR INTERNATIONAL, LLC	08/11/2022		
	12P122381Q	FILTER			55.82
	12P122478	FILTER			145.56
			Total for Check Number 12946:	0.00	201.38
12947	11253	INFRADAPT LLC	08/11/2022		
	12746	LOCAL & LONG DIST SERV			655.87
			Total for Check Number 12947:	0.00	655.87
12948	10618	LAWSON PRODUCTS INC	08/11/2022		
	9309797822	STEEL FLAT WASHER/ZINC FINISH HEX NU			172.78
	9309802171	HX FLG NUT			18.05
			Total for Check Number 12948:	0.00	190.83
12949	11704	MADISON NATIONAL LIFE	08/11/2022		
	080122	LTD			673.92
	080122	STD			600.62
	080122	BASIC LIFE AD&D			400.02
	080122	VOL LIFE INS			552.92
			Total for Check Number 12949:	0.00	2,227.48
12950	10762	MARCO	08/11/2022		
	32123784	COPIER LEASE 3212I			154.57
	32146426	COPIER LEASE 3553CI			351.44
	32159174	COPIER LEASE 3550IDN			123.54
			Total for Check Number 12950:	0.00	629.55
12951	10669	MAXWELL TRUCK & EQUIPMENT LL	08/11/2022		
	S 13840	MOTION CONTROLS CYLINDER			661.40
			Total for Check Number 12951:	0.00	661.40
12952	10203	MCCLATCHY COMPANY LLC	08/11/2022		
	1045724	BOS VACANCY WARD II			82.76
	1045725	BOS VACANCY WARD II			82.76
	1045726	BOS VACANCY WARD II			82.76
	1045727	BOS VACANCY WARD II			82.76
	1045729	BOS VACANCY WARD II			82.76
	1045730	BOS VACANCY WARD II			82.76
	1045731	BOS VACANCY WARD II			82.76
	104728	BOS VACANCY WARD II			82.76
	286609	ZHB MTG JULY 26			366.40
	291108	BOS MTG JULY 19			99.10
	295105	SEALED BIDS FOR PROJ 2018-C20U			263.80

Check No	Vendor No / Invoice No	Vendor Name / Description	Check Date / Reference	Void Checks	Check Amount
	296228	SEALED BIDS FOR PROJ 2022-C19			129.71
	297372	BOS MTG AUG 2			141.39
	300303	AD FOR 2022-C3			161.20
			Total for Check Number 12952:	0.00	1,823.68
12953	10674	MCCORMICK TAYLOR INC	08/11/2022		
	1	ES-439			5,050.00
	1	ES-434			481.25
	10	ES-424			2,132.50
			Total for Check Number 12953:	0.00	7,663.75
12954	12038	MINORITY PROFESSIONAL NETWORK	08/11/2022		
	MPN-2022-000059	15-DAY JOB POSTING PACKAGE			375.00
			Total for Check Number 12954:	0.00	375.00
12955	11807	MODEL UNIFORMS	08/11/2022		
	1640961	PW UNIF CLN 7/21			94.86
	1643113	PW UNIF CLN 7/28			94.86
	1645296	PW UNIF CLN 08/24			89.39
			Total for Check Number 12955:	0.00	279.11
12956	10712	MONARCH CLEANERS	08/11/2022		
	072322	POLICE UNIF JUL 22			121.80
			Total for Check Number 12956:	0.00	121.80
12957	10748	NITTANY BUILDING SPECIALTIES INC	08/11/2022		
	S2230401	LCN CLOSER BOLT SHEERED OF ON WOM			200.00
			Total for Check Number 12957:	0.00	200.00
12958	10373	NITTANY SUPPLY INC.	08/11/2022		
	072922	BATTERIES/CAP/BATTERIES			746.64
	072922	GREASE GUN			40.49
			Total for Check Number 12958:	0.00	787.13
12959	11332	NTM ENGINEERING INC	08/11/2022		
	12577	ES-418			85.00
	12577	ES-434			255.00
	12577	ES-1117			405.50
	12577	ES-421			236.50
	12577	ES-427			255.00
	12577	ES-436			2,097.75
	12577	ES-435			340.00
	12577	ES-427			556.00
			Total for Check Number 12959:	0.00	4,230.75
12960	10773	OLD DOMINION BRUSH COMPANY IN	08/11/2022		
	8101885-1	FREIGHT			37.75
	8149617	IMPELLER/ROLLED LINER/BEARING/PWE			2,928.42
	8161108	ROD/BUSHING/SHAFT/AIR FILTER/GASKE			1,071.39
			Total for Check Number 12960:	0.00	4,037.56
12961	10798	PA ONE CALL SYSTEM	08/11/2022		
	960752	MONTHLY ACTIVITY FEE-BASE SUPP MES			105.36

Check No	Vendor No / Invoice No	Vendor Name / Description	Check Date / Reference	Void Checks	Check Amount
			Total for Check Number 12961:	0.00	105.36
12962	10819	PATTON TOWNSHIP SUPERVISORS	08/11/2022		
	071922	DUI CHECKPOINT DUI 7/15			295.30
			Total for Check Number 12962:	0.00	295.30
12963	10820	PBCI ALLEN MECHANICAL AND ELE(	08/11/2022		
	ES-1114	ES-1114			42.25
			Total for Check Number 12963:	0.00	42.25
12964	10845	PENNSYLVANIA MUNICIPAL HEALTH	08/11/2022		
	98687-0	EYECARE INS			618.48
	98687-0	DENTAL INS			3,450.33
	98687-0	HEALTHCARE INS			75,759.36
			Total for Check Number 12964:	0.00	79,828.17
12965	10916	R C BOWMAN INC	08/11/2022		
	10085	TRIAXLE LOAD SCREENED TOPSOIL/DELI			668.75
			Total for Check Number 12965:	0.00	668.75
12966	10918	R H MARCON INC	08/11/2022		
	1633125	PERFORMED 2022 SPRING ROOF INSPECTI			720.51
			Total for Check Number 12966:	0.00	720.51
12967	10955	ROTHROCKS LOCKSMITH	08/11/2022		
	4798	MASTER KEY CYCLINDER/ENTRY LEVERS			334.85
			Total for Check Number 12967:	0.00	334.85
12968	10978	SCHLOW CENTRE REGION LIBRARY	08/11/2022		
	754	Schlow Operating			122,107.25
	754	Schlow Capital			6,572.25
			Total for Check Number 12968:	0.00	128,679.50
12969	11017	SOSMETAL PRODUCTS INC	08/11/2022		
	1480443	FLOUR TIE/MIRROR GLASS/RETAINERS/FI			119.97
			Total for Check Number 12969:	0.00	119.97
12970	11026	SPRING TOWNSHIP SUPERVISORS	08/11/2022		
	072222	DUI CHECKPOINT 7/1, 7/3, 7/8, 7/22			1,003.40
			Total for Check Number 12970:	0.00	1,003.40
12971	11045	STEPHENSON EQUIPMENT INC	08/11/2022		
	10186053	FILTER			75.30
	10186123	COUPLING			167.47
			Total for Check Number 12971:	0.00	242.77
12972	11047	STEVE SHANNON TIRE COMPANY INC	08/11/2022		
	1001388795	TIRES			634.00
			Total for Check Number 12972:	0.00	634.00
12973	11763	SUNBELT RENTALS, INC.	08/11/2022		

Check No	Vendor No / Invoice No	Vendor Name / Description	Check Date / Reference		Void Checks	Check Amount
	128218675-0001	MANLIFT RENTAL				355.32
			Total for Check Number 12973:		0.00	355.32
12974	11844	TACTICAL WEAR	08/11/2022			
	22-00776	UNIFORMS FOR PD OFFICERS PER QUOTE				3,887.50
			Total for Check Number 12974:		0.00	3,887.50
12975	11665	TERMINAL SUPPLY COMPANY	08/11/2022			
	64712-0	STROBES				419.35
			Total for Check Number 12975:		0.00	419.35
12976	11137	ULINE	08/11/2022			
	151856097	RECYCLING CANS				14.82
			Total for Check Number 12976:		0.00	14.82
12977	11165	VIGILANT SECURITY	08/11/2022			
	34574	MONITORING 9/1-11/30				152.25
			Total for Check Number 12977:		0.00	152.25
12978	11726	WATSON DIESEL	08/11/2022			
	22590	ANNUAL PA INSPECTION				51.00
			Total for Check Number 12978:		0.00	51.00
12979	11192	WEST PENN POWER	08/11/2022	VOID		
	0873-JUL22	WHITEHALL RD/W COLLEGE			89.82	
	6651-JUL22	BIKE TUNNEL			259.70	
	8606-JUL22	BLUE COURSE DRIVE			92.97	
			Total for Check Number 12979:		442.49	0.00
12980	11192	WEST PENN POWER	08/15/2022			
	0873-JUL22	WHITEHALL RD/W COLLEGE				89.82
	8606-JUL22	BLUE COURSE DRIVE				92.97
			Total for Check Number 12980:		0.00	182.79
220802	11035	STATE COLLEGE BOROUGH WATER A	08/02/2022			
	A-1530-095-11	BRISTOL AVE WATER				123.37
	A-1541-000-0	Admin Building Water				432.00
	A-1541-001-0	PW Building 1 Water				39.00
	A-1541-002-0	BUILDING 3 WATER				2,302.00
	A-1541-052-0	BUILDING 6 WATER				658.50
			Total for Check Number 220802:		0.00	3,554.87
220802	11035	STATE COLLEGE BOROUGH WATER A	08/02/2022			
	A-1869-000-0	BABE RUTH FIELD WATER				148.00
			Total for Check Number 220802:		0.00	148.00
220802	11035	STATE COLLEGE BOROUGH WATER A	08/02/2022			
	C-1590-159-0	DOG PARK WATER				34.00
			Total for Check Number 220802:		0.00	34.00
220803	10026	ALL IN ONE BACKFLOW SERVICES	08/11/2022			
	1074	ANNUAL INSPECTION AND TESTING OF B				150.00

Check No	Vendor No Invoice No	Vendor Name Description	Check Date Reference	Void Checks	Check Amount
			Total for Check Number 220803:	0.00	150.00
220804	10103	BI LO SUPPLY	08/11/2022		
	IN025028	ADAPTER/INSERT			28.55
			Total for Check Number 220804:	0.00	28.55
220805	10507	HRG INC	08/11/2022		
	162124	RECREATIONM, PARK, OPEN SPACE PLAN			1,370.00
			Total for Check Number 220805:	0.00	1,370.00
2017126	10690	MID STATE PAVING LLC	08/11/2022		
	1	HAROLD DRIVE IMPROVEMENTS			76,983.93
			Total for Check Number 2017126:	0.00	76,983.93
			Report Total (72 checks):	442.49	1,179,782.58

Accounts Payable

Checks by Date - Detail by Check Number

User: eendresen
Printed: 10/17/2022 11:22 AM

Check No	Vendor No / Invoice No	Vendor Name / Description	Check Date / Reference	Void Checks	Check Amount
45	10539	IRVIN FARMS	09/02/2022		
	5481	20 STRAW BALES			80.00
			Total for Check Number 45:	0.00	80.00
46	10612	LANE ENTERPRISES INC	09/02/2022		
	550480	SPIRAL GALVANIZED			1,100.00
			Total for Check Number 46:	0.00	1,100.00
47	11476	SITE ONE LANDSCAPE SUPPLY	09/02/2022		
	122785375-001	LESCO METRO SEED MIXTURE 50LB			196.15
			Total for Check Number 47:	0.00	196.15
48	11332	NTM ENGINEERING INC	09/15/2022		
	12340	PARK HILLS DRAINAGEWAY RESTORATIO			20,905.00
			Total for Check Number 48:	0.00	20,905.00
49	11476	SITE ONE LANDSCAPE SUPPLY	09/15/2022		
	122885218-001	STRAW/SOD			383.25
			Total for Check Number 49:	0.00	383.25
50	11676	WOOD ENVIRONMENT & INFRASTRU	09/15/2022		
	H14220399	STORMWATER STUDY FEE			230.00
			Total for Check Number 50:	0.00	230.00
459	10509	HRI INC	09/02/2022		
	2826752	25MM .3<3 WMA			346.35
	2826995	9.5MM .3<3 WMA			559.58
	2832738	9.5MM .3<3 WMA			540.00
	2835310	19MM .3<3 WMA			1,283.64
	2839012	25MM .3<3 WMA			56.50
	2841137	25MM .3<3 WMA			212.63
	2844252	25MM .3<3 WMA			345.22
	2846058	9.5MM .3<3 WMA			826.88
			Total for Check Number 459:	0.00	4,170.80
460	10475	HANSON AGGREGATES PA INC	09/15/2022		
	4183588	2A SUBBASE			988.29
	4188080	PRODUCT 1			401.04
	4189941	R-4 RIP RAP			453.02
			Total for Check Number 460:	0.00	1,842.35
461	10509	HRI INC	09/15/2022		
	2870304	25MM M .3<3 WMA			568.96

Check No	Vendor No / Invoice No	Vendor Name / Description	Check Date / Reference	Void Checks	Check Amount
	2870567	9.5MM M .3<3 WMA			282.15
			Total for Check Number 461:	0.00	851.11
950	10122	BOROUGH OF STATE COLLEGE	09/02/2022		
	11615	INCLUDES CAR SUPPORT MS SURFACE			1,566.90
			Total for Check Number 950:	0.00	1,566.90
951	12033	MACKIN ENGINEERING COMPANY	09/02/2022		
	50519	UPDATE THE TERRACED STREETSCAPE Z(			1,079.61
			Total for Check Number 951:	0.00	1,079.61
952	11839	MARCO TECHNOLOGIES LLC	09/02/2022		
	INV10271884	COPY ROOM COPIERS			8,717.40
	INV10271885	TAX OFFICE AND RECEPTION COPIERS			3,174.58
			Total for Check Number 952:	0.00	11,891.98
953	11033	STATE COLLEGE BATTERY OUTLET	09/02/2022		
	101015	SEALED RECHARGABLE			208.00
	101016	SEALED RECHARGABLE			54.95
			Total for Check Number 953:	0.00	262.95
954	12047	WEIDENHAMMER	09/02/2022		
	215784	STRATIGIC TECHNOLOGY ASSESSMENT			5,500.00
			Total for Check Number 954:	0.00	5,500.00
955	11675	GREENFIELD ARCHITECTS LTD	09/15/2022		
	48	PW NEW BUILDING			3,630.03
	49	PW NEW BUILDING			3,058.50
			Total for Check Number 955:	0.00	6,688.53
956	10491	HINTON & ASSOCIATES	09/15/2022		
	3980	TICKET FOR FIREWALL			17,015.00
			Total for Check Number 956:	0.00	17,015.00
12981	10004	A & H EQUIPMENT COMPANY	09/02/2022		
	D15662	ACTUATOR			630.60
			Total for Check Number 12981:	0.00	630.60
12982	10016	AFLAC	09/02/2022		
	551974	INSURANCE WITHHELD			118.17
			Total for Check Number 12982:	0.00	118.17
12983	10031	ALLIED MECHANICAL & ELECTRICA	09/02/2022		
	166593	LOCATED DISCONNECT OFF APPLIED POV			167.50
	166594	RECIRC PUMP BAD AND REPLACED			1,624.67
			Total for Check Number 12983:	0.00	1,792.17
12984	10035	ALS TECHNOLOGIES INC	09/02/2022		
	082022	LESS LETHAL INSTUCTOR RECERTIFICAT(			695.00
			Total for Check Number 12984:	0.00	695.00

Check No	Vendor No / Invoice No	Vendor Name / Description	Check Date / Reference		Void Checks	Check Amount
12985	11242	AMAZON CAPITAL SERVICES INC	09/02/2022			
	11VK-HTHD-G716	BATTERY BACKUP				239.97
	1JXF-MP7Q-7X17	RED INK CARTRIDGE				16.95
	1NL7-PVFD-GHD7	STANDING DESK				194.95
	1Y6N-TT99-3RDQ	BATTERY				99.99
			Total for Check Number 12985:		0.00	551.86
12986	10047	AMSOIL INC	09/02/2022			
	20942111 RI	SYNTHETIC 5W40 SS DIESEL OIL				175.31
	20952009 RI	SYNTHETIC 5W40 SS DIESEL OIL				175.31
			Total for Check Number 12986:		0.00	350.62
12987	12044	AVANDEL CONSTRUCTION	09/02/2022			
	REST-1009	QUANDEL CONST/RC BOWMAN				4,900.00
			Total for Check Number 12987:		0.00	4,900.00
12988	12041	B&H WEST COLLEGE INVESTMENTS	09/02/2022			
	ES-418	ES-418				444.56
			Total for Check Number 12988:		0.00	444.56
12989	11376	B&I AUTO SUPPLY	09/02/2022			
	2364853	BATTERY/AIR FILTERS				268.28
			Total for Check Number 12989:		0.00	268.28
12990	11649	BABST CALLAND CLEMENTS AND ZC	09/02/2022			
	521799	RAHAL OF STATE COLLEGE				215.00
			Total for Check Number 12990:		0.00	215.00
12991	10085	BASTIAN TIRE & AUTO CENTERS	09/02/2022			
	154031	TIRES				157.66
			Total for Check Number 12991:		0.00	157.66
12992	10100	BEST LINE EQUIPMENT	09/02/2022			
	P95513	AIR FILTER				9.00
			Total for Check Number 12992:		0.00	9.00
12993	10120	BORING COURT REPORTING	09/02/2022			
	082322	HEARING OF KIEFER				150.00
			Total for Check Number 12993:		0.00	150.00
12994	10122	BOROUGH OF STATE COLLEGE	09/02/2022			
	11615	RMS SUPPORT				7,496.25
			Total for Check Number 12994:		0.00	7,496.25
12995	12039	LONG RIDGE CONSTRUCTION	09/02/2022	VOID		
	CURB-0429	LONGRIDGE CONST/171 APPLE VIEW DRI			2,250.00	
	CURB-0430	LONGRIDGE CONST/179 APPLE VIEW DRI			3,000.00	
			Total for Check Number 12995:		5,250.00	0.00
12996	11930	BUDS ELECTRIC	09/02/2022			
	22933	BATTERY				191.62
	22961	SOLENOID				79.13

Check No	Vendor No / Invoice No	Vendor Name / Description	Check Date / Reference	Void Checks	Check Amount
	23106	BATTERY			166.62
			Total for Check Number 12996:	0.00	437.37
12997	11961	CABLE SERVICES COMPANY INC	09/02/2022		
	080322	CABLE SERV/SANDY DRIVE & SCIENCE P/			1,080.00
			Total for Check Number 12997:	0.00	1,080.00
12998	11885	CDI	09/02/2022		
	55239	MONTHLY CLOUD HOSTING SERVICE			300.00
			Total for Check Number 12998:	0.00	300.00
12999	11221	CENTRE AREA TRANSPORTATION AU	09/02/2022		
	ES-308	ES-308			3,227.04
			Total for Check Number 12999:	0.00	3,227.04
13000	10184	CENTRE COMMUNICATIONS INC	09/02/2022		
	134616	BATTERIES 2 EA			245.28
	134622	REMOVE OLD AND INSTALL NEW V-SPEC			126.00
			Total for Check Number 13000:	0.00	371.28
13001	10231	CLEARFIELD WHOLESALE PAPER CO	09/02/2022		
	535021	TOWEL ROLL			32.55
			Total for Check Number 13001:	0.00	32.55
13002	11861	COL DU TOURMALET	09/02/2022		
	ES-390	ES-390			3,624.58
			Total for Check Number 13002:	0.00	3,624.58
13003	10243	COLUMBIA GAS OF PA INC	09/02/2022		
	20006-SEP22	GAS			62.52
			Total for Check Number 13003:	0.00	62.52
13004	10244	COMCAST	09/02/2022		
	152274540	ETHERNET DEDICATED INTERNET			1,151.01
			Total for Check Number 13004:	0.00	1,151.01
13005	10297	DAVIDHEISERS INC	09/02/2022		
	26123	STOP WATCH/VASCAR TESTED/ESP TESTE			445.00
			Total for Check Number 13005:	0.00	445.00
13006	10321	DLT SOLUTIONS LLC	09/02/2022		
	1721860	ARCH ENG & CONSTRUCTION COLLECTI(			4,503.65
			Total for Check Number 13006:	0.00	4,503.65
13007	10324	DONS POWER EQUIPMENT	09/02/2022		
	060222	2 HEADS/LOCK OUT ASSY			69.97
			Total for Check Number 13007:	0.00	69.97
13008	10380	FERGUSON TOWNSHIP SUPERVISORS	09/02/2022		
	083122	TIF TRANSFERS JUL 22			151,463.70

Check No	Vendor No / Invoice No	Vendor Name / Description	Check Date / Reference	Void Checks	Check Amount
			Total for Check Number 13008:	0.00	151,463.70
13009	10396	FISHER AUTO PARTS	09/02/2022		
	080122	FEDERATED SYMAR RUBBER/VERSA CHE			271.96
	080122	SCRUBBING WIPES			29.98
			Total for Check Number 13009:	0.00	301.94
13010	10398	FIVE STAR INTERNATIONAL, LLC	09/02/2022		
	12P122584	FILTERS			40.60
	12P122589	AIR LIFT/FILTER/F W SEPR/FILTER KIT/DR			1,068.80
			Total for Check Number 13010:	0.00	1,109.40
13011	10418	GALETON	09/02/2022		
	2649912&2650052	GLOVES/VESTS			392.95
			Total for Check Number 13011:	0.00	392.95
13012	11635	GREAT AMERICA FINANCIAL SERVICI	09/02/2022		
	32232948	COPIER LEASE 5052CI			217.64
			Total for Check Number 13012:	0.00	217.64
13013	12040	GULFSTREAM EQUITY PARTNERS	09/02/2022		
	ES-384	ES-384			3,500.00
			Total for Check Number 13013:	0.00	3,500.00
13014	11286	HUNTER KEYSTONE PETERBILT, LP	09/02/2022		
	X204104375:01	GAUGE KIT FUEL LEVEL			185.70
			Total for Check Number 13014:	0.00	185.70
13015	10561	JOHN DEERE FINANCIAL	09/02/2022		
	2384279	RELAY			52.33
			Total for Check Number 13015:	0.00	52.33
13016	10568	K & S DISTRIBUTION	09/02/2022		
	130681	LUBRICANT			228.00
	130681	AUTO TRANS/HIGH PERM BRAKE FLUID			557.40
			Total for Check Number 13016:	0.00	785.40
13017	10590	KISTLER OBRIEN	09/02/2022		
	197160	SMOKE DETECTORS			353.00
	197161	SEMI ANNUAL SUPPRESSION SYSTEM INS			507.00
			Total for Check Number 13017:	0.00	860.00
13018	11704	MADISON NATIONAL LIFE	09/02/2022		
	090122	LTD			1,057.08
	090122	BASIS LIFE AD&D			846.05
	090122	VOL LIFE INS			666.93
	090122	STD			951.83
			Total for Check Number 13018:	0.00	3,521.89
13019	10762	MARCO	09/02/2022		
	32232949	COPIER LEASE 3252CI			534.25

Check No	Vendor No / Invoice No	Vendor Name / Description	Check Date / Reference		Void Checks	Check Amount
			Total for Check Number 13019:		0.00	534.25
13020	10203	MCCLATCHY COMPANY LLC	09/02/2022			
	1089801	ANNUAL AUDIT AD AND FINANCIAL REP(				641.87
	296209	ZHB MTG AUG 23				199.00
	304017	BOS MTG AUG 16				226.07
	308019	BOS MTG & SC BORO VIRTUAL JOINT SES				77.50
			Total for Check Number 13020:		0.00	1,144.44
13021	10674	MCCORMICK TAYLOR INC	09/02/2022			
	ES-424	ES-424				2,132.50
	ES-428	ES-428				262.50
	ES-434	ES-434				87.50
	ES-439	ES-439				747.50
			Total for Check Number 13021:		0.00	3,230.00
13022	11812	MEDEXPRESS	09/02/2022	VOID		
	2301753C3908	PW TESTING			92.00	
	2301753C3908	ENG TESTING			92.00	
			Total for Check Number 13022:		184.00	0.00
13023	11807	MODEL UNIFORMS	09/02/2022			
	1641831	PW UNIF CLEAN 8/25				89.39
	1647479	PW UNIF CLEAN 8/11				89.39
	1649684	PW UNIF CLEAN 8/16				89.39
			Total for Check Number 13023:		0.00	268.17
13024	12043	PEACHEYS GREEN HOUSE	09/02/2022			
	46	FLOWERS FOR POT OUT FRONT				33.81
			Total for Check Number 13024:		0.00	33.81
13025	10923	RBA PROFESSIONAL DATA SYSTEMS	09/02/2022			
	220413	PROCESS & LOAD 2022 MUNIC SUPP/2021				524.48
			Total for Check Number 13025:		0.00	524.48
13026	10927	REDLINE SPEED SHINE	09/02/2022			
	3489	FLEET MEMBERSHIP				280.22
			Total for Check Number 13026:		0.00	280.22
13027	10973	SAMS CLUB / SYNCHRONY BANK	09/02/2022			
	082722	FEES ON PURCHASE				38.31
			Total for Check Number 13027:		0.00	38.31
13028	10992	SHERWIN WILLIAMS	09/02/2022			
	080822	TRAFFIC LIGHTS				8.99
			Total for Check Number 13028:		0.00	8.99
13029	11017	SOSMETAL PRODUCTS INC	09/02/2022			
	1482737	HITCH COTTER/BUNA/O-RING/MARKING (				302.92
			Total for Check Number 13029:		0.00	302.92
13030	11834	STATE COLLEGE AREA SCHOOL DIST	09/02/2022			

Check No	Vendor No / Invoice No	Vendor Name / Description	Check Date / Reference	Void Checks	Check Amount
	23-416	SOLAR POWER PURCHASING AGREEMEN			367.58
			Total for Check Number 13030:	0.00	367.58
13031	11045	STEPHENSON EQUIPMENT INC	09/02/2022		
	1226806	MAIN ELEMENT			140.35
	1266677	FILTERS/AIR PURIFIER			78.30
			Total for Check Number 13031:	0.00	218.65
13032	11047	STEVE SHANNON TIRE COMPANY INC	09/02/2022		
	1001389766	TIRES			1,268.00
			Total for Check Number 13032:	0.00	1,268.00
13033	11844	TACTICAL WEAR	09/02/2022		
	22-00841	CLOTHING			205.35
			Total for Check Number 13033:	0.00	205.35
13034	12036	TEAMSTERS LOCAL 764	09/02/2022		
	080822	UNION DUES PW			653.00
			Total for Check Number 13034:	0.00	653.00
13035	10481	THE HARTMAN GROUP	09/02/2022		
	4498	22-23 TREASURER BOND			1,369.00
			Total for Check Number 13035:	0.00	1,369.00
13036	11159	VERIZON WIRELESS	09/02/2022		
	9912446957	P & Z & OEO CELL USE			99.73
	9912446957	CELL PHONE WITHHOLDING			-10.00
	9912446957	HOT BOX USE			40.01
	9912446957	POLICE CELL USE			67.37
	9912446957	AIRTIME CARD			40.03
	9912446957	POLICE CELL PHONE WITHHOLDING			10.00
			Total for Check Number 13036:	0.00	247.14
13037	11692	BRIAN D. WAKEFIELD	09/02/2022		
	081222	UBER FROM AIRPORT TO HOTEL WAKEFI			40.00
			Total for Check Number 13037:	0.00	40.00
13038	11179	RANDALL WATKINS	09/02/2022		
	ES-412	WATKINS SUBDIVISION/BLOOMSDORF DR			883.07
			Total for Check Number 13038:	0.00	883.07
13039	11192	WEST PENN POWER	09/02/2022		
	0840-SEP22	WHITEHALL RD/RESEARCH DRIVE	01.433.036		32.92
	2239-AUG22	PINE GRV-BLINKER-WEST	01.433.036		7.98
	2239-SEP22	S WATER ST	01.433.036		21.67
	2449-AUG22	WESTERLY PKWY BLUE CR	01.433.036		77.65
	3377-AUG22	BRISTOL AVE	01.433.036		78.11
	5290-AUG22	1901 CIRCLEVILLE ROAD	01.433.036		40.74
	5727-SEP22	OFFICE COMPLEX	01.409.036		183.12
	6113-AUG22	GARAGE/MAINT BLDG	01.409.036		339.90
	6438-AUG22	1209 N ATHERTON ST	01.433.036		32.76
	6725-AUG22	BLDG #3	01.409.036		308.90
	7852-AUG22	PINE GRV-BLINKER-EAST	01.433.036		7.98

Check No	Vendor No / Invoice No	Vendor Name / Description	Check Date / Reference	Void Checks	Check Amount
	7920-AUG22	N ATHERTON ST	01.433.036		28.05
	8100-AUG22	2100 W COLLEGE AVE	01.433.036		10.77
	8136-AUG22	BLUE COURSE DR & HAVENSHIRE DR	01.433.036		0.58
			Total for Check Number 13039:	0.00	1,171.13
13040	10771	WITMER PUBLIC SAFETY GROUP INC	09/02/2022		
	INV83602	FEDERAL CARTRIDGE 9MM LUGER 1000 R			195.00
	INV9606	HAT COVERS 2 EA			30.84
			Total for Check Number 13040:	0.00	225.84
13041	12042	ZITO MEDIA	09/02/2022		
	REST-1002	ZITO MEDIA SANDY DR/SCI PK			2,170.00
			Total for Check Number 13041:	0.00	2,170.00
13042	10112	BLAISE ALEXANDER CHRYSLER DOD	09/15/2022		
	070122	UNDERCOVER VEHICLE			350.00
	080122	UNDERCOVER VEHICLE			350.00
	090922	UNDERCOVER VEHICLE			350.00
			Total for Check Number 13042:	0.00	1,050.00
13043	10035	ALS TECHNOLOGIES INC	09/15/2022		
	091322	LESS LETHAL SUPPLIES			257.45
			Total for Check Number 13043:	0.00	257.45
13044	11242	AMAZON CAPITAL SERVICES INC	09/15/2022		
	1Y1K-6D37-33C6	TONER CARTRIDGE			40.00
			Total for Check Number 13044:	0.00	40.00
13045	10047	AMSOIL INC	09/15/2022		
	20958774 RI	SYNTHETIC 75W140			218.71
			Total for Check Number 13045:	0.00	218.71
13046	11376	B&I AUTO SUPPLY	09/15/2022		
	2370047	CREDIT JUNK BATTERY			-11.00
	2382065	ANTIFREEZE			43.80
	2383379	FILTER			19.05
	2387388	EXHAUST FLUID			48.16
	2387388	FILTERS			57.14
	2389392	FILTER			35.38
	2390769	AIR FILTER			16.34
			Total for Check Number 13046:	0.00	208.87
13047	12049	BLACK BEAR FIBER	09/15/2022		
	204	FIBER			43.55
	205	FIBER			1,350.00
			Total for Check Number 13047:	0.00	1,393.55
13048	10122	BOROUGH OF STATE COLLEGE	09/15/2022		
	081922	DUI CHECKPOINT 8/19			315.20
	0829	DUI CHECKPOINT 8/29			151.29
	0831	DUI CHECKPOINT 8/19, 8/31			378.24
	083122	DUI CHECKPOINT 8/31			378.24
	11675	CRUISER AIRTIME FOR 2022			6,650.00

Check No	Vendor No / Invoice No	Vendor Name / Description	Check Date / Reference		Void Checks	Check Amount
			Total for Check Number 13048:		0.00	7,872.97
13049	10124	KASANDRA BOTTI D O	09/15/2022			
	090422	ANNUAL AED MEDICAL DIRECTION				600.00
			Total for Check Number 13049:		0.00	600.00
13050	10126	BRADCO SUPPLY COMPANY	09/15/2022			
	219417	FILTER				145.42
			Total for Check Number 13050:		0.00	145.42
13051	11224	CAMPBELL DURRANT BEATTY PALOI	09/15/2022			
	75019	PARENTAL LEAVE POLICY/TERM PERSON.				2,577.28
			Total for Check Number 13051:		0.00	2,577.28
13052	11755	CENTRE COUNTY GOVERNMENT	09/15/2022			
	091222	CONTINUATION OF CENTRE COUNTY CIT				3,094.00
			Total for Check Number 13052:		0.00	3,094.00
13053	10201	CENTRE COUNTY UNITED WAY	09/15/2022	VOID		
	072222	U-WAY			26.00	
	080522	U-WAY			26.00	
	081922	U-WAY			104.00	
	090222	U-WAY			26.00	
			Total for Check Number 13053:		182.00	0.00
13054	10231	CLEARFIELD WHOLESALE PAPER CO	09/15/2022			
	535983	HAND SOAP				139.73
	536470	RAGS				78.62
			Total for Check Number 13054:		0.00	218.35
13055	10284	CUSTOM ALTERATIONS	09/15/2022			
	892073	PANT HEM				8.80
			Total for Check Number 13055:		0.00	8.80
13056	10297	DAVIDHEISERS INC	09/15/2022			
	26010	INSTALL NEW POWER SWITCH FOR VASC.				146.20
			Total for Check Number 13056:		0.00	146.20
13057	10374	FEDERAL EXPRESS	09/15/2022			
	7-864-94647	STNDRD OVRNGHT US ATTORNY OFFICE				67.13
			Total for Check Number 13057:		0.00	67.13
13058	11217	FERGUSON TOWNSHIP POLICE ASSOC	09/15/2022			
	072222	POLICE UNION DUES				380.00
	080522	POLICE UNION DUES				380.00
	081922	POLICE UNION DUES				380.00
	090222	POLICE UNION DUES				380.00
			Total for Check Number 13058:		0.00	1,520.00
13059	10398	FIVE STAR INTERNATIONAL, LLC	09/15/2022			
	12P122689	PLUG MAGNETIC				4.97
	12P122847	FILTER KIT				350.45

Check No	Vendor No / Invoice No	Vendor Name / Description	Check Date / Reference	Void Checks	Check Amount
			Total for Check Number 13059:	0.00	355.42
13060	10409	FRED CARSON DISPOSAL INC.	09/15/2022		
	115451	COMMERCIAL RECYCLING/CARDBOARD			251.92
			Total for Check Number 13060:	0.00	251.92
13061	11264	GROFF TRACTOR & EQUIPMENT	09/15/2022		
	PSO433447-1	RELAY			19.96
			Total for Check Number 13061:	0.00	19.96
13062	11253	INFRADAPT LLC	09/15/2022		
	7907SEP2022	LOCAL & LONG DIST SERV			655.84
			Total for Check Number 13062:	0.00	655.84
13063	10561	JOHN DEERE FINANCIAL	09/15/2022		
	2384279	RELAY/COVER			113.07
			Total for Check Number 13063:	0.00	113.07
13064	12039	LONG RIDGE CONSTRUCTION	09/15/2022		
	CURB-0429	LONGRIDGE CONST/171 APPLE VIEW DRI			2,250.00
	CURB-0430	LONGRIDGE CONST/179 APPLE VIEW DRI			3,000.00
			Total for Check Number 13064:	0.00	5,250.00
13065	10762	MARCO	09/15/2022		
	32342818	CHARGES			21.20
	32344082	COPIER LEASE 3553CI			437.46
			Total for Check Number 13065:	0.00	458.66
13066	11839	MARCO TECHNOLOGIES LLC	09/15/2022		
	INV10307654	OPTIONAL PAPER FEED CASSETTE			192.85
			Total for Check Number 13066:	0.00	192.85
13067	10674	MCCORMICK TAYLOR INC	09/15/2022		
	11	ES-424			1,535.00
			Total for Check Number 13067:	0.00	1,535.00
13068	11812	MEDEXPRESS	09/15/2022		
	2301753C3908	PW TESTING			92.00
	2301753C3908	ENG TESTING			92.00
			Total for Check Number 13068:	0.00	184.00
13069	10798	PA ONE CALL SYSTEM	09/15/2022		
	964451	SUPP VOICE MESSAGES/MONTHLY ACTIV			117.87
			Total for Check Number 13069:	0.00	117.87
13070	10819	PATTON TOWNSHIP SUPERVISORS	09/15/2022		
	082122	DUI CHECKPOINT 8/18, 8/21			454.49
	082622	DUI CHECKPOINT 8/19,8/20, 8/26			855.34
			Total for Check Number 13070:	0.00	1,309.83
13071	10845	PENNSYLVANIA MUNICIPAL HEALTH	09/15/2022		

Check No	Vendor No / Invoice No	Vendor Name / Description	Check Date / Reference	Void Checks	Check Amount
	101524-0	HEALTHCARE INS			81,275.01
	101524-0	EYECARE INS			607.90
	101524-0	DENTAL INS			3,399.91
	98687-0	DENTAL INS			3,450.33
	98687-0	EYECARE INS			618.48
	98687-0	HEALTHCARE INS			75,759.36
			Total for Check Number 13071:	0.00	165,110.99
13072	10932	RESERVE ACCOUNT	09/15/2022		
	091522	POSTAGE BY PHONE			210.15
			Total for Check Number 13072:	0.00	210.15
13073	11532	SAFECHECKS	09/15/2022		
	0542389	LASER CHECKS 4000			927.84
			Total for Check Number 13073:	0.00	927.84
13074	11026	SPRING TOWNSHIP SUPERVISORS	09/15/2022		
	0819	DUI CHECKPOINT 8/19			228.60
			Total for Check Number 13074:	0.00	228.60
13075	11045	STEPHENSON EQUIPMENT INC	09/15/2022		
	10186655	MAIN ELEMENT			140.35
	10187508	WASHER JET			60.92
			Total for Check Number 13075:	0.00	201.27
13076	11763	SUNBELT RENTALS, INC.	09/15/2022		
	129140798-0001	EQUIPMENT RENTAL			2,108.65
			Total for Check Number 13076:	0.00	2,108.65
13077	11073	SWARTZ FIRE & SAFETY EQUIPMENT	09/15/2022		
	30506	REPLACEMENT RED COVER MARK II SER			36.00
			Total for Check Number 13077:	0.00	36.00
13078	11132	TW CONSULTING INC	09/15/2022		
	090622	BACKGROUND INVESTIGATION FOR STOI			26.00
			Total for Check Number 13078:	0.00	26.00
13079	11159	VERIZON WIRELESS	09/15/2022		
	9914782247	PZ & OEO CELL USE			99.58
	9914782247	POLICE CELL PHONE WITHHOLDING			10.00
	9914782247	HOT BOX USE			40.01
	9914782247	AIRTIME CARD			40.01
	9914782247	CELL PHONE WITHHOLDING			-10.00
	9914782247	POLICE CELL USE			67.21
			Total for Check Number 13079:	0.00	246.81
13080	11192	WEST PENN POWER	09/15/2022		
	5290-AUG22	1901 CIRCLEVILLE RD			0.74
	5727-AUG22	OFFICE COMPLEX			3,196.26
	8100-AUG22	2100 W COLLEGE AVE			136.38
			Total for Check Number 13080:	0.00	3,333.38

Check No	Vendor No / Invoice No	Vendor Name / Description	Check Date / Reference	Void Checks	Check Amount
13081	10771	WITMER PUBLIC SAFETY GROUP INC	09/15/2022		
	INV57391	GLOCK MAG/MAGPULL PMAG 30RD W.WI			563.00
	INV95153	BELTS/TOOL POCKET CUFF KEY/BELTKEE			182.04
			Total for Check Number 13081:	0.00	745.04
220901	11035	STATE COLLEGE BOROUGH WATER A	09/01/2022		
	A-1530-095-11	BRISTOL AVE WATER			32.29
	A-1541-002-0	BUILDING 3 WATER			112.00
			Total for Check Number 220901:	0.00	144.29
220901	11035	STATE COLLEGE BOROUGH WATER A	09/01/2022		
	A-1869-000-0	BABE RUTH FIELD WATER			94.00
			Total for Check Number 220901:	0.00	94.00
220901	11035	STATE COLLEGE BOROUGH WATER A	09/01/2022		
	C-1590-159-0	DOG PARK WATER			46.00
			Total for Check Number 220901:	0.00	46.00
220902	10507	HRG INC	09/15/2022		
	162663	RECREATION, PARK, OPEN SPACE PLAN U			4,836.07
			Total for Check Number 220902:	0.00	4,836.07
2017127	10918	R H MARCON INC	09/02/2022		
	1638126	INSTALL PIPE BOOT ON 2" PVC CONDUIT			700.00
			Total for Check Number 2017127:	0.00	700.00
2017128	10436	GLENN O HAWBAKER INC	09/15/2022		
	87758	FERGUSON TOWNSHIP - IN TOWN 2022-C1			136,414.40
			Total for Check Number 2017128:	0.00	136,414.40
20200952	10207	CENTRE REGION CODE ADMINISTRA	09/15/2022		
	160650	425 PARK CREST LANE			44.00
			Total for Check Number 20200952:	0.00	44.00
			Report Total (124 checks):	5,616.00	629,739.71

Application and Certificate for Payment

TO (OWNER):	Ferguson Township 3147 Research Drive State College, PA 16801	**PROJECT**	Automated Traffic Signal Perform	**APPLICATION NO:**	5	Distribution To: X Owner Architect Contractor
				PERIOD TO:	29-Sep-22	
FROM (CONT):	Wyoming Electric & Signal, Inc. 214 Wyoming Avenue Wyoming, PA 18644	**VIA ENGINEER:**	Robert A. Seyber, Jr. PE 3147 Research Drive State College, PA 16801	**CONTRACT#**	2016-C11 ATSPM	
CONTRACT FOR:	Automated Traffic Signal Perform			**CONTRACT DATE:** Invoice Number:	September-21 8866	

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for Payment, as shown below, in connection with the contract.

Continuation Sheet is attached.

CHANGE ORDER SUMMARY

		ADDITIONS	DEDUCTIONS
Change orders approved in previous months by Owner	CO 2	14,223.00	$12,200.00
	CO 3	5,964.00	$7,400.00
Change orders approved in current month by Owner	CO 1		$36,600.00
	CO 4	132,480.00	
		ADDITIONS	DEDUCTIONS
Net Change by Change Orders		$152,667.00	56,200.00

1	**ORIGINAL CONTRACT SUM**	$619,276.00
2	**Net Change by Change Orders**	$96,467.00
3	**CONTRACT SUM TO DATE**	$715,743.00
4	**TOTAL COMPLETE & STORED TO DATE** (Column G)	$619,441.00
5	**RETAINAGE:**	
	a. 10% of Completed Work (Column D&E)	$42,205.95
	b. 5% of Completed Work (Column K)	$9,869.07
	Total Retainage (Line 5a+5b) or Column I	$52,075.02
6	**TOTAL EARNED LESS RETAINAGE** (Line 4 less Line 5 Total)	$567,365.98
7	**LESS PREVIOUS CERTIFICATES FOR PAYMENT (Line 6 Prior Certificate)**	$521,242.05
8	**CURRENT PAYMENT DUE**	**$46,123.93**
9	**BALANCE TO FINISH, PLUS RETAINAGE** (Line 3 less Line 6)	$148,377.02

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information, and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR: Wyoming Electric & Signal, Inc.

By: Dodie L. Bresnahan *Date:* 10/4/2022

Dodie L. Bresnahan, President

State of: Pennsylvania *County of:* Luzerne

Subscribed and Sworn to before me this 04 *day of* Oct 22

Notary Public: Anita M Bouteiller

My Commission expires:

Commonwealth of Pennsylvania - Notary Seal
ANITA M BOUTEILLER - Notary Public
Luzerne County
My Commission Expires Jan 2, 2024
Commission Number 1014983

ARCHITECTS CERTIFICATE FOR PAYMENT

In accordance with Contract Documents, based on on-site observations and the data comprising the above application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information, and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED $46,123.93

(Attach explanation if amount certified differs from the amount applied for.)

ARCHITECT: Digitally signed by Ron Seybert
By: Date: 2022.10.14 10:07:32-04'00' *Date:* 10-14-22

This certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and without prejudice to any rights of the Owner or Contractor under this contract.

Acct: 32-439-610

Wyoming Electric and Signal, Inc.

Owner/Contractor:
Ferguson Township
3147 Research Drive
State College, PA 16801
Customer: FER40

214 Wyoming Avenue Wyoming, PA 18644
APPLICATION FOR PAYMENT
APPLICATION NUMBER 006
PERIOD 08/31/2022 THRU 09/29/2022
INVOICE NUMBER 8866

Centre County, Ferguson Township

9/29/2022

ITEM NO.	DESCRIPTION OF WORK	UNIT	ORIGINAL QUANTITY	UNIT PRICE	SCHEDULED VALUE	*** QUANTITIES *** PREVIOUS APPLICATION	THIS PERIOD	TO DATE	*** AMOUNT *** PREVIOUS APPLICATION	THIS PERIOD	MATERIALS PRESENTLY STORED	TO DATE	% COMPLETE	BALANCE TO FINISH	RETAINAGE (IF VARIABLE RATE)
0608-0001	Mobilization	LS	1.00	$24,000.00	$24,000.00	0.77	0.100000	0.87	$18,480.00	$2,400.00	$0.00	$20,880.00	87.00%	$3,120.00	$0.00
0901-0001	Maint & Protection of Traffic	LS	1.00	$8,400.00	$8,400.00	0.77	0.100000	0.87	$6,468.00	$840.00	$0.00	$7,308.00	87.00%	$1,092.00	$0.00
0954-0402	Electric Service Type B	EA	4.00	$1,900.00	$7,600.00	0.00	4.00	4.00	$0.00	$7,600.00	$0.00	$7,600.00	100.00%	$0.00	$0.00
9000-0770	Digital Wave Radar Presence Det Sys	EA	23.00	$8,400.00	$193,200.00	23.00		23.00	$193,200.00		$0.00	$193,200.00	100.00%	$0.00	$0.00
9000-0771	Digital Wave Radar Advance Det Sys	EA	6.00	$8,400.00	$50,400.00	6.00		6.00	$50,400.00		$0.00	$50,400.00	100.00%	$0.00	$0.00
9000-0772	Digital Wave Radar Cabinet Interface	EA	4.00	$8,400.00	$33,600.00	4.00		4.00	$33,600.00		$0.00	$33,600.00	100.00%	$0.00	$0.00
9000-1001	Managed Network Switch	EA	22.00	$3,600.00	$79,200.00	22.00		22.00	$79,200.00		$0.00	$79,200.00	100.00%	$0.00	$0.00
9000-1002	Wireless Comm System - Single Radio	EA	14.00	$4,750.00	$66,500.00	14.00		14.00	$66,500.00		$0.00	$66,500.00	100.00%	$0.00	$0.00
9000-1003	Wireless Comm System - Dual Radio	EA	16.00	$7,400.00	$118,400.00	10.00		10.00	$74,000.00		$0.00	$74,000.00	62.50%	$44,400.00	$0.00
9000-1004	Controller Unit Replacement	EA	4.00	$6,100.00	$24,400.00	0.00		0.00	$0.00		$0.00	$0.00	0.00%	$24,400.00	$0.00
9000-1005	Malfunction Mgmt Unit Replacement	EA	11.00	$1,390.00	$15,290.00	0.00		0.00	$0.00		$0.00	$0.00	0.00%	$15,290.00	$0.00
9000-1006	Solar Power Supply System	EA	1.00	$8,000.00	$8,000.00	0.00		0.00	$0.00		$0.00	$0.00	0.00%	$8,000.00	$0.00
9000-1007	Radio Roof Mounting	EA	1.00	$1,986.00	$1,986.00	1.00		1.00	$1,986.00		$0.00	$1,986.00	100.00%	$0.00	$0.00
9000-1008	Cabinet Modification for Phase Change	EA	1.00	$3,100.00	$3,100.00	0.00	1.00	1.00	$0.00	$3,100.00	$0.00	$3,100.00	100.00%	$0.00	$0.00
9000-1009	TSS, Strain Pole (30' Height) 1,000#	EA	2.00	$11,000.00	$22,000.00	1.00	1.00	2.00	$11,000.00	$11,000.00	$0.00	$22,000.00	100.00%	$0.00	$0.00
9000-1010	TSS, Strain Pole w/ Lum Arm 30' Ht 1000#	EA	2.00	$16,500.00	$33,000.00	1.00	1.00	2.00	$16,500.00	$16,500.00	$0.00	$33,000.00	100.00%	$0.00	$0.00
9000-0011	TSS, Strain Pole Blk Paint 30' Ht 1000#	EA	0.00	$12,200.00	$0.00	0.00		0.00	$0.00		$0.00	$0.00	#DIV/0!	$0.00	$0.00
9000-0011	TSS, Strain Pole Blk Paint 30' Ht 2000#	EA	1.00	$14,223.00	$14,223.00	0.50	0.50	1.00	$7,111.50	$7,111.50	$0.00	$14,223.00	100.00%	$0.00	$0.00
9999-1012	Network Access Relocation	LS	1.00	$5,964.00	$5,964.00	1.00		1.00	$5,964.00		$0.00	$5,964.00	100.00%	$0.00	$0.00
0608-0001	Mobilization	LS	1.00	$4,800.00	$4,800.00	1.00		1.00	$4,800.00		$0.00	$4,800.00	100.00%	$0.00	$0.00
0901-0001	Maint & Protection of Traffic	LS	1.00	$1,680.00	$1,680.00	1.00		1.00	$1,680.00		$0.00	$1,680.00	100.00%	$0.00	$0.00
		Contract Total:		-	$715,743.00	-	-	-	$570,889.50	$48,551.50	$0.00	$619,441.00	86.55%	$96,302.00	$0.00

Pay App 5

ALPHA SPACE CONTROL CO., INC.

1580 GABLER ROAD
CHAMBERSBURG, PA 17201

INVOICE

DATE	INVOICE #
10/25/2022	57390

NAME / ADDRESS	
FERGUSON TOWNSHIP CENTRE COUNTY 3147 RESEARCH DRIVE STATE COLLEGE, PA 16801	
ATTN:	RYAN SCALAN

JOB: 2022 TRAFFIC MARKINGS (22-535)

ADDRESS:

CITY/ST: CENTRE COUNTY, PA.

TERMS	DUE DATE	CUSTOMER P.O. NO.	ALPHA P/SO #	SALES REP:
	11/24/2022		22-535	CHRIS / RICH

QTY	DESCRIPTION	COST	TOTAL
	ROAD STRIPING:		
0	LF OF 4" SINGLE YELLOW LINE	0.085	0.00
0	LF OF 4" OR 6" SINGLE WHITE LINE	0.085	0.00
203	LF OF 24" WHITE/YELLOW: STOP BAR/ CROSSWALK/ HATCHING	3.00	609.00
0	LF OF 6" SINGLE YELLOW BIKE PATH LINE	0.15	0.00
0	LF OF 18" BIKE HATCHING	2.35	0.00
789	LF OF12 WHITE HATCHING/ VASCAR	2.75	2,169.75
163	LF 8" OF WHITE CROSSWALK	2.60	423.80
135	LF OF 6"WHT LINE CROSS WALKS	1.95	263.25
167	LF 4" WHITE PARKING STALL	0.15	25.05
6	EA PENNDOT ARROWS	60.00	360.00
1	EA PENNDOT COMBINATION ARROWS	110.00	110.00
0	8' ONLY LEGEND(S)	65.00	0.00
0	8' STOP LEGEND(S)	65.00	0.00
2	8' AHEAD LEGEND(S)	100.00	200.00
5	BIKE LEGEND	65.00	325.00
0	8' PED LEGEND	75.00	0.00
5	8' X-ING LEGEND	65.00	325.00
0	R X R CROSSBUCK LEGEND	175.00	0.00
2	8' SLOW LEGEND	65.00	130.00
0	LARGE CURVE ARROWS	85.00	0.00
18	BIKE SYMBOL W/ SHARROW	50.00	900.00
5	BIKE SYMBOLS	35.00	175.00
0	LANE MERGE ARROWS	100.00	0.00
0	12 X 18 YIELD TRIANGLES	5.00	0.00

2022-C8 Pay App 5 (FINAL)
(Fall Legends)
Pay: $6,085.85
Acct: 35.433.610

Ryan T. Scalan

TOTAL

ALPHA SPACE CONTROL CO., INC.

1580 GABLER ROAD
CHAMBERSBURG, PA 17201

INVOICE

DATE	INVOICE #
10/25/2022	57390

NAME / ADDRESS	
FERGUSON TOWNSHIP CENTRE COUNTY 3147 RESEARCH DRIVE STATE COLLEGE, PA 16801	
ATTN:	RYAN SCALAN

JOB: 2022 TRAFFIC MARKINGS (22-535)

ADDRESS:

CITY/ST: CENTRE COUNTY, PA.

TERMS	DUE DATE	CUSTOMER P.O. NO.	ALPHA P/SO #	SALES REP:
	11/24/2022		22-535	CHRIS / RICH

QTY	DESCRIPTION	COST	TOTAL
0	+ INTERSECTION SYMBOL (12' X 6')	50.00	0.00
0	8' XX MPH LEGEND	75.00	0.00
0	SF OF LINE REMOVAL VIA GRINDING METHOD	1.30	0.00
0	SHARKS TEETH (REMOVAL)	10.00	0.00
0	"STOP" LEGEND (REMOVAL)	120.00	0.00
0	"AHEAD" LEGEND (REMOVAL)	125.00	0.00
0	"BIKE LEGEND" (REMOVAL)	75.00	0.00
0	"XING" LEGNED (REMOVAL)	125.00	0.00
0	"BIKE SHARROWS" (REMOVAL)	25.00	0.00
0	ARROW (REMOVAL)	100.00	0.00
0	SCHOOL SLOW	75.00	0.00
2	H/C SYMBOL(S)	35.00	70.00
	PENNSYLVANIA SALES TAX	6.00%	0.00

TERMS: NET 30 DAYS 1.5% INTEREST AFTER DUE DATE.

VISA & MASTERCARD NOW BEING ACCEPTED.
THANK YOU FOR YOUR PATRONAGE.

RTS
PAY

TOTAL $6,085.85

CONTRACT 2022-C8 PAVEMENT MARKINGS

Field Quantities

							Spring painting		Eradication		Fall long lines_round 1		Fall long lines_round 2		Fall Legends	
			ALPHA SPACE		INITIAL BID QTYS		PAY APP #1 QTYS		PAY APP #2 QTYS		PAY APP #3 QTYS		PAY APP #4 QTYS		PAY APP #5 QTYS	
NO.	ITEM	UNIT	UNIT PRICE	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST
1	4" YELLOW LONG LINE	LF	$0.0850	$117,837.20	433,142	$36,817.07	103,388	$8,787.98	0	$0.00	59,101	$5,023.59	157,923	$13,423.46		$0.00
2	4" or 6" WHITE LONG LINE	LF	$0.0850	$77,155.69	365,767	$31,090.20	30,445	$2,587.83	0	$0.00	63,609	$5,406.77	185,810	$15,793.85		$0.00
3	6" YELLOW BIKE PATH LINE	LF	$0.1500	$393.90	2,626	$393.90		$0.00	0	$0.00		$0.00		$0.00		$0.00
4	36" WHITE (CROSS WALK / HATCHING)	LF	$4.50	$139.50	0	$0.00		$0.00	0	$0.00		$0.00		$0.00		$0.00
5	24" WHITE (STOP / CROSS WALK / HATCHING)	LF	$3.00	$37,716.00	5,386	$16,158.00	5,673	$17,019.00	0	$0.00		$0.00		$0.00	203	$609.00
6	24" YELLOW (HATCHING)	LF	$3.00	$4,506.00	682	$2,046.00		$0.00	0	$0.00		$0.00		$0.00		$0.00
7	18" WHITE HATCHING (BIKE CROSSING)	LF	$2.85	$0.00	0	$0.00		$0.00	0	$0.00		$0.00		$0.00		$0.00
8	12" WHITE (VASCAR / HATCH)	LF	$2.75	$7,524.00	2,036	$5,599.00		$0.00	0	$0.00		$0.00		$0.00	789	$2,169.75
9	8" WHITE CROSS WALK	LF	$2.60	$24,112.40	8,418	$21,886.80	2,428	$6,312.80	0	$0.00		$0.00		$0.00	163	$423.80
10	6" WHITE CROSSWALK	LF	$1.95	$19,911.45	0	$0.00	3,669	$7,154.55	0	$0.00		$0.00		$0.00	135	$263.25
11	4" WHITE PARKING STALL	LF	$0.15	$507.45	3,383	$507.45	0	$0.00	0	$0.00		$0.00		$0.00	167	$25.05
12	SINGLE ARROW	EA	$60.00	$61,440.00	422	$25,320.00	326	$19,560.00	0	$0.00		$0.00		$0.00	6	$360.00
13	COMBINATION ARROW	EA	$110.00	$8,140.00	9	$990.00	5	$550.00	0	$0.00		$0.00		$0.00	1	$110.00
14	"ONLY" LEGEND	EA	$65.00	$2,405.00	4	$260.00	4	$260.00	0	$0.00		$0.00		$0.00		$0.00
15	"STOP" LEGEND	EA	$65.00	$1,430.00	4	$260.00	4	$260.00	0	$0.00		$0.00		$0.00		$0.00
16	"AHEAD" LEGEND	EA	$100.00	$600.00	4	$400.00	2	$200.00	0	$0.00		$0.00		$0.00	2	$200.00
17	"BIKE" LEGEND	EA	$65.00	$390.00	2	$130.00	0	$0.00	0	$0.00		$0.00		$0.00	5	$325.00
18	"PED" LEGEND	EA	$55.00	$110.00	2	$110.00	2	$110.00	0	$0.00		$0.00		$0.00		$0.00
19	"X-ING" LEGEND	EA	$65.00	$1,560.00	23	$1,495.00	14	$910.00	0	$0.00		$0.00		$0.00	5	$325.00
20	"R X R" CROSSBUCK LEGEND	EA	$195.00	$2,340.00	0	$0.00	0	$0.00	0	$0.00		$0.00		$0.00		$0.00
21	"SLOW"	EA	$65.00	$650.00	8	$520.00	5	$325.00	0	$0.00		$0.00		$0.00	2	$130.00
22	LARGE CURVE ARROW	EA	$80.00	$480.00	6	$480.00	0	$0.00	0	$0.00		$0.00		$0.00		$0.00
23	BIKE SYMBOL	EA	$35.00	$1,295.00	18	$630.00	14	$490.00	0	$0.00		$0.00		$0.00	5	$175.00
24	WRONG WAY ARROW	EA	$55.00	$110.00	2	$110.00	2	$110.00	0	$0.00		$0.00		$0.00		$0.00
25	LANE MERGE ARROW	EA	$0.00	$0.00	0	$0.00	0	$0.00	0	$0.00		$0.00		$0.00		$0.00
26	12"X18" YIELD TRIANGLES	EA	$5.00	$390.00	78	$390.00	60	$300.00	0	$0.00		$0.00		$0.00		$0.00
27	"+" INTERSECTION SYMBOL (12'X6")	EA	$50.00	$200.00	4	$200.00	0	$0.00	0	$0.00		$0.00		$0.00		$0.00
28	"XX MPH" LEGENG (8')	EA	$0.00	$0.00	0	$0.00	0	$0.00	0	$0.00		$0.00		$0.00		$0.00
29	PAVEMENT MARKING REMOVAL	SF	$1.30	$48,358.70	37,199	$48,358.70	0	$0.00	31,839	$41,390.35		$0.00		$0.00		$0.00
30	PAVEMENT MARKING REMOVAL (SHARK TEETH	EA	$10.00	$180.00	18	$180.00	0	$0.00	0	$0.00		$0.00		$0.00		$0.00
31	PAVEMENT MARKING REMOVAL ("STOP")	EA	$120.00	$120.00	1	$120.00	0	$0.00	0	$0.00		$0.00		$0.00		$0.00
32	PAVEMENT MARKING REMOVAL ("AHEAD")	EA	$125.00	$125.00	1	$125.00	0	$0.00	0	$0.00		$0.00		$0.00		$0.00
33	PAVEMENT MARKING REMOVAL (BIKE LEGEND)	EA	$75.00	$450.00	6	$450.00	0	$0.00	0	$0.00		$0.00		$0.00		$0.00
34	PAVEMENT MARKING REMOVAL ("XING")	EA	$125.00	$750.00	6	$750.00	0	$0.00	0	$0.00		$0.00		$0.00		$0.00
35	PAVEMENT MARKING REMOVAL (RIGHT ARROW	EA	$100.00	$500.00	5	$500.00	0	$0.00	0	$0.00		$0.00		$0.00		$0.00
36	PAVEMENT MARKING REMOVAL (LEFT ARROW)	EA	$100.00	$700.00	7	$700.00	0	$0.00	0	$0.00		$0.00		$0.00		$0.00
37	PAVEMENT MARKING REMOVAL (SHARROWS)	EA	$25.00	$575.00	23	$575.00	0	$0.00	0	$0.00		$0.00		$0.00		$0.00
38	SCHOOL SLOW	EA	$150.00	$1,950.00	0	$0.00	0	$0.00	0	$0.00		$0.00		$0.00		$0.00
39	HC SYMBOLS	EA	$35.00	$175.00	5	$175.00	3	$105.00	0	$0.00		$0.00		$0.00	2	$70.00
40	SHARROWS	EA	$50.00	$1,150.00	23	$1,150.00	0	$0.00	0	$0.00		$0.00		$0.00	18	$900.00
41	SPEED HUMPS (12"x50')	EA	$150.00	$2,400.00	0	$0.00	0	$0.00	0	$0.00		$0.00		$0.00		$0.00
42	"NO PARKING BUS LANE"	EA	$100.00	$300.00	0	$0.00	0	$0.00	0	$0.00		$0.00		$0.00		$0.00
	TOTAL AMOUNT			$429,077.29		$198,877.12	**$65,042.16**		**$41,390.35**		**$10,430.36**		**$29,217.31**		**$6,085.85**	

To-Date $152,166.02
Budget $178,965.00

10/12/22

8"CW

VARIOUS

ALL LAYOUT

8' AHEAD

6' BIKE LEGEND & ^

8' XING

8'-BIKE SYMBOL

INTERSECTION AND PAINT/THERMO

Intersection Name	4" Line W/Y	~~5" Line W/Y~~	6" Line W/Y	12" Line W/Y	24" Stop Bar LF/Ea.	~~6" Xwalks~~	24" W/Y Gores	~~Only 8'~~ Legends	Stop 8' Legends	Arrows Left	~~Right~~	~~Straight~~	Combo	
RESEARCH DR				59										
NIXON								1	1					
FOX POINT											2	2		
SCIENCE PARK - OLD CAMBRIDGE RD		163								3				
DEVONSHIRE						18								
REMOVAL														

VASCAR

ALL LAYOUT

10/11/22 H/C BIKE BOX

INTERSECTION AND PAINT/THERMO

Intersection Name	4" Line W/Y	5" Line W/Y	6" Line W/Y	12" Line W/Y	24" Stop Bar LF/Ea.	6" Xwalks	24" W/Y Gores	Only 8' Legends	Stop 8' Legends	Left Arrows	Right Arrows	Straight Arrows	Combo Arrows
NIXON @ RT 45					20								
CHESTER - NIXON				72									
N. ALLEN H/C			12							1			
~~CHESTER DRIVE~~ GARVER				52									
FAIRBROOK				54									
EMORY				62									
3001 WHITEHALL				62									
FIELDSTONE				57									
BREEZEWOOD				60									
1301 WHITEHALL			Restripe	176									
OLD GATESBURG - PIERSON				81									
OLD GATESBURG - Calibration				54									
SCIENCE PARK - OLD GATESBURG					27								
SLEEPY HOLLOW						54		1	1				
NIXON - WHITEHALL					13								
NIXON - BIKE TRAIL							67	2	2				
HOMESTEAD PARK										1		1	3
REMOVAL													

Roadways 8'XING 8'BIKE SYMBOL

H/C ACCESS ISLAND

STALLS

10/23/22

NTERSECTION AND PAINT/THERMO

Intersection Name	4" Line W/Y	5" Line W/Y	6" Line W/Y	12" Line W/Y	24" Stop Bar LF/Ea.	6" Xwalks	24" W/Y Gores	Legends: Slow	Legends: Stop 8'	Arrows: Left	Arrows: Right	Arrows: Straight	Arrows: Combo	Arrows: Stop Ahead
Nixon					51			2		1	1			1
Sandy Drive	130		69		25	← All new		→			1		1	
REMOVAL														

PROUD OF OUR PAST. PLANNING FOR OUR FUTURE.

October 27, 2022

Dear Board of Supervisors,

The Board's decision on forming our committee was premised on the goal that the committee would advise the Board on matters pertaining to the village of Pine Grove Mills. This was with the understanding that this committee would help the Board implement the stated goals of the 2019 Small Area Plan. We are all quite grateful for the opportunity that you have given each one of us and we want to elevate Pine Grove Mills to the next level.

As such, we, the undersigned members of the Pine Grove Mills Small Area Plan Advisory Committee, recommend you to add the position of an Economic and Community Development Planner to the township payroll.

Many of the goals, objectives, and actions enumerated in the Small Area Plan are predicated on the grander vision of Pine Grove Mills having a flourishing small business ecosystem. While there are many things that can be done by us and the current staff, we are also mindful that the staff we currently have only have so many hours in a day. This is in addition to the fact that while encouraging economic vibrancy is part of their job, it is by no means the only one.

Our Small Area Plan laid out that quite a few goals that were to be achieved by 2025. We grant that this was written before the pandemic which has thrown a wrench into timelines. However, we want to adhere to this goal as best as we can so we can realize the vision of our neighbors as quickly as feasible.

It is our belief that bringing a new staff member, who has the clear goal of encouraging economic development, would assist you and us to see the success of many of the goals outlined in the Small Area Plan.

Thank you for your time of consideration,

The Pine Grove Mills Small Area Plan Advisory Committee

Matthew Heller, Chair
Paul Tomkiel, Vice-Chair
Liz Grove, Secretary
Jordan Robb
Shannon Holliday

W: www.twp.ferguson.pa.us/PineSAP
C: Jenna Wargo, AICP Director of Planning & Zoning
A: 3147 Research Drive, State College PA 16801
P: (814) 238-4651 E: jwargo@twp.ferguson.pa.us

CENTRE REGION COUNCIL OF GOVERNMENTS

Finance Committee

Detailed Budget Municipal Contributions Analysis

2022 Municipal Contributions $ 7,952,860

2023 Finance Guideline 8.00%

Code	Fund	Item	Item $ Change	Fund +/- $ Total	% Change GOV Share	$ Total GOV Share	% Increase Total GOV Share	+/- $ GOV Share
		BEGINNING BALANCE				$ 9,293,914	16.86%	$ 1,341,054
C50	Administration	Remove IT Study Recommendations	$ (20,000)		-0.25%	$ 9,273,914	16.61%	$ 1,321,054
C50	Administration	Reduce employee development	$ (3,000)		-0.04%	$ 9,270,914	16.57%	$ 1,318,054
C50	Administration	Reduce health insurance to actual	$ (4,247)		-0.05%	$ 9,266,667	16.52%	$ 1,313,807
C50	Administration	Unemployment Refund	$ (7,000)		-0.09%	$ 9,259,667	16.43%	$ 1,306,807
C50	Administration	Remove Accounting Software escrow	$ (20,000)		-0.25%	$ 9,239,667	16.18%	$ 1,286,807
C50	Administration	Reduce consulting services	$ (11,500)		-0.14%	$ 9,228,167	16.04%	$ 1,275,307
C50	Administration	Transfer from Insurance Reserve	$ (100,000)		-1.26%	$ 9,128,167	14.78%	$ 1,175,307
C50	Administration	Updated 2022 Estimates	$ (16,400)	$ (182,147)	-0.21%	$ 9,111,767	14.57%	$ 1,158,907
C51	Building Capital	Reduce capital reinvestment	$ (9,382)		-0.12%	$ 9,102,385	14.45%	$ 1,149,525
C51	Building Capital	Reduce New Construction Transfer	$ -		0.00%	$ 9,102,385	14.45%	$ 1,149,525
C51	Building Capital	Reduce Existing Structure Transfer	$ -		0.00%	$ 9,102,385	14.45%	$ 1,149,525
C51	Building Capital	Reduce Regional Refuse Transfer	$ -	$ (9,382)	0.00%	$ 9,102,385	14.45%	$ 1,149,525
C40	New Construction	Reduce Building Capital Transfer	$ -		0.00%	$ 9,102,385	14.45%	$ 1,149,525
C40	New Construction	Reduce health insurance to actual	$ -	$ -	0.00%	$ 9,102,385	14.45%	$ 1,149,525
C41	Existing Construction	Reduce health insurance to actual	$ -		0.00%	$ 9,102,385	14.45%	$ 1,149,525
C41	Existing Construction	Reduce Building Capital Transfer	$ -	$ -	0.00%	$ 9,102,385	14.45%	$ 1,149,525
S05	Library Operating	Reduce health insurance to actual (less Distr)	$ (7,499)		-0.09%	$ 9,094,886	14.36%	$ 1,142,026
S05	Library Operating	Convert Foundation funding from capital		$ (7,499)	0.00%	$ 9,094,886	14.36%	$ 1,142,026
S07	Library Capital	Convert municipal funding to capital		$ -	0.00%	$ 9,094,886	14.36%	$ 1,142,026
C45	Regional Planning	Refund for sustainability implementation	$ (75,000)		-0.94%	$ 9,019,886	13.42%	$ 1,067,026
C45	Regional Planning	Remove source water protection study	$ (2,175)		-0.03%	$ 9,017,711	13.39%	$ 1,064,851
C45	Regional Planning	Updated 2022 Estimates	$ (300)		0.00%	$ 9,017,411	13.39%	$ 1,064,551
C45	Regional Planning	Reduce health insurance to actual	$ (2,777)		-0.03%	$ 9,014,634	13.35%	$ 1,061,774
C45	Regional Planning	Add internship program back in	$ 60		0.00%	$ 9,014,694	13.35%	$ 1,061,834
C45	Regional Planning	Refund for unemployment	$ (3,250)	$ (83,442)	-0.04%	$ 9,011,444	13.31%	$ 1,058,584
C46	CCMPO	Refund for unemployment	$ (883)		-0.01%	$ 9,010,561	13.30%	$ 1,057,701
C46	CCMPO	Reduce health insurance to actual	$ (1,184)		-0.01%	$ 9,009,377	13.28%	$ 1,056,517
C46	CCMPO	Increase in Federal funding	$ (8,385)		-0.11%	$ 9,000,992	13.18%	$ 1,048,132
C46	CCMPO	Adjustment in 2022 Estimated	$ 717		0.01%	$ 9,001,709	13.19%	$ 1,048,849
C46	CCMPO	Remove Active Transportation Plan	$ -	$ (9,735)	0.00%	$ 9,001,709	13.19%	$ 1,048,849
C60	Regional Refuse	Reduce health insurance to actual	$ -		0.00%	$ 9,001,709	13.19%	$ 1,048,849
C60	Regional Refuse	Reduce Building Capital Transfer	$ -	$ -	0.00%	$ 9,001,709	13.19%	$ 1,048,849
C30	Fire Operating	Steve's salaries needs	$ (10,402)		-0.13%	$ 8,991,307	13.06%	$ 1,038,447
C30	Fire Operating	Remove Part Time Hires	$ -		0.00%	$ 8,991,307	13.06%	$ 1,038,447
C30	Fire Operating	Remove Supervisory Upgrade	$ -		0.00%	$ 8,991,307	13.06%	$ 1,038,447
C30	Fire Operating	Updated 2022 Estimates	$ (91)		0.00%	$ 8,991,216	13.06%	$ 1,038,356
C30	Fire Operating	Reduce health insurance to actual	$ (7,890)		-0.10%	$ 8,983,326	12.96%	$ 1,030,466
C30	Fire Operating	Remove IT Equipment	$ -		0.00%	$ 8,983,326	12.96%	$ 1,030,466
C30	Fire Operating	Remove Contingency	$ (36,276)		-0.46%	$ 8,947,050	12.50%	$ 994,190
C30	Fire Operating	Unemployment Refund	$ (2,267)		-0.03%	$ 8,944,783	12.47%	$ 991,923
C30	Fire Operating	Add projected PSU Athletics Contribution	$ (83,702)	$ (140,628)	-1.05%	$ 8,861,081	11.42%	$ 908,221
C31	Fire Capital	Smooth equipment inflationary increase	$ (18,249)	$ (18,249)	-0.23%	$ 8,842,832	11.19%	$ 889,972
C35	EM	Reduce health insurance to actual	$ (136)	$ (136)	0.00%	$ 8,842,696	11.19%	$ 889,836
C53	Insurance Reserve	Transfer to Administration	$ -	$ -	0.00%	$ 8,842,696	11.19%	$ 889,836
C20	Parks Operating	Updated 2022 Estimates	$ (29,500)		-0.37%	$ 8,813,196	10.82%	$ 860,336
C20	Parks Operating	Remove Summer Camp & Prog Coord	$ (73,835)		-0.93%	$ 8,739,361	9.89%	$ 786,501
C20	Parks Operating	Remove Natural Resources Super	$ (56,143)		-0.71%	$ 8,683,218	9.18%	$ 730,358
C20	Parks Operating	Add Back Staffing - Summer Camps	$ 1,352		0.02%	$ 8,684,570	9.20%	$ 731,710
C20	Parks Operating	Unemployment Refund	$ (18,000)		-0.23%	$ 8,666,570	8.97%	$ 713,710
C20	Parks Operating	Reduce health insurance to actual	$ (10,059)		-0.13%	$ 8,656,511	8.85%	$ 703,651
C20	Parks Operating	Reduce IT Costs - Laptops	$ (6,600)		-0.08%	$ 8,649,911	8.76%	$ 697,051
C20	Parks Operating	Reduce Protective Clothing	$ -	$ (192,785)	0.00%	$ 8,649,911	8.76%	$ 697,051
R13	Aquatics	Reduce health insurance to actual	$ -	$ -	0.00%	$ 8,649,911	8.76%	$ 697,051
R11	Nature Center	Reduce health insurance to actual	$ (791)		-0.01%	$ 8,649,120	8.75%	$ 696,260
R11	Nature Center	Reduction in Operating Supplies	$ (1,000)		-0.01%	$ 8,648,120	8.74%	$ 695,260
R11	Nature Center	Reduction in Computers - Laptop & IT Secur	$ (12,200)		-0.15%	$ 8,635,920	8.59%	$ 683,060
R11	Nature Center	Updated 2022 Estimates	$ -		0.00%	$ 8,635,920	8.59%	$ 683,060
R11	Nature Center	Remove Facility Rent Coord Position	$ (36,917)	$ (50,908)	-0.46%	$ 8,599,003	8.12%	$ 646,143
R10	Nature Center Capital	Remove Boardwalk Expenditures	$ -		0.00%	$ 8,599,003	8.12%	$ 646,143
R10	Nature Center Capital	Remove Grant Match	$ -	$ -	0.00%	$ 8,599,003	8.12%	$ 646,143
R14	Active Adult Center	Unemployment Refund	$ (2,500)		-0.03%	$ 8,596,503	8.09%	$ 643,643
R14	Active Adult Center	Reduce health insurance to actual	$ (467)		-0.01%	$ 8,596,036	8.09%	$ 643,176
R14	Active Adult Center	Updated 2022 Estimates	$ (500)		-0.01%	$ 8,595,536	8.08%	$ 642,676
R14	Active Adult Center	Remove Program Coord Position	$ (72,448)		-0.91%	$ 8,523,088	7.17%	$ 570,228
R14	Active Adult Center	Defer IT Infrastructure Upgrade	$ -		0.00%	$ 8,523,088	7.17%	$ 570,228
R14	Active Adult Center	Defer Replacement Printer	$ -	$ (75,915)	0.00%	$ 8,523,088	7.17%	$ 570,228
C21	Parks Capital	Eliminate $16,000 transfer from Operating	$ -	$ -	0.00%	$ 8,523,088	7.17%	$ 570,228
R12	Pools Capital	Reduce capital reinvestment	$ (31,100)		-0.39%	$ 8,491,988	6.78%	$ 539,128
R12	Pools Capital	Eliminate Concrete Slab Repair - Welch	$ -		0.00%	$ 8,491,988	6.78%	$ 539,128
R12	Pools Capital	Eliminate Water Feature Upgrade - Welch	$ -	$ (31,100)	0.00%	$ 8,491,988	6.78%	$ 539,128
R15	Regional Parks Capital	Eliminate Oak Hall Parking Lot Engineering	$ -		0.00%	$ 8,491,988	6.78%	$ 539,128
R15	Regional Parks Capital	Eliminate Water Wheels	$ -	$ -	0.00%	$ 8,491,988	6.78%	$ 539,128
					0.00%	$ 8,491,988	6.78%	$ 539,128

Department of
PLANNING AND ZONING

Interoffice Memorandum

TO: Ferguson Township Board of Supervisors

FROM: Jenna Wargo, AICP
Director of Planning & Zoning

DATE: October 26, 2022

SUBJECT: **Salvation Baptist Church Preliminary Land Development Plan**

Provided with the agenda is the Salvation Baptist Church Preliminary Land Development Plan, last revised October 19, 2022. This land development plan is located at 3645 West College Avenue (TP: 24-004-078-0000). The parcel is approximately 60.61 acres and is zoned Rural Agricultural (RA) and Corridor Overlay (COD).

This land development plan proposed a fellowship hall and garage, totaling 13,626 SF. At the time of the original land development plan, a fellowship hall and garage was proposed adjacent to the church and was never constructed. Since it has been more than (5) years since the original land development plan was approved, a new plan is required.

Staff has reviewed the resubmission and is recommending conditional approval subject to the conditions as attached to this memorandum.

TOWNSHIP OF FERGUSON

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

October 19, 2022

Joseph E. Lichty, P.E.
687 Berkshire Drive
State College, PA 16803

RE: Salvation Baptist Church Preliminary Land Development Plan—4th Review

Dear Mr. Lichty,

Thank you for resubmitting the Salvation Baptist Church Preliminary Land Development Plan, dated, February 9, 2022, last revised October 13, 2022, for our review. The submission has been reviewed by staff and agencies as required by the Township's Code of Ordinances.

Please review and respond to the following comments and resubmit at your earliest convenience. Feel free to contact staff with any questions.

Should you have any additional questions, please contact me at jwargo@twp.ferguson.pa.us or 570-452-5102.

Sincerely,

Jenna Wargo, AICP
Director of Planning & Zoning

cc: Kristina Bassett, Community Planner
LF: 1978-3-2B

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

TO: Kristina Bassett, Community Planner

FROM: Jeffrey Ressler, Zoning Administrator

DATE: October 18, 2022

SUBJECT: Salvation Baptist Church Preliminary Plan 4th Review

2. Reference to and the conditions of the Variance granted June 28, 2017 need to be listed on the plan. Conditions include a waterways encroachment permit. **Comment addressed.**
3. Floodplains, as defined by the Township Zoning Ordinance [Chapter 271 must be included on the plan. (Chapter 22, Section 401.1.A.2.c.ii) Floodplain is Zone A. A study should be completed to determine the actual floodplain limits. **Comment not addressed. Riparian Buffer also needs to be shown on the plan.**

16. A signed notarized statement by the owner certifying ownership of the property must be included on the plan. (Chapter 22, Section 401 C.I .1) **Comment Remains.**

NEWELL TERESKA & MACKAY ENGINEERING

NTM Engineering, Inc.
341 Science Park Road, Suite 203
State College, PA 16803
814-862-9191

October 18, 2022

Via Email

Township of Ferguson
3147 Research Drive
State College, Pennsylvania 16801

Attn: Mr. Ronald Seybert, Township Engineer

RE: Salvation Baptist Church Plan
Stormwater Management Site Plan Review

Dear Ron,

We have completed our initial stormwater management review for the Salvation Russian Baptist Church Plan. The applicant's Design Professional, Lichty Engineering, submitted the following information that serves as the basis of our review:

1. Salvation Baptist Church Stormwater Management Plan Update with revisions through October 13, 2022. (5 sheets)
2. Salvation Baptist Church 2022 Land Development Plan Update Stormwater Management Report Dated August 2022 with revisions through October 14, 2022..
3. Salvation Baptist Church Land Development Plan Sheets LD-1 and LD-2 last revised October 13, 2022.
4. Comment response letter dated October 14, 2022.

NTM has reviewed these documents for compliance with the Township stormwater management ordinance (Chapter 26 of the Township Code. Our continuing comments are provided in bold text below.

4. **26-308.1.A.** Provide a drainage easement for the drainageway traversing the property.

   September 19, 2022: Comment not addressed. Easement not clearly identified on Stormwater Management Plan.

   October 18, 2022: Comment partially addressed. Add the drainage easement designation to the Riparian Overlay Zoning District label on the Stormwater plan. This same revision should be made on the Land Development Plan.

7. **26-402.** Provide a complete and separate Stormwater Management Site Plan Report and Stormwater Management Site Plan Drawings meeting the requirements of Section 26-402

documenting the site stormwater management design. Provide analysis based on Township Standards outlined in Chapter 26 of the Township Code.

September 19, 2022: Comment partially addressed. E&S Plans and details are to be part of the Land Development Plan and not part of the Stormwater Management Site Plan. The PCSM Plans include a significant amount of duplicate information already on the Stormwater Plans. All proposed stormwater management elements required by Township Ordinance should be clearly shown and detailed on the stormwater management site plan. Add a complete Operation and Maintenance matrix to the Stormwater Management Site Plan.

October 18, 2022: Comment addressed.

8. **26-402.** Plans and details for all existing stormwater management facilities must be included on the plan based on as-built information.

   September 19, 2022: Clearly identify all as-built information on the plan and include as-built details for Basin 1.

   October 18, 2022: Comment addressed.

10. **26-**402. Provide detail of the inlet filter on the plans. The inlet filter must filter oil and petroleum as well as sediment since the site is in a well head protection area.

    September 19, 2022: The permanent inlet detail is currently included on the E&S and PCSM plans. When consolidating information ensure that the detail is included as part of the complete Stormwater Management Site Plan.

    October 18, 2022: Comment addressed.

11. **26-402.** Provide details of the restoration process (including how any compacted soils are to be restored), and final planting materials and details proposed for the restoration area,. Restoration methods consistent with PADEP BMP 6.7.2, Landscape Restoration, and BMP 6.7.3, Soil Amendment and Restoration should be applied to be consistent with the runoff curve number used for this area in the post development analysis.

    September 19, 2022: Comment partially addressed. Revise Note 10 on Sheet 3 to indicate that all areas of soil compaction to be renovated to a depth of 6 inches or to the depth of compaction whichever is greater.

    October 18, 2022: Comment addressed.

12. **26-402.** Erosion and Sedimentation Control Plan to reference the Stormwater Management Site Plan Drawings and Report.

    September 19, 2022: Comment partially addressed. The E&S plans are to be included with the site plan. Update the reference to indicate same. Also include the latest revisions date in the reference.

    October 18, 2022: Comment addressed.

13. 26-402. Reference to the Stormwater Management Site Plan Report and E&S Plans to be included on Stormwater Management Site Plan Drawings.

    September 19, 2022: Comment partially addressed. Include most recent revision date in the reference.

    October 18, 2022: Comment addressed.

14. 26-402. Reference to the Stormwater Management Site Plan Drawings and E&S Plan to be included in the Stormwater Management Site Plan Report.

    September 19, 2022: Comment not addressed. Also, include reference to the appropriate drawing set when referencing individual drawings in the narrative.

    October 18, 2022: Comment addressed.

15. **26-702** Declaration of Stormwater and Access Maintenance Easement for Privately Owned Stormwater Facilities to be executed and recorded by the Owner prior to final approval of the Stormwater Management Site Plan.

    September 19, 2022: Applicants response acknowledged. No further response required.

Additional Comments at September 19, 2022:

16. Include documentation identifying the capture volume, recharge volume, and water quality volume per the Township Ordinance. Include demonstration that these values are being met.

    October 18, 2022: Comment addressed.

17. Stormwater Management Plan Sheet SW-1. Update the Stormwater Management Plan Set List of Plan Sheet: Delete the Land Development List of Drawings from this sheet. Delete the Planning Commission and Board of Supervisors signature block.

    October 18, 2022: Comment addressed.

18. Delete the Township Reviewer and Design Engineer Certification blocks from Sheet SW-2.

    <u>October 18, 2022</u>: Comment addressed.

19. Include the BMP Operation and Maintenance matrix on the Stormwater Management Site Plan. The matrix should match the information in the Stormwater Report.

    <u>October 18, 2022</u>: Comment addressed.

20. On Sheet SW-23 identify the capture depth below the first orifice.

    <u>October 18, 2022</u>: Comment addressed.

21. Identify Critical Stages of Construction on the Stormwater Management Plans.

    <u>October 18, 2022</u>: Comment addressed.

If you have any questions or require additional information, please feel free to contact me at 814-862-9191.

Sincerely,
NTM Engineering, Inc.

Scott A. Brown, PE, D.WRE
Senior Project Manager

ec: Ms. Jenna Wargo, AICP, Director of Planning and Zoning, Ferguson Township
Mr. James Coslo, Centre County Conservation District

LOCATION MAP

SOURCE: PEMA 22001930 PAN
SCALE: 1"=400'

SALVATION BAPTIST CHURCH

3645 WEST COLLEGE AVENUE
STATE COLLEGE, PA 16801

LAND DEVELOPMENT PLAN UPDATE

ORIGINAL ZONING PERMIT APPLICATION DATE: 02/09/2022

PROJECT NARRATIVE

SALVATION BAPTIST CHURCH, AKA RUSSIAN CHURCH OF CHRIST, HAS OPERATED A CHURCH AT 3645 WEST COLLEGE AVENUE SINCE 2003. AT THE TIME OF THE ORIGINAL LAND DEVELOPMENT PLAN, A FELLOWSHIP HALL WAS SHOWN NEXT TO THE CHURCH, BUT THE BUILDING WAS NEVER CONSTRUCTED. SINCE IT HAS BEEN MORE THAT 5-YEARS SINCE THE LAST APPROVED LAND DEVELOPMENT PLAN, THIS LAND DEVELOPMENT PLAN UPDATE IS REQUIRED. A STORMWATER MANAGEMENT PLAN HAS BEEN INCLUDED SINCE NEW FACILITIES WERE NEEDED TO MEET CURRENT PADEP WATER QUALITY REQUIREMENTS. THERE WILL BE NO CHANGE TO THE EXTERIOR LIGHTING EXCEPT FOR SHIELDED LUMINAIRES AT THE DOORS OF THE PROPOSED BUILDINGS. CONSEQUENTLY NO REVISED LIGHTING PLAN IS INCLUDED. IN ADDITION, NO NEW LANDSCAPE PLANTING IS PROPOSED EXCEPT LANSCAPING NEXT TO THE BUILDINGS, SO NO LANDSCAPE PLAN IS INCLUDED, A VARIANCE FROM BUFFER YARD REQUIREMENTS WAS GRANTED TO THE CHURCH IN 2005 BY THE ZONING HEARING BOARD, AS PART OF THIS UPDATE, THE CHURCH REQUESTS THAT THE VARIANCE BE EXTENDED.
PARKING FOR THE CHURCH WAS ADDRESSED DURING THE ORIGINAL PLANNING, TWO HUNDRED TWENTY-FIVE SPACES ARE PROVIDED WITH TWELVE HANDI-CAPPED SPACES ARE PROVIDED, A TOTAL OF 223 SPACES ARE PROVIDED, 12 HANDICAPPED AND 211 REGULAR SPACES,
TEMPORARY AND PERMANENT BICYCLE PARKING IS ALSO PROVIDED PER THE ORDINANCE.
WORK PROPOSED AT THE SITE IN THIS UPDATE INCLUDE A FELLOWSHIP HALL AND A NEW GARAGE TOTALING 13,626-SF OF BUILDING COVERAGE. THE STRUCTURES ARE TO BE BUILT DURING 2022 AND 2023. AN NPDES PERMIT FOR DISCHARGE OF RUNOFF FROM CONSTRUCTION ACTIVITIES HAS BEEN APPLIED FOR. THIS PERMIT INCLUDES EROSION AND SEDIMENTATION CONTROL AND STORMWATER MANAGEMENT PLANS. THE SITE IS CURRENTLY SERVED BY UAJA FOR SEWAGE AND SCBWA FOR WATER.

LAND DEVELOPMENT PLAN LIST OF PLAN SHEETS

GENERAL INFORMATION

PROPERTY OWNER
RUSSIAN CHURCH OF CHRIST
3465 WEST COLLEGE AVE.
STATE COLLEGE, PA 16803
DEED BOOK 1360, PAGE 0005
TAX PARCEL 24-004-,078-,0000
MUNICIPALITY: FERGUSON TWP. COUNTY: CENTRE
PARCEL/PROJECT AREA: 25.01-AC TOTAL DISTURBED AREA: 3.65-AC
LATITUDE/LONGITUDE (CENTER OF PROPERTY): 40°45'10.21"N 77°52'23.57"W
USGS QUADRANGLE MAP: JULIAN, PA AND STATE COLLEGE, PA
ORIGINAL LAND DEVELOPMENT PLAN: PLAT BOOK 70, PG 3 (10/27/2003)
SECOND PLAN RECORDING: PLAT BOOK 75, PG 72-76 (11/10/2005)
BUILDING COVERAGE
EX. BUILDING COVERAGE: 19,335-SF, 0.444-AC, 1.78%
NEW BUILDING COVERAGE: 15,108-SF, 0.347-AC, 1.39%
PROPOSED TOTAL BUILDING COVERAGE: 34,443-SF,0.791-AC, 3.16%
IMPERVIOUS COVER
EX. IMPERVIOUS COVER: 120,443-SF, 2.765-AC, 11.06%
PROPOSED TOTAL IMPERVIOUS COVER: 139,300-SF, 3.198-AC, 12.79%
EXISTING LAND USE: CHURCH ON AGRICULTURAL LANDS. LAND USE IS TO REMAIN THE SAME AFTER NEW DEVELOPMENT.
TAX ID NUMBER
24-004-,078-,0000-
DEED REFERENCE
RB 1360, P 0005
ZONING INFORMATION
ZONING DISTRICT: RA - RURAL AGRICULTURE WITH CORRIDORE OVERLAY DIST.
MINIMUM SETBACK
FRONT YARD: 50'
REAR YARD: 75'
SIDE YARD: 50'
MAX. BUILDING AREA: 30%
MAX. IMPERVIOUS COVER: 30%
MAX. BUILDING HEIGHT: 45'
MIN. LOT WIDTH: 60'
RECEIVING WATERS: SLAB CABIN RUN
CHAPTER 93: CWF, MF EXISTING: HQ-CWF, MF (PFBC)
WETLANDS DESIGNATION: NOT PRESENT ON SITE
SEWAGE DISPOSAL: UNIVERSITY AREA JOINT AUTHORITY
WATER SOURCE: STATE COLLEGE BOROUGH WATER AUTHORITY

ACT 172 UTILITY LIST

CABLE - COMCAST CABLE COMMUNICATIONS (814)238-4651
ELECTRIC - WEST PENN POWER (888)544-4877
SEWER - UNIVERSITY AREA JOINT AUTHORITY (814)238-5361
TELEPHONE - VERIZON PENNSYLVANIA LLC
WATER - STATE COLLEGE BOROUGH WATER AUTHORITY (814)238-6766

PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 STOP. CALL BEFORE YOU DIG

PROFESSIONAL ENGINEER'S CERTIFICATIONS

ZONING AND SUBDIVISION AND LAND DEVELOPMENT

I, JOSEPH E. LICHTY, PE, HEREBY CERTIFY THAT THIS PLAN MEETS ALL THE DESIGN REQUIREMENTS OF THE SUBDIVISION AND LAND DEVELOPMENT AND ZONING ORDINANCES OF FERGUSON TOWNSHIP.

Joseph E Lichty — 10/19/2022
JOSEPH E. LICHTY, PE — DATE

STORMWATER MANAGEMENT

I, JOSEPH E. LICHTY, PE, HEREBY CERTIFY THAT THE STORMWATER MANAGEMENT PLAN MEETS ALL DESIGN STANDARDS AND CRITERIA OF THE FERGUSON TOWNSHIP STORMWATER MANAGEMENT ORDINANCE.

Joseph E Lichty — 10/19/2022
JOSEPH E. LICHTY, PE — DATE

TOWNSHIP REVIEWER CERTIFICATION

I, _____ HAVE REVIEWED AND HEREBY CERTIFY THIS PLAN MEETS ALL THE ENGINEERING DESIGN STANDARDS AND CRITERIA OF THE FERGUSON TOWNSHIP CODE OF ORDINANCES.

SIGNED — DATE

OWNERSHIP ACKNOWLEDGEMENT AND STORMWATER ACCEPTANCE

I, VITALY MASLOV, HEREBY CERTIFY THAT I HAVE BEEN APPOINTED BY THE RUSSIAN CHURSH OF CHRIST, AKA SALVATION BAPTIST CHURCH, TO REPRESENT THEIR INTERESTS IN THIS LAND DEVELOPMENT PLAN. I FURTHER CERTIFY THAT THE CHURCH OWNS THE LAND SHOWN ON THE PLAN. THIS CAN BE FOUND AT CENTRE COUNTY RECORDER'S OFFICE IN RB 1360, P 0005. THERE ARE NO OFFERS OF LAND OR FACILITY DEDICATION INCLUDED IN THIS SUBMISSION. THE CHURCH, AS OWNERS, ACKNOWLEDGE THAT THEY ARE RESPONSIBLE FOR MAINTENANCE OF THIS PROPERTY IN ACCORDANCE WITH THE ORDINANCES OF FERGUSON TOWNSHIP. THE STORMWATER MANAGEMENT FACILITIES DEPICTED BY THE PLAN ARE PERMANENT AND WILL BE REMOVED ONLY AFTER APPROVAL OF REVISED PLANS BY FERGUSON TOWNSHIP. THE STORMWATER MANAGEMENT SYSTEM SHALL BE MAINTAINED IN ACCORDANCE WITH THE OWNERSHIP AND MAINTENANCE PLAN.

VITALY MASLOV, CHURCH PROJECT MGR. — DATE

NOTARY SEAL

SWORN BEFORE ME THIS _____DAY OF _____, 2022.

NOTARY PUBLIC

TOWNSHIP APPROVALS

FERGUSON TOWNSHIP PLANNING COMMISSION

_____ DATE — CHAIR _____ DATE
_____ DATE — SECRETARY _____ DATE

FERGUSON TOWNSHIP BOARD OF SUPERVISORS

_____ DATE — CHAIR _____ DATE
_____ DATE — SECRETARY _____ DATE

FIRE CHIEF

_____ DATE

LD-1

LICHTY ENGINEERING
687 Berkshire Drive
State College, PA 16803
(814)954-1441
Lichty.Engineering@comcast.net

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL JOSEPH EDWARD LICHTY ENGINEER 028827-E

DRAWN BY: JEL
02/09/2022

SOURCE: Survey

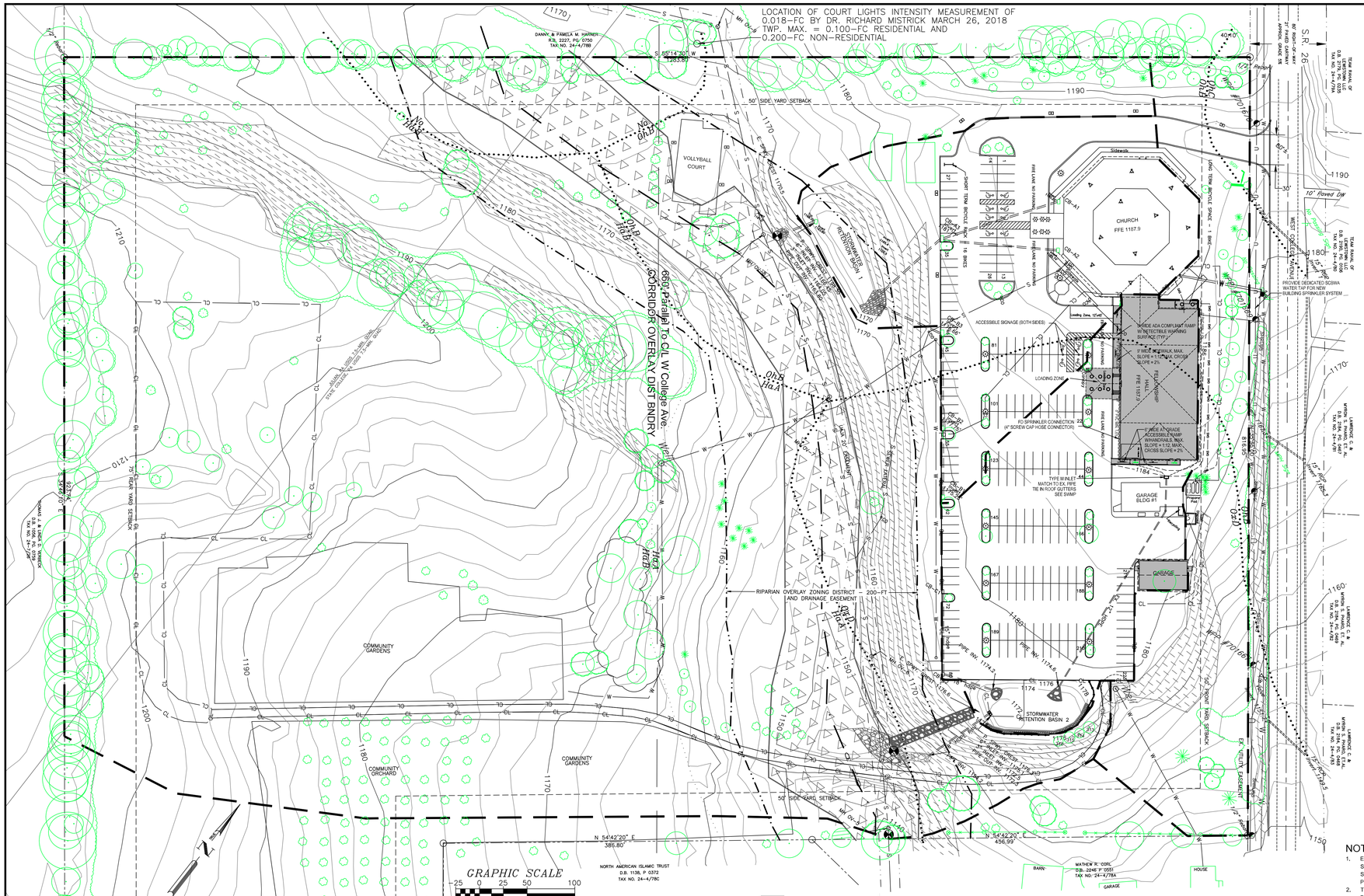
REVISIONS
08/09/2022
09/09/2022
10/13/2022
10/19/2022

SCALE: 1"=50'

ORIGINAL DATE OF ZONING PERMIT APPLICATION
02/09/2022

Salvation Baptist Church
3645 West College Ave - Ferguson Twp - Centre Co - PA

LAND DEVELOPMENT PLAN UPDATE
LAND DEVELOPMENT PLAN



LEGEND

- EXISTING CONTOUR LINES
- FINISHED GRADE CONTOURS
- PROPERTY BOUNDARY
- SETBACK
- PENNDOT CENTERLINE
- UTILITY LINE
- SEWER/LATERAL
- WATERLINE
- GASLINE
- ROW/EASEMENT
- SOIL BOUNDARY/TYPE
- RIPARIAN OVERLAY ZONING DISTRICT/ DRAINAGE EASEMENT
- POLE LIGHTS - PARKING LOT AND VB COURT
- EXISTING TREES AND SHRUBS
- EXISTING TREELINE
- STEEP SLOPES (>25%)
- FEMA FLOOD BOUNDARY
- PROPOSED NEW STRUCTURES
- ADA DETECTIBLE WARNING SURFACE (DWS)

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MAX. IMPERVIOUS COVER: 30%
MAX. BUILDING HEIGHT: 45'
MIN. LOT WIDTH: 60'

RECEIVING WATERS; SLAB CABIN RUN
CHAPTER 93; CWF, MF EXISTING: HQ-CWF, MF (PFBC)
WETLANDS DESIGNATION: NOT PRESENT ON SITE
SEWAGE DISPOSAL: UNIVERSITY AREA JOINT AUTHORITY
WATER SOURCE: STATE COLLEGE BOROUGH WATER AUTHORITY

GFA AND PERCENT IMPERVIOUS DETERMINATION

COVER CALCULATION	SQUARE FOOTAGE			% LOT COVERAGE	
	EXISTING	PROPOSED	TOTAL	ALLOWABLE	TOTAL	ALLOWABLE
BUILDING COVERAGE	19,335	14,838	34,173	XXXX	3.14%	XXXX
TOTAL IMPERVIOUS COVER	120,443	18,857	139,300	381,302	12.79%	36.53%

PROJECT NARRATIVE

SALVATION BAPTIST CHURCH, AKA RUSSIAN CHURCH OF CHRIST, HAS OPERATED A CHURCH AT 3645 WEST COLLEGE AVENUE SINCE 2003. AT THE TIME OF THE ORIGINAL LAND DEVELOPMENT PLAN, A FELLOWSHIP HALL WAS SHOWN NEXT TO THE CHURCH, BUT THE BUILDING WAS NEVER CONSTRUCTED, SINCE IT HAS BEEN MORE THAT 5-YEARS SINCE THE LAST APPROVED LAND DEVELOPMENT PLAN, THIS LAND DEVELOPMENT PLAN UPDATE IS REQUIRED. A STORMWATER MANAGEMENT PLAN HAS BEEN INCLUDED SINCE NEW FACILITIES WERE NEEDED TO MEET CURRENT PADEP WATER QUALITY REQUIREMENTS. THERE WILL BE NO CHANGE TO THE EXTERIOR LIGHTING EXCEPT FOR SHIELDED LUMINAIRES AT THE DOORS OF THE PROPOSED BUILDINGS, CONSEQUENTLY NO REVISED LIGHTING PLAN IS INCLUDED, IN ADDITION, NO NEW LANDSCAPE PLANTING IS PROPOSED EXCEPT LANDSCAPING NEXT TO THE BUILDINGS, SO NO LANDSCAPE PLAN IS INCLUDED. A VARIANCE FROM BUFFER YARD REQUIREMENTS WAS GRANTED TO THE CHURCH IN 2005 BY THE ZONING HEARING BOARD, AS PART OF THIS UPDATE, THE CHURCH REQUESTS THAT THE VARIANCE BE EXTENDED.

PARKING FOR THE CHURCH WAS ADDRESSED DURING THE ORIGINAL PLANNING, TWO HUNDRED TWENTY-FIVE SPACES ARE PROVIDED WITH TWELVE HANDI-CAPPED SPACES ARE PROVIDED, A TOTAL OF 223 SPACES ARE PROVIDED, 12 HANDICAPPED AND 213 REGULAR SPACES.

TEMPORARY AND PERMANENT BIKE PARKING IS ALSO INCLUDED PER THE ORDINANCE.

WORK PROPOSED AT THE SITE IN THIS UPDATE INCLUDE A FELLOWSHIP HALL AND A NEW GARAGE TOTALING 13,626-SF OF BUILDING COVERAGE. THE STRUCTURES ARE TO BE BUILT DURING 2022 AND 2023, AN NPDES PERMIT FOR DISCHARGE OF RUNOFF FROM CONSTRUCTION ACTIVITIES HAS BEEN APPLIED FOR, THIS PERMIT INCLUDES EROSION AND SEDIMENTATION CONTROL AND STORMWATER MANAGEMENT PLANS, THE SITE IS CURRENTLY SERVED BY UAJA FOR SEWAGE AND SCBWA FOR WATER.

Soil Characteristics and Limitations

Map Key	Name	Slope (%)	Hydrologic Soil Group	Depth to Restricting Layer (In)	Depth to Bedrock (In)	Depth to Seasonal Water (In)
HaA	Hagerstown silt loam	0–3	B	43–98	43–98	>80
HaB		3–8				
No	Nolin silt loam	0–5	B	72–99	72–99	>80
OhB	Opequan–Hagerstown complex	3–8	D	12–20	12–20	>80
OhC		8–15				
OxD	Opequon Rock outcrop	0–5	D	10–19	10–19	36–72

NOTES:

1. EXISTING CONDITIONS PROVIDED ON THIS PLAN ARE BASED ON A SURVEY BY GREGORY A. SHUFRAN, PLS DATED 2005, TOPOGRAPHY IS BASED ON PA LIDAR DATA DATED 2008, THE SEWER LINE BUILT ACROSS THE PROPERTY TO THE HARNER PROPERTY LOCATION WAS PROVIDED BY UNI-TECH, INC. BASED ON AS-BUILT DRAWINGS.
2. THE FOLLOWING FEATURES ARE NOT PRESENT IN THE IMMEDIATE VICINITY OF THE PROPOSED DISTURBED AREA: SINKHOLES AND RAILROADS.
3. ALL PROPOSED DEVELOPMENT IS TO REMAIN PRIVATE PROPERTY.
4. THE FOLLOWING ITEMS REQUIRED FOR PRELIMINARY AND FINAL PLANS ARE NOT APPLICABLE TO THIS PROJECT; WALKWAYS BETWEEN LOTS, STREET LIGHTS, PUBLIC USE LANDS AND INSTALLED MONUMENTS.
5. THE LANDSCAPE PLAN DOES NOT CHANGE WITH THIS UPDATE AND A LANDSCAPE PLAN IS NOT INCLUDED IN THIS SUBMISSION.
6. THE LIGHTING PLAN DOES NOT CHANGE WITH THIS UPDATE AND A LIGHTING PLAN IS NOT INCLUDED IN THIS SUBMISSION. THE LIGHT INTENSITY FOR THE VOLLEYBALL COURT LIGHTS WAS MEASURED AT THE NEARBY PROPERTY BOUNDARY IN 2018 AND FOUND TO BE MUCH BELOW THE LEVEL REQUIRED BY THE TOWNSHIP.
7. NO TREES OR SHRUBS SHALL BE PLANTED IN THE STORMWATER MANAGEMENT AREAS UNLESS APPROVED BY THE TOWNSHIP. TREES AND SHRUBS WHICH VOLUNTEER IN THESE AREAS SHALL BE REMOVED AS QUICKLY AS POSSIBLE.
8. THE FELLOWSHIP HALL SHALL PROVIDE FIRE SUPPRESSION BY SPRINKLER SYSLEM SIMILAR TO THE SYSTEM PROVIDED IN THE EXISTING CHURCH, THE FELLOWSHIP HALL SHALL PROVIDE A SEPARATE SCBWA WATER TAP FOR THE FIRE SUPPRESSION. A STAND PIPE CONNECTION SHALL BE PROVIDED FOR FIRE DEPARTMENT CONNECTION TO THE SPRINKLER SYSTEM.
9. ON AUGUST 16, 2005, THE FERGUSON TOWNSHIP ZONING HEARING BOARD APPROVED A VARIANCE FROM THE BUFFER YARD REQUIREMENT IN THE CORRIDOR OVERLAY DISTRICT AND BUFFER YARD ORDINANCES, AS PART OF THIS SUBMISSION, SALVATION BAPTIST CHURCH REQUESTS AN EXTENSION OF THAT VARIANCE.
10. THERE ARE NO ACTIVE SINKHOLES, ON THE PROPERTY.
11. THE DRAINAGEWAY THAT BISECTS THE PROPERTY NORTH TO SOUTH IS SHOWN BY THE FEMA FLOODPLAIN AND EXISTING CONTOUR LINES AND IS IN CLOSE PROXIMITY TO THE UAJA SEWER MAIN, IT IS NOT SHOWN BY A STREAM SYMBOL BECAUSE IT IS AN EPHEMERAL STREAM, ONLY FLOWING DURING EXTREME PRECIPITATION EVENTS.
12. TREES WITH GREATER THAN 6-IN. CALIPER ARE NUMBERED ON THE PLAN, EACH OF THOSE TREES IS IDENTIFIED ON THE TREE SURVEY AND PROTECTION PLAN (TP-1). THERE ARE NO TREES WITHIN THE STREET RIGHT-OF-WAY.
13. ADA IDENTIFIED FACILITIES SHALL CONFORM TO THE AMERICANS WITH DISABILITIES ACT AND THE MOST RECENT PUBLISHED STANDARDS.
14. ALL PARKING AND LOADING AREAS ARE SURFACED WITH ASPHALT OR CONCRETE WITH NO SLIP SURFACE. NO NEW PAVEMENT IS PROPOSED FOR THIS UPDATE.
15. ON SEPTEMBER 26, 2017, THE FERGUSON TOWNSHIP ZONING HEARING BOARD APPROVED A VARIANCE FROM THE FLOODPLAIN REGULATIONS AND 50 FOOT RIPARIAN BUFFER IN ORDER TO ESTABLISH A DRIVEWAY WITH CULVERTS THAT CROSS THE FLOODPLAIN TO THE BACK HALF OF THE PROPERTY AND TO ESTABLISH A VOLLEYBALL COURT WITH LIGHT STANDARDS WITHIN THE FLOODPLAIN, THE VARIANCE INCLUDED A REQUIREMENT TO OBTAIN A WATERWAYS ENCROACHMENT PERMIT FOR THE DRIVEWAY CROSSING. GP#07414219-003 WAS ISSUED BY THE CENTRE COUNTY CONSERVATION DISTRICT JULY 2, 2019.
16. A HIGHWAY OCCUPANCY PERMIT IS REQUIRED PURSUANT TO SECTION 420 OF THE ACT OF JUNE 1, 1945 (P.L. 1242, NO. 428), KNOWN AS THE "STATE HIGHWAY LAW", BEFORE DRIVEWAY ACCESS TO THE STATE HIGHWAY IS PERMITTED.
17. THE FLOODPLAIN LIMITS SHOWN ON THIS PLAN WERE DETERMINED BASED ON ELEVATIONS ESTABLISHED BY A DETAILED STUDY CONDUCTED IN 2017 DURING THE ZONING HEARING BOARD REVIEW FOR DEVELOPMENT WITHIN THE FLOODPLAIN. (SEE ITEM 15).
18. THE RIPARIAN ZONE SHOWN ON THE PLAN IS BASED ON SEC. 27-213 RIPARIAN BUFFER ZONE DISTRICT DEFINITION OF 100-FEET ON EITHER SIDE OF A STREAM. SINCE THE EXISTING SWALE HAS NO DEFINED BED AND BANKS AND DOES NOT FLOW EXCEPT DURING STORM EVENTS, THE RIPARIAN ZONE IS SHOWN AS 100-FEET ON EITHER SIDE OF THE CENTERLINE OF THE SWALE.
19. THE SWALE RUNNING THROUGH THE PROPERTY WAS DESIGNATED BY PADEP AS NON-JUSSDICTIONAL WATER IN A WATER OBSTRUCTION AND INSPECTION REPORT DATED 02/27/2022.

BUILDING ADDRESSES:

STREET ADDRESS 3645 WEST COLLEGE AVENUE

BUILDING IDENTIFIERS:
A - CHURCH
B - FELLOWSHIP HALL
C - GARAGE BUILDING #1
D - GARAGE BUILDING #2

EACH BUILDING SHALL HAVE THE BUILDING ID AFIXED TO AN EXTERIOR WALL FACING THE PARKING LOT, LETTERS SHALL BE 6" TALL OR LARGER. LETTERING SHALL BE IN THE FORM "3645 A."

PARKING SPACE CALCULATIONS

SECTION 22-502.I.B.4.D: 1 SPACES SEATS X 550 SEATS = 194-SPACES
HANDICAPPED SPACES, 1 PER 25 SPACES = 8-SPACES

REQUIRED SPACES: 176 REGULAR PLUS 8 HANDICAPPED = 184 TOTAL SPACES

NUMBER PROVIDED: 211 REGULAR PLUS 12 HANDICAPPED = 223 TOTAL SPACES

THE CAPACITY OF THE SANCTUARY (550 SEATS) FOR THIS CALCULATION IS BASED ON THE VALUE ESTABLISHED BY CENTRE REGION CODE ENFORCEMENT IN A LETTER FROM ROB WAGNER TO JEFF RESSLER DATED SEPTEMBER 2, 2003.

BICYCLE SPACE CALCULATIONS

SECTION 22-502I2; TEMPORARY SPACES,2% X 550 SEATS = 11-SPACES
PERMANENT SPACES, 1 PER 20 EMPLOYEES, NEED 1 SPACE

REQUIRED SPACES: 11 TEMPORARY PLUS 1 PERMANENT = 12 TOTAL SPACES

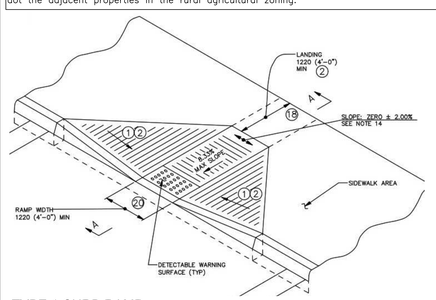
NUMBER PROVIDED: 16 TEMPORARY PLUS 1 PERMANENT = 17 TOTAL SPACES

ONE 16-BIKE RACK WILL BE PROVIDED IN THE PARKING LOT, ELIMINATING TWO PRIOR AUTO PARKING SPACES, THE EMPLOYEE PERMANENT PARKING SPACE WILL BE PROVIDED ON THE BACK COVERED PORCH AREA OF THE FELLOWSHIP HALL.

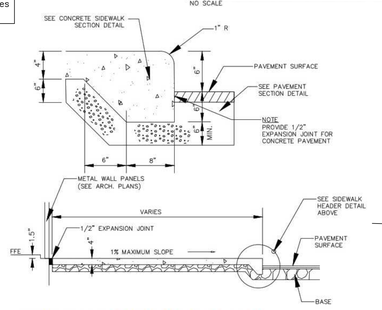
THE CAPACITY OF THE SANCTUARY (550 SEATS) FOR THIS CALCULATION IS BASED ON THE VALUE ESTABLISHED BY CENTRE REGION CODE ENFORCEMENT IN A LETTER FROM ROB WAGNER TO JEFF RESSLER DATED SEPTEMBER 2, 2003.

Historical Property Land Use

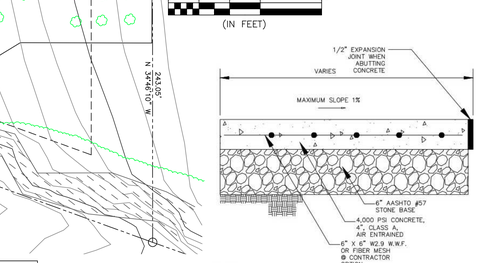
All lands on the property as well as the adjacent surrounding properties, have been historically utilized for agricultural purposes. This property has been used as a church property since the existing church was constructed in 2003. Historic and new residences dot the adjacent properties in the rural agricultural zoning.



TYPE 1 CURB RAMP
NO SCALE

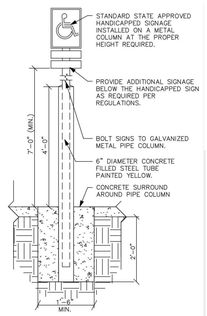


CONCRETE SIDEWALK HEADER DETAIL
NO SCALE



NOTES
1. CONCRETE SIDEWALK TO BE SCORED 5' O.C.
2. SEE DETAIL FOR SIDEWALK HEADER.

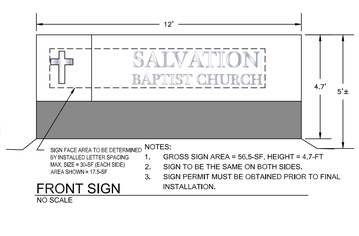
CONCRETE SIDEWALK SECTION DETAIL
NO SCALE



ACCESSIBLE SIGNAGE DETAIL
NO SCALE

NOTE: PROVIDE PERMANENT MOUNT TO SIDE OF BUILDING

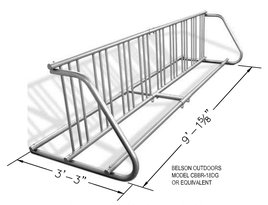
ACCESSIBLE PARKING SIGNS
NO SCALE



SIGN FACE AREA TO BE DETERMINED BY INSTALLED LETTER SPACING MAX. SIZE = 30-SF (EACH SIDE) AREA SHOWN = 17.5-SF

NOTES:
1. GROSS SIGN AREA = 56.5-SF, HEIGHT = 4.7-FT
2. SIGN TO BE THE SAME ON BOTH SIDES.
3. SIGN PERMIT MUST BE OBTAINED PRIOR TO FINAL INSTALLATION.

FRONT SIGN
NO SCALE



BELSON OUTDOORS MODEL CS609-10DG OR EQUIVALENT

16 BIKE BICYCLE RACK
NO SCALE

LICHTY ENGINEERING
697 Berkshire Drive
State College, PA 16803
(814)230-1141
Lichty.Engineering@comcast.net

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL
JOSEPH EDWARD LICHTY
ENGINEER
029837-E

DRAWN BY: JEL
02/08/2022

SOURCE: Survey

REVISIONS
01/06/2022
09/08/2022
10/13/2022
10/19/2022

SCALE: 1"=50'

ORIGINAL DATE OF ZONING PERMIT APPLICATION
02/09/2022

Salvation Baptist Church
3645 West College Ave - Ferguson Twp - Centre Co - PA

LAND DEVELOPMENT PLAN UPDATE
LAND DEVELOPMENT PLAN

LD-2

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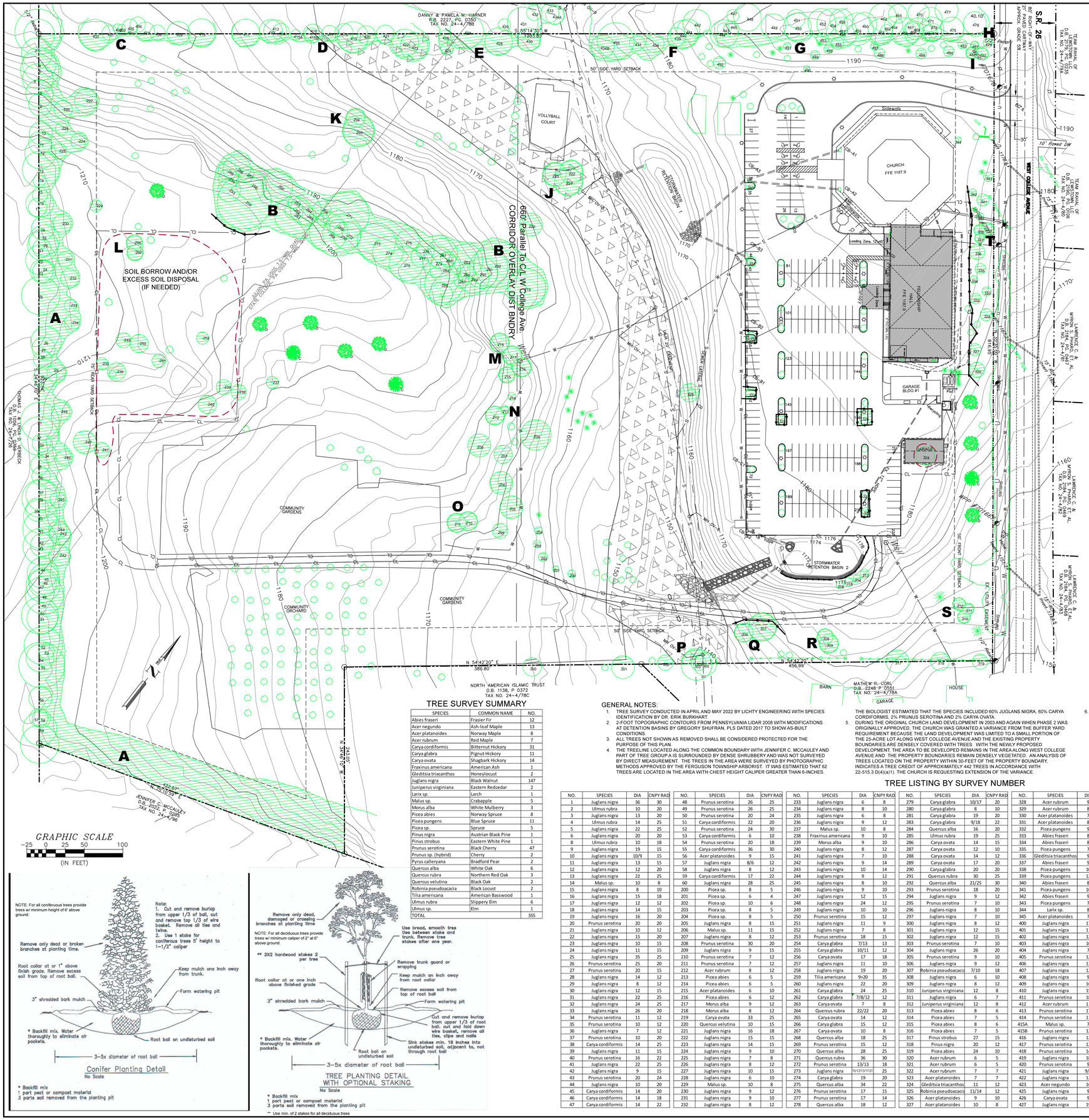


LEGEND

- EXISTING CONTOURS
- FINISHED CONTOURS
- CONSTRUCTION WORK LIMIT
- EX. TREE W/ 6" OR GREATER CALIPER
- INDIVIDUAL CANOPY CALCULATION TREE
- TREE GROUP CANOPY LIMITS
- EX. TREE W/ <6" CALIPER
- EXISTING TREES TO BE REMOVED
- TREE PROTECTION FENCE
- TREES TO BE PLANTED
- FEMA FLOOD BOUNDARY
- SEWER AND EASEMENTS
- WATER LINE
- UTILITY LINE/POLL
- PROPERTY BOUNDARY
- RIGHT OF WAY
- SETBACK LINE
- PROPOSED NEW CONSTRUCTION

TREE PLANTING LIST	
DECIDUOUS (D)	CONIFER (C)
Acer plamatum cv. – Jananese Maple	Abies fraseri – Frasier Fir
Acer rubrum – Red Maple	Picea abies – Norway Spruce
Quercus albe – White Oak	Picea pungens var. glauea – Blue Colorado Spruce
Quercus rubra – Red Oak	Pinus strobus – Eastern White Pine

Select species for planting from this list for trees to be planted as identified on the plan. Any deviation from this list must be reviewed and approved by the Ferguson Township Arborist.

TEMPORARY TREE PROTECTION FENCE

GENERAL NOTES:

1. TREE SURVEY CONDUCTED IN APRIL AND MAY 2022 BY LICHTY ENGINEERING WITH SPECIES IDENTIFICATION BY DR. ERIK BURKHART.
2. 2-FOOT TOPOGRAPHIC CONTOURS FROM PENNSYLVANIA LIDAR 2008 WITH MODIFICATIONS AT DETENTION BASINS BY GREGORY SHUFRAN, PLS DATED 2017 TO SHOW AS-BUILT CONDITIONS.
3. ALL TREES NOT SHOWN AS REMOVED SHALL BE CONSIDERED PROTECTED FOR THE PURPOSE OF THIS PLAN.
4. THE TREELINE LOCATED ALONG THE COMMON BOUNDARY WITH JENNIFER C. MCCAULEY AND PART OF TREE GROUP A IS SURROUNDED BY DENSE SHRUBBERY AND WAS NOT SURVEYED BY DIRECT MEASUREMENT. THE TREES IN THE AREA WERE SURVEYED BY PHOTOGRAPHIC METHODS APPROVED BY THE FERGUSON TOWNSHIP ARBORIST. IT WAS ESTIMATED THAT 62 TREES ARE LOCATED IN THE AREA WITH CHEST HEIGHT CALIPER GREATER THAN 6-INCHES. THE BIOLOGIST ESTIMATED THAT THE SPECIES INCLUDED 60% JUGLANS NIGRA, 60% CARYA CORDIFORMIS, 2% PRUNUS SEROTINA AND 2% CARYA OVATA.
5. DURING THE ORIGINAL CHURCH LAND DEVELOPMENT IN 2003 AND AGAIN WHEN PHASE 2 WAS ORIGINALLY APPROVED, THE CHURCH WAS GRANTED A VARIANCE FROM THE BUFFER YARD REQUIREMENT BECAUSE THE LAND DEVELOPMENT WAS LIMITED TO A SMALL PORTION OF THE 25-ACRE LOT ALONG WEST COLLEGE AVENUE AND THE EXISTING PROPERTY BOUNDARIES ARE DENSELY COVERED WITH TREES. WITH THE NEWLY PROPOSED DEVELOPMENT, THE AREA TO BE DEVELOPED REMAINS IN THE AREA ALONG WEST COLLEGE AVENUE AND THE PROPERTY BOUNDARIES REMAIN DENSELY VEGETATED. AN ANALYSIS OF TREES LOCATED ON THE PROPERTY WITHIN 30-FEET OF THE PROPERTY BOUNDARY, INDICATES A TREE CREDIT OF APPROXIMATELY 442 TREES IN ACCORDANCE WITH 22-515.3.D(4)(a)1). THE CHURCH IS REQUESTING EXTENSION OF THE VARIANCE.
6. LESS THAN 4% OF THE TREE CANOPY ON THE SITE WILL BE IMPACTED BY THE PROPOSED CONSTRUCTION AND EARTH BORROW AND DISPOSAL SITE, A TOTAL OF THIRTEEN TREES. THIS TREE PRESERVATION PLAN PROPOSES PLANTING THIRTEEN NEW TREES TO BALANCE THE LOSS. THE LOCATION OF THE NEW TREES IS SHOWN ON THE PLAN AND INCLUDES TEN DECIDUOUS TREES AND THREE CONIFEROUS TREES. THE TREES PLANTED TREES MUST BE ON THE CURRENT OFFICIAL FERGUSON TOWNSHIP TREE LIST.

TREE SURVEY SUMMARY

SPECIES	COMMON NAME	NO.
Abies fraseri	Frasier Fir	12
Acer negundo	Ash-leaf Maple	13
Acer platanoides	Norway Maple	8
Acer rubrum	Red Maple	7
Carya cordiformis	Bitternut Hickory	31
Carya glabra	Pignut Hickory	11
Carya ovata	Shagbark Hickory	14
Fraxinus americana	American Ash	1
Gleditsia triacanthos	Honeylocust	2
Juglans nigra	Black Walnut	147
Juniperus virginiana	Eastern Redcedar	2
Larix sp.	Larch	1
Malus sp.	Crabapple	5
Morus alba	White Mulberry	3
Picea abies	Norway Spruce	8
Picea pungens	Blue Spruce	11
Picea sp.	Spruce	5
Pinus nigra	Austrian Black Pine	1
Pinus strobus	Eastern White Pine	1
Prunus serotina	Black Cherry	47
Prunus sp. (hybrid)	Cherry	2
Pyrus calleryana	Bradford Pear	2
Quercus alba	White Oak	6
Quercus rubra	Northern Red Oak	3
Quercus velutina	Black Oak	2
Robinia pseudoacacia	Black Locust	2
Tilia americana	American Basswood	1
Ulmus rubra	Slippery Elm	6
Ulmus sp.	Elm	1
TOTAL		355

TREE LISTING BY SURVEY NUMBER

NO.	SPECIES	DIA	CNPY RAD
1	Juglans nigra	36	30
2	Ulmus rubra	10	20
3	Juglans nigra	13	20
4	Ulmus rubra	14	25
5	Juglans nigra	22	25
6	Juglans nigra	20	20
8	Ulmus rubra	10	18
9	Juglans nigra	19	15
10	Juglans nigra	10/9	15
11	Juglans nigra	13	15
12	Juglans nigra	12	20
13	Juglans nigra	22	25
14	Malus sp.	10	8
15	Juglans nigra	8	10
16	Juglans nigra	15	18
17	Juglans nigra	12	12
18	Juglans nigra	14	15
19	Juglans nigra	16	20
20	Prunus serotina	20	20
21	Juglans nigra	10	12
22	Juglans nigra	15	20
23	Juglans nigra	10	15
24	Juglans nigra	11	15
25	Juglans nigra	35	25
26	Prunus serotina	25	20
27	Prunus serotina	20	15
28	Juglans nigra	14	12
29	Juglans nigra	8	12
30	Juglans nigra	12	15
31	Juglans nigra	22	25
32	Juglans nigra	24	25
33	Juglans nigra	26	20
34	Prunus serotina	11	12
35	Prunus serotina	10	12
36	Juglans nigra	7	12
37	Prunus serotina	10	20
38	Carya cordiformis	14	25
39	Juglans nigra	11	15
40	Prunus serotina	16	22
41	Juglans nigra	22	25
42	Juglans nigra	9	15
43	Prunus serotina	20	24
44	Juglans nigra	10	20
45	Carya cordiformis	14	20
46	Carya cordiformis	14	18
47	Carya cordiformis	14	22
48	Prunus serotina	26	25
49	Prunus serotina	26	25
50	Prunus serotina	20	24
51	Carya cordiformis	22	20
52	Prunus serotina	24	30
53	Carya cordiformis	6	10
54	Prunus serotina	20	18
55	Carya cordiformis	36	30
56	Acer platanoides	9	15
57	Juglans nigra	8/6	12
58	Juglans nigra	8	12
59	Carya cordiformis	17	22
60	Juglans nigra	28	25
200	Picea sp.	8	5
201	Picea sp.	6	4
202	Picea sp.	10	6
203	Picea sp.	8	5
204	Picea sp.	8	5
205	Juglans nigra	8	15
206	Malus sp.	11	15
207	Juglans nigra	8	12
208	Prunus serotina	30	20
209	Juglans nigra	9	15
210	Prunus serotina	7	12
211	Prunus serotina	7	12
212	Acer rubrum	8	12
213	Picea abies	6	5
214	Picea abies	6	5
215	Acer platanoides	6	10
216	Picea abies	6	12
217	Morus alba	9	12
218	Morus alba	8	12
219	Carya ovata	33	25
220	Quercus velutina	10	15
221	Juglans nigra	16	18
222	Juglans nigra	15	15
223	Juglans nigra	14	15
224	Juglans nigra	9	10
225	Juglans nigra	7	8
226	Juglans nigra	8	12
227	Juglans nigra	10	15
228	Juglans nigra	6	10
229	Malus sp.	10	8
230	Juglans nigra	9	12
231	Juglans nigra	9	10
232	Juglans nigra	8	12
233	Juglans nigra	6	8
234	Juglans nigra	8	10
235	Juglans nigra	6	8
236	Juglans nigra	9	12
237	Malus sp.	10	8
238	Fraxinus americana	9	10
239	Morus alba	9	10
240	Juglans nigra	8	12
241	Juglans nigra	7	10
242	Juglans nigra	9	14
243	Juglans nigra	10	14
244	Juglans nigra	9	12
245	Juglans nigra	8	10
246	Juglans nigra	9	10
247	Juglans nigra	12	15
248	Juglans nigra	24	12
249	Juglans nigra	10	10
250	Prunus serotina	15	12
251	Juglans nigra	11	9
252	Juglans nigra	7	8
253	Prunus serotina	18	15
254	Carya glabra	7/13	13
255	Carya glabra	10/11	12
256	Carya ovata	17	18
257	Juglans nigra	11	10
258	Juglans nigra	19	20
259	Tilia americana	9>20	35
260	Juglans nigra	22	20
261	Carya glabra	24	25
262	Carya glabra	7/8/12	12
263	Carya ovata	7	8
264	Quercus rubra	22/22	20
265	Carya ovata	14	12
266	Carya glabra	15	12
267	Carya ovata	10	8
268	Quercus alba	18	25
269	Prunus serotina	15	12
270	Quercus alba	28	25
271	Quercus rubra	36	30
272	Prunus serotina	13/13	18
273	Juglans nigra	10/12/13/17/21	25
274	Carya glabra	19	20
275	Quercus alba	34	22
276	Prunus serotina	17	15
277	Prunus serotina	17	14
278	Quercus alba	18	12
279	Carya glabra	10/17	20
280	Carya glabra	8	10
281	Carya glabra	19	20
283	Carya glabra	9/18	22
284	Quercus alba	16	20
285	Ulmus rubra	19	25
286	Carya ovata	14	15
287	Carya ovata	12	10
288	Carya ovata	14	12
289	Carya ovata	17	20
290	Carya glabra	20	20
291	Quercus rubra	30	25
292	Quercus alba	21/25	30
293	Prunus serotina	18	20
294	Juglans nigra	9	12
295	Prunus serotina	7	10
296	Juglans nigra	8	10
297	Juglans nigra	7	10
300	Juglans nigra	8	12
301	Juglans nigra	12	15
302	Juglans nigra	12	15
303	Prunus serotina	7	10
304	Juglans nigra	26	20
305	Prunus serotina	9	10
306	Juglans nigra	9	12
307	Robinia pseudoacacia	7/10	18
308	Juglans nigra	6	10
309	Juglans nigra	8	12
310	Juniperus virginiana	12	8
311	Juglans nigra	6	7
312	Juniperus virginiana	12	8
313	Picea abies	8	6
314	Picea abies	7	5
315	Picea abies	8	6
316	Picea abies	7	5
317	Pinus strobus	27	15
318	Pinus nigra	20	12
319	Picea abies	24	10
320	Acer rubrum	6	5
321	Acer rubrum	6	5
322	Acer rubrum	7	7
323	Acer platanoides	7	7
324	Gleditsia triacanthos	11	12
325	Robinia pseudoacacia	11/14	12
326	Acer platanoides	9	10
327	Acer platanoides	10	8
328	Acer rubrum	9	8
329	Acer rubrum	8	10
330	Acer platanoides	7	7
331	Acer platanoides	8	7
332	Picea pungens	9	7
333	Abies fraseri	8	6
334	Abies fraseri	8	5
335	Picea pungens	7	7
336	Gleditsia triacanthos	9	10
337	Abies fraseri	9	6
338	Picea pungens	10	7
339	Picea pungens	12	8
340	Abies fraseri	8	5
341	Picea pungens	10	8
342	Abies fraseri	9	5
343	Picea pungens	7	6
344	Larix sp.	8	4
345	Acer platanoides	7	6
400	Juglans nigra	17	12
401	Juglans nigra	11	10
402	Juglans nigra	12	6
403	Juglans nigra	10	5
404	Juglans nigra	7	4
405	Prunus serotina	12	10
406	Juglans nigra	13	10
407	Juglans nigra	12	12
408	Juglans nigra	9	10
409	Juglans nigra	16	15
410	Juglans nigra	15	18
411	Prunus serotina	18	18
412	Acer rubrum	11	15
413	Prunus serotina	17	15
414	Prunus serotina	11	11
415A	Malus sp.	7	7
415B	Prunus serotina	12	10
416	Juglans nigra	12	12
417	Prunus serotina	12	10
418	Prunus serotina	14	12
419	Juglans nigra	18	20
420	Prunus serotina	9	12
421	Juglans nigra	9/9	12
422	Juglans nigra	12	18
423	Acer negundo	16	18
425	Juglans nigra	9	8
426	Carya ovata	9	8
427	Juglans nigra	19	22
428	Juglans nigra	13	18
429	Juglans nigra	9	8
430	Carya ovata	16	15
431	Prunus serotina	34	20
432	Carya ovata	9	10
433	Juglans nigra	20	12
434A	Prunus serotina	24	12
434B	Juglans nigra	20	15
435	Juglans nigra	22	24
437	Juglans nigra	9	10
438	Juglans nigra	12	12
439	Ulmus rubra	12	12
440	Juglans nigra	15	18
441	Prunus serotina	21	15
442	Acer negundo	14	18
443	Prunus serotina	13	8
444	Juglans nigra	19	18
445	Ulmus rubra	7	10
447	Juglans nigra	7	8
448	Juglans nigra	14	18
449	Juglans nigra	21	16
450	Juglans nigra	14	18
451	Juglans nigra	9	12
452	Acer negundo	8	18
453	Prunus sp. (hybrid)	9	8
454	Prunus serotina	36	20
455	Prunus sp. (hybrid)	8	8
456	Prunus serotina	20	20
457	Acer negundo	9	8
458	Acer negundo	7/13	15
459	Prunus serotina	19	21
460	Acer negundo	14	16
461	Acer negundo	11	16
462	Acer negundo	7	8
463	Acer negundo	6/13	18
464	Acer negundo	8	12
465	Juglans nigra	7	12
466	Quercus velutina	17	18
467	Prunus serotina	9	8
468	Prunus serotina	17	12
469	Prunus serotina	13	18
470	Acer negundo	9	14
471	Acer negundo	7/8/9/10	20
472	Prunus serotina	16	16
473	Prunus serotina	9	10
474	Acer negundo	10	12
475	Ulmus sp.	16	18
477	Juglans nigra	15	16
478	Carya ovata	11	12
479	Abies fraseri	6	6
480	Picea pungens	9	8
481	Abies fraseri	6	5
482	Picea pungens	8	7
483	Abies fraseri	7	6
484	Picea pungens	8	7
485	Abies fraseri	8	7
486	Abies fraseri	8	7
487	Picea pungens	6	5
488	Abies fraseri	6	6
489	Picea pungens	7	6
490	Pyrus calleryana	8	4
491	Abies fraseri	6	5
492	Pyrus calleryana	7	8
61-122	McCAULEY BOUNDRY TREELINE		
Approx. 62 Trees Counted			
Species:			
37	Juglans nigra	60%	
23	Carya cordiformis	36%	
1	Prunus serotina	2%	
1	Carya ovata	2%	

NOTE: TREES WITH MULTIPLE VALUES FOR DIAMETER HAVE MORE THAN ONE TRUNK.

TREE CANOPY CALCULATIONS

TREE GROUPS	
GROUP	CANOPY (SF)
A	52280
B	32510
C	2060
D	4090
E	2620
F	3640
G	3720
H	50
I	450
J	1720
K	1490
L	590
M	1700
N	510
O	800
P	660
Q	1410
R	620
S	550
T	440
TOTAL	111910
TREES	12180
GRAND TOT	124090
ACRES	2.85

TREES TO BE REMOVED: 235, 236, 238, 239, 240, 241, 249, 250, 251, 252, 324 + GP L (SEE PLAN)	
TOT. CANOPY REMOVED	
SF	4280
ACRES	0.10
% COVER	3.45%

INDIVIDUAL TREES		
TREE NO.	CNPY RAD	CANOPY (SF)
220	15	710
229	8	200
235	8	200
236	12	450
237	8	200
238	10	310
239	10	310
240	12	450
241	10	310
247	15	710
249	10	310
250	12	450
251	9	250
252	8	200
300	P	170
301	P	240
302	P	190
313	6	110
314	5	80
315	6	110
316	5	80
317	P	370
318	P	220
319	P	140
320	5	80
321	5	80
322	7	150
323	7	150
324	12	450
325	12	450
326	10	310
327	8	200
328	8	200
329	10	310
330	7	150
331	7	150
332	7	150
333	6	110
334	5	80
335	7	150
336	10	310
340	5	80
341	8	200
342	5	80
343	6	110
344	4	50
345	6	110
479	6	110
483	6	110
484	7	150
485	7	150
485	7	150
487	5	80
488	6	110
489	6	110
490	4	50
491	5	80
492	8	200
TOTAL		12180

NOTE: For all coniferuous trees provide trees w/ minimum height of 6' above ground.

Note:
1. Cut and remove burlap from upper 1/3 of ball, cut and remove top 1/3 of wire basket. Remove all ties and twine.
2. Use 1 stake for coniferous trees 5' height to 1-1/2" caliper

Conifer Planting Detail

No Scale

* Backfill mix
1 part peat or compost material
3 parts soil removed from the planting pit

NOTE: For all deciduous trees provide trees w/ minimum caliper of 2" at 6" above ground.

TREE PLANTING DETAIL
WITH OPTIONAL STAKING

No Scale

* Backfill mix
1 part peat or compost material
3 parts soil removed from the planting pit

** Use min. of 2 stakes for all deciduous trees

LICHTY ENGINEERING
687 Berkshire Drive
State College, PA 16803
(814)238-1141
Lichty.Engineering@comcast.net

JOSEPH EDWARD LICHTY
ENGINEER
028527-E

DRAWN BY: JEL
05/20/2022

SOURCE:
Survey

REVISED
07/08/2022
09/08/2022

SCALE: 1"=50'

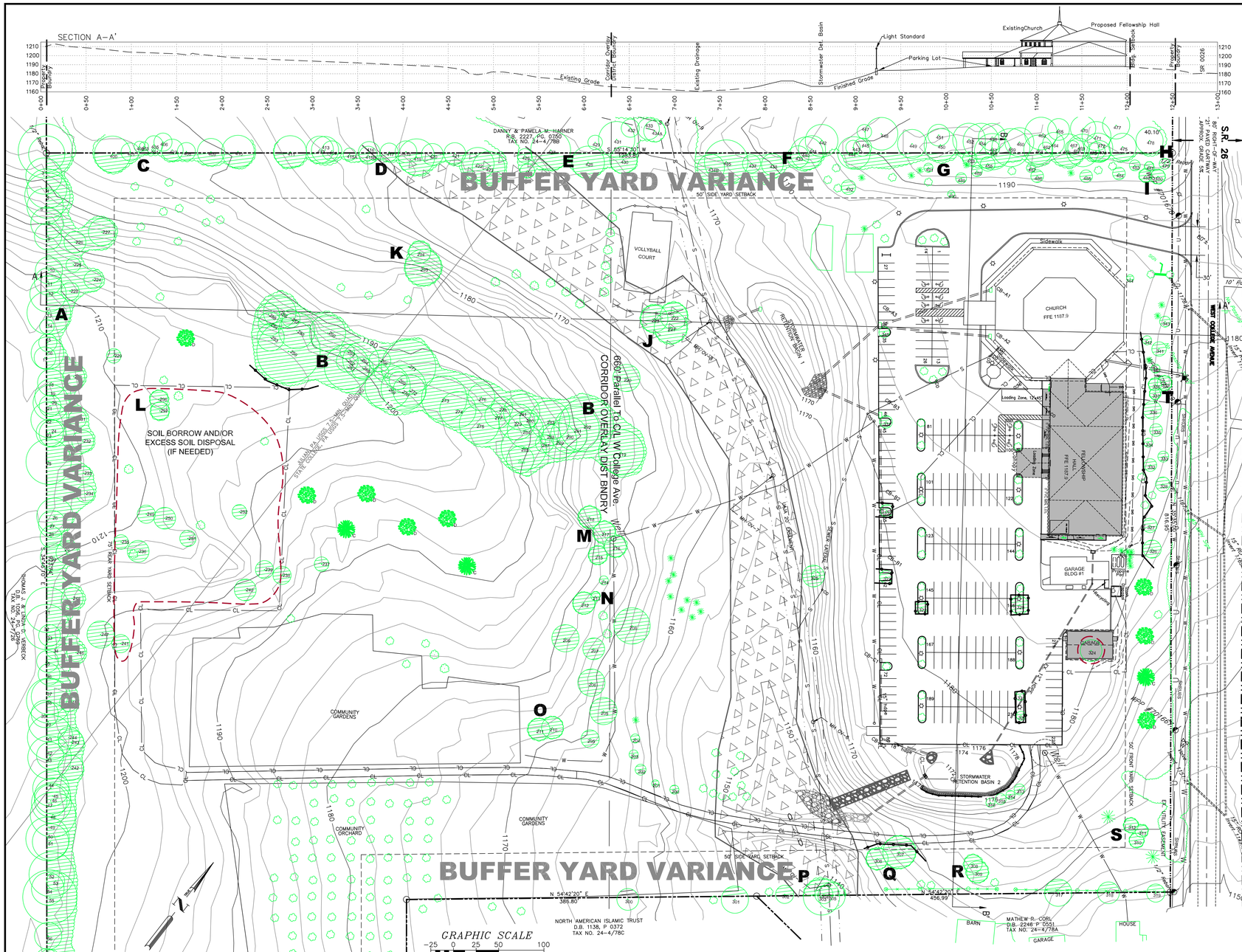
ORIGINAL DATE OF ZONING
PERMIT APPLICATION
02/09/2022

Salvation Baptist Church
3645 West College Ave - Ferguson Twp - Centre Co - PA

LAND DEVELOPMENT PLAN UPDATE
TREE SURVEY AND PROTECTION PLAN

TP-1

3 / 11



LEGEND

- EXISTING CONTOURS
- FINISHED CONTOURS
- CONSTRUCTION WORK LIMIT
- EX. TREE W/ 6" OR GREATER CALIPER
- INDIVIDUAL CANOPY CALCULATION TREE
- TREE GROUP CANOPY LIMITS
- EX. TREE W/ <6" CALIPER
- EXISTING TREES TO BE REMOVED
- TREE PROTECTION FENCE
- TREES TO BE PLANTED
- FEMA FLOOD BOUNDARY
- SEWER AND EASEMENTS
- WATER LINE
- UTILITY LINE/POLL
- PROPERTY BOUNDARY
- RIGHT OF WAY
- SETBACK LINE
- PROPOSED NEW CONSTRUCTION

TREE PLANTING LIST	
DECIDUOUS (D)	CONIFER (C)
Acer plamatum cv. – Japanese Maple	Abies fraseri – Frasier Fir
Acer rubrum – Red Maple	Picea abies – Norway Spruce
Quercus alba – White Oak	Picea pungens var. glauca – Blue Colorado Spruce
Quercus rubra – Red Oak	Pinus strobus – Eastern White Pine

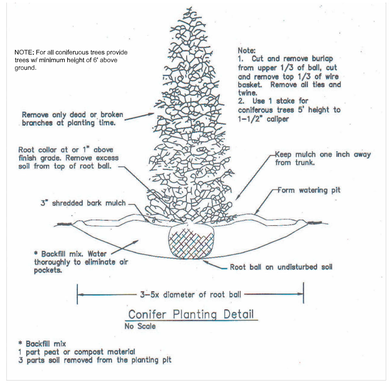
Select species for planting from this list for trees to be planted as identified on the plan. Any deviation from this list must be reviewed and approved by the Ferguson Township Arborist.

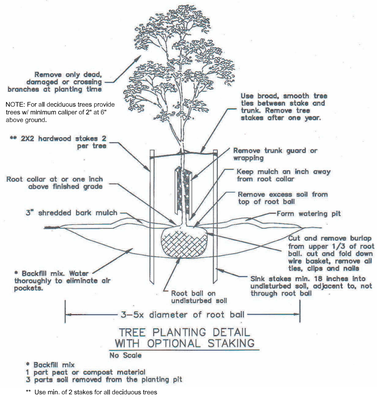
TREE SURVEY SUMMARY

GENERAL NOTES:

1. TREE SURVEY CONDUCTED IN APRIL AND MAY 2022 BY LICHTY ENGINEERING WITH SPECIES IDENTIFICATION BY DR. ERIK BURKHART.
2. 2-FOOT TOPOGRAPHIC CONTOURS FROM PENNSYLVANIA LIDAR 2008 WITH MODIFICATIONS AT DETENTION BASINS BY GREGORY SHUFRAN, PLS DATED 2017 TO SHOW AS-BUILT CONDITIONS.
3. ALL TREES NOT SHOWN AS REMOVED SHALL BE CONSIDERED PROTECTED FOR THE PURPOSE OF THIS PLAN.
4. THE TREELINE LOCATED ALONG THE COMMON BOUNDARY WITH JENNIFER C. MCCAULEY AND PART OF TREE GROUP A IS SURROUNDED BY DENSE SHRUBBERY AND WAS NOT SURVEYED BY DIRECT MEASUREMENT. THE TREES IN THE AREA WERE SURVEYED BY PHOTOGRAPHIC METHODS APPROVED BY THE FERGUSON TOWNSHIP ARBORIST. IT WAS ESTIMATED THAT 62 TREES ARE LOCATED IN THE AREA WITH CHEST HEIGHT CALIPER GREATER THAN 6-INCHES. THE BIOLOGIST ESTIMATED THAT THE SPECIES INCLUDED 60% JUGLANS NIGRA, 60% CARYA CORDIFORMIS, 2% PRUNUS SEROTINA AND 2% CARYA OVATA.
5. DURING THE ORIGINAL CHURCH LAND DEVELOPMENT IN 2003 AND AGAIN WHEN PHASE 2 WAS ORIGINALLY APPROVED, THE CHURCH WAS GRANTED A VARIANCE FROM THE BUFFER YARD REQUIREMENT BECAUSE THE LAND DEVELOPMENT WAS LIMITED TO A SMALL PORTION OF THE 25-ACRE LOT ALONG WEST COLLEGE AVENUE AND THE EXISTING PROPERTY BOUNDARIES ARE DENSELY COVERED WITH TREES. WITH THE NEWLY PROPOSED DEVELOPMENT, THE AREA TO BE DEVELOPED REMAINS IN THE AREA ALONG WEST COLLEGE AVENUE AND THE PROPERTY BOUNDARIES REMAIN DENSELY VEGETATED. AN ANALYSIS OF TREES LOCATED ON THE PROPERTY WITHIN 30-FEET OF THE PROPERTY BOUNDARY, INDICATES A TREE CREDIT OF APPROXIMATELY 442 TREES IN ACCORDANCE WITH 22-515.3.D(4)(a)1), THE CHURCH IS REQUESTING EXTENSION OF THE VARIANCE.
6. LESS THAN 4% OF THE TREE CANOPY ON THE SITE WILL BE IMPACTED BY THE PROPOSED CONSTRUCTION AND EARTH BORROW AND DISPOSAL SITE, A TOTAL OF THIRTEEN TREES. THIS TREE PRESERVATION PLAN PROPOSES PLANTING THIRTEEN NEW TREES TO BALANCE THE LOSS. THE LOCATION OF THE NEW TREES IS SHOWN ON THE PLAN AND INCLUDES TEN DECIDUOUS TREES AND THREE CONIFEROUS TREES. THE TREES PLANTED TREES MUST BE ON THE CURRENT OFFICIAL FERGUSON TOWNSHIP TREE LIST.
7. THE WASTE STORAGE AREA WILL REMAIN ENCLOSED WITHIN A FENCE. THE CHURCH CONTINUES TO MAINTAIN THE FENCE WHICH SHIELDS THE WASTE AREA FROM VIEW.
8. ALL PLANTING SHALL BE IN ACCORDANCE WITH "GUIDE TO PLANTING IN FERGUSON TOWNSHIP" AND DETAILS ON THIS PLAN.
9. NO SUBSTITUTIONS SHALL BE ALLOWED FOR THE SPECIFIED PLANT LIST UNLESS REVIEWED AND APPROVED BY FERGUSON TOWNSHIP.
10. NO TREES OR SHRUBS SHALL BE PLANTED IN THE STORMWATER MANAGEMENT AREAS UNLESS APPROVED BY THE TOWNSHIP.
11. LANDSCAPE PLANTINGS WITHIN 10-FEET OF A STRUCTURE SHALL BE AT THE DISCRESSION OF THE OWNER.
12. NO TREES ARE WITHIN THE WEST COLLEGE AVENUE RIGHT-OF-WAY.

NOTE: FOR INDIVIDUAL TREE IDENTIFICATION, SEE TREE SURVEY AND PROTEXTION PLAN.





ABUTTING PROPERTY OWNERS	
NAME	ADDRESS
Matthew R. Corl	3745 West College Ave., State College, PA 16801
North American Islamic Trust	PO Box, 10185, State College, PA 16805
Jennifer C. McCauley	3795 Shingletown Road, State College, PA 16801
Thomas J. & Linda D. Verbeck	2390 Old Gatesburg Rd., State College, PA 16801
Danny R. & Pamela M. Harner	2191 West Whitehall Road, State College, PA 16801

Required Buffer Yard Plantings

BY ACTION OF THE FERGUSON TOWNSHIP BOARD OF SUPERVISORS ON _____ AND THE ZONING HEARING BOARD ON _____ THIS SITE IS EXEMPT FROM MEETING THE BUFFER YARD REQUIREMENTS SET FORTH IN THE CORRIDOR OVERLAY DISTRICT AND BUFFER YARD ORDINANCES. THE FOLLOWING CONDITIONS ARE ATTACHED TO THIS EXEMPTION:

- EXISTING TREES ALONG THE MCCAULY, GRASSLYN AND HARNER PROPERTY BOUNDARIES SHALL NOT BE DISTURBED WITHOUT TOWNSHIP APPROVAL.
- EXISTING OR FUTURE OCCURRENCE OF RUSSIAN OLIVE OR MULTIFLORA ROSE AT ANY LOCATION ON THE PROPERTY MAY BE REMOVED AND ARE ENCOURAGED TO BE REMOVED BY THE TOWNSHIP BECAUSE THEY ARE INVASIVE FOREIGN SPECIES WHICH ARE NOT A RECOGNIZED TOWNSHIP PLANT MATERIAL.

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697 Berkshire Drive
State College, PA 16803
(814)230-1141
Lichty.Engineering@comcast.net

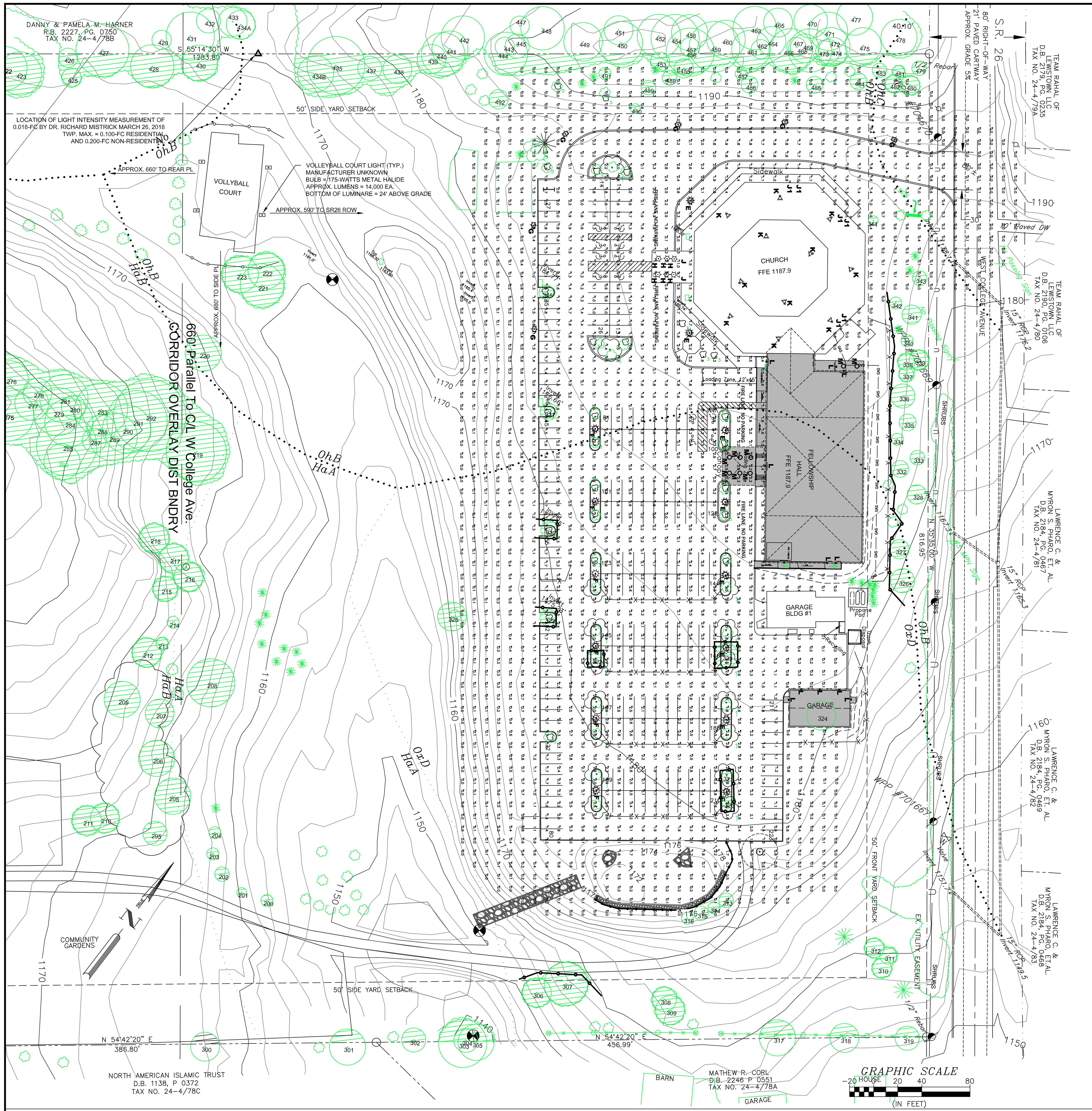
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL JOSEPH EDWARD LICHTY ENGINEER 028527-E

DRAWN BY: JEL 05/26/2022
SOURCE: Survey
REVISIONS 08/09/2022 09/09/2022
SCALE: 1"=50'
ORIGINAL DATE OF ZONING PERMIT APPLICATION 02/09/2022

Salvation Baptist Church
3645 West College Ave - Ferguson Twp - Centre Co - PA

LAND DEVELOPMENT PLAN UPDATE
LANDSCAPE PLAN

LS-1



LEGEND

1180	EXISTING CONTOUR LINES
	FINISHED GRADE CONTOURS
	PROPERTY BOUNDARY
	SETBACK
	PENNDOT CENTERLINE
	ROW/EASEMENT
	POLE LIGHTS - PARKING LOT AND VOLLEYBALL COURT
335	EXISTING TREES AND SHRUBS
	EXISTING TREELINE
	PROPOSED NEW STRUCTURES

2022 NOTES

1. NO NEW EXTERIOR AREA LIGHTING IS PROPOSED IN ADDITION TO APPROVED PHASE 2 LIGHTING. INFORMATION FOR THOSE LIGHTS ARE INCLUDED IN THIS SUBMISSION.
2. ANY NEW EXTERIOR LIGHTS MOUNTED ON BUILDINGS SHALL BE SHIELDED AND SHINE DOWN TO ILLUMINATE THE IMMEDIATE AREA NEXT TO LIGHT. NO SPOT OR FLOOD LIGHTS OR OTHER LIGHTS SHALL BE INSTALLED WHICH SHINE TOWARDS STREETS OR NEIGHBORING LOTS.
3. VOLLEYBALL COURT LIGHTS WERE PERMITTED IN 2018 USING MONITORING OF ACTUAL LIGHT INTENSITY AT THE PROPERTY BOUNDARY. NO NEW LIGHTS ARE PROPOSED IN THIS AREA.
4. ONLY EXTERIOR LUMINARIES ON THE EXTERIOR OF THE TWO NEW BUILDINGS ARE TYPE L EMERGENCY LIGHTS AND TYPE M DOWN MOUNT LED CAN LIGHTS. THE ONLY IMPACT TO THE LIGHTING PLAN IS THE SURFACE DIRECTLY UNDER THE RECESSED LED CANS. SPECIFICATIONS FOR THE TYPE M LIGHTS ARE PROVIDED BELOW.

DESIGN NOTES

1. ALL POLES ARE 22'. FIXTURE IS 17" HIGH.
2. ALL CALCULATIONS ARE TO GRADE
3. LIGHT LEVELS ARE BASED ON MAINTAINED LIGHT OUTPUT.

LUMINAIRE SCHEDULE

Symbol	Label	Qty	Catalog Number	Description	Lamp	File	Lumens	LLF
	E	5	LITHONIA KVF 400M ASYFL TB SPF20 / KW# SSP22-5.0-17-2	SQUARE AREA LIGHT, ASYMMETRIC DISTRIBUTION, FLAT LENS. MOUNTED ON 22' POLE PLUS BASE.	ONE 400-WATT CLEAR BT-37 METAL HALIDE, VERTICAL BASE UP POS.	Ltl9433.ies	36000	0.72
	F	3	LITHONIA KVF 400M SYMFL TB SPF20 / KW# SSP22-5.0-17-2	SQUARE AREA LIGHT, SYMMETRIC DISTRIBUTION, FLAT LENS.MOUNTED ON 22' POLE PLUS BASE.	ONE 400-WATT CLEAR BT-37 METAL HALIDE, VERTICAL BASE UP POS.	Ltl9432.ies	36000	0.72
	G	8	LITHONIA KVF 400M ASYFL EHS TB SPF20 / KW# SSP22-5.0-17-2	SQUARE AREA LIGHT, ASYMMETRIC DISTRIBUTION, FLAT LENS, HOUSE SIDE SHIELD. MOUNTED ON 22' POLE PLUS BASE. SHIELD.	ONE 400-WATT CLEAR BT-37 METAL HALIDE, VERTICAL BASE UP POS.	Ltl9434.ies	36000	0.72
	H	2	LITHONIA 6B3 /6LFS	RECESSED DOWNLIGHT IN CANOPY MOUNTED AT 14' ABOVE GRADE	100PAR/HIR/FL40°	100PAR38_HIR_FL40.ies	2070	1.00
	J	2	HINKLEY 2336	WALL MOUNT INCAND. AREA LIGHT AT 7'-4" ABOVE GRADE	(4) 40w/CANDLE	*	1220	*
	J1	8	HINKLEY 2335	WALL MOUNT INCAND. AREA LIGHT AT 7'-4" ABOVE GRADE	(3) 40w/CANDLE	*	990	*
	K	11	RAD LIGHTING QF200	SURFACE MOUNT BUILD. ILLUMINATING SPOT MTD. ON ROOF SURFACE	ONE 200-WATT HALOGEN	*	3600	*
	L	12	LITHONIA ELACDSH0606	SURFACE MOUNT BUILD. EMERGENCY LIGHTING MTD. ON WALL SURFACE	ONE 8-WATT HALOGEN	*	NOT RATED	*
	M	8	RAD LIGHTING WF6 LL LED 30K 90CRI MW M6	RECESSED DOWNLIGHT ILLUMINATING SPOT MTD. ON CEILING SURFACE	ONE 210-WATT LED	*	1150	*

* NOT AVAILABLE - SEE GENERAL NOTE NO. 2

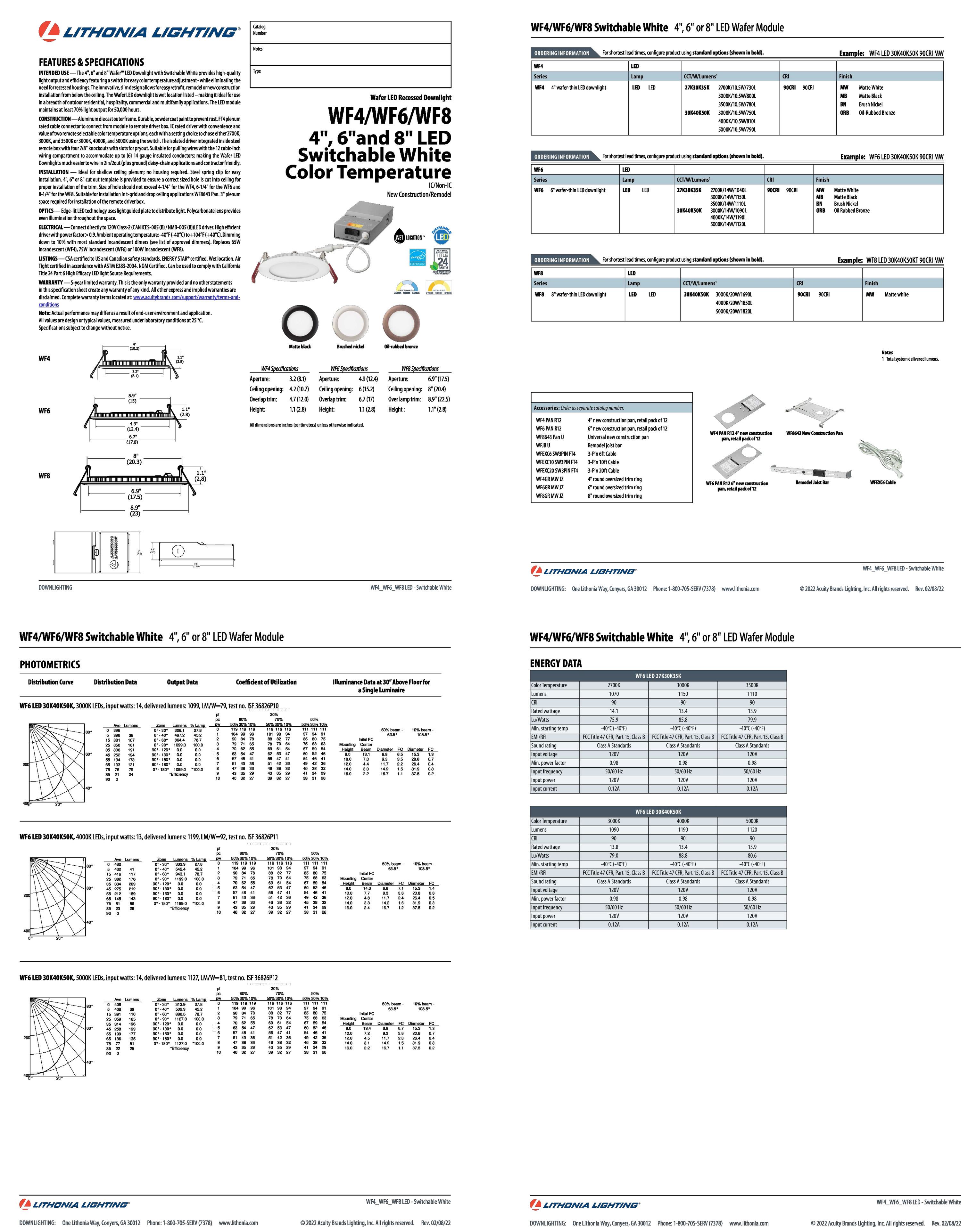
STATISTICS

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
GRID @ GRADE	+	1.0 fc	11.0 fc	0.0 fc	N / A	N / A
ROADWAY	*	1.7 fc	2.6 fc	0.2 fc	13.0:1	8.7:1
PARKING LOT	*	2.0 fc	6.3 fc	0.9 fc	7.0:1	2.3:1

GENERAL NOTES

1. LIGHTING DESIGN AND LIGHT INTENSITY ANALYSIS BY ZANE LEEPER OF LAFACE & MCGOVERN ASSOCIATES, PHONE 412-854-3200 AT THE DIRECTION OF LICHTY ENGINEERING DURING ORIGINAL PHASE 2 PLANNING.
2. EXTERIOR WALL MOUNT FIXTURES FROM HINKLEY LIGHTING DO NOT HAVE AVAILABLE LIGHT INTENSITY FILE AND WERE NOT INCLUDED IN THE ANALYSIS. THE LOW WATTAGE INCANDESCENT FIXTURES WOULD PROVIDE INSIGNIFICENT CHANGES IN THE MODEL EXCEPT IN A SHORT RADIUS FROM THE FIXTURE. THE FIXTURES PROVIDE AREA ILLUMINATION IMMEDIATELY ADJACENT TO DOORS AND BUILDING WALL ILLUMINATION ABOVE DOORS.
3. RAD LIGHTING SURFACE MOUNT SPOTS ARE MOUNTED ON ROOF AND SHINE ONTO BUILDING AND STEEPLE FOR BUILDING ILLUMINATION IN ACCORDANCE WITH SECTION 4.H.4-145 OF THE FERGUSON TOWNSHIP LIGHTING ORDINANCE. BECAUSE OF THEIR MOUNTING LOCATION ON THE ROOF AND ATTITUDE (ONTO THE BUILDING) THE LIGHTS ARE NOT INCLUDED IN THE MODELING ANALYSIS.

SPECIFICATIONS FOR NEW TYPE M EXTERIOR LED CAN LIGHTS



VOLLEYBALL LIGHTS MONITORING REPORT

Richard Mistrick, PhD, PE ***358 McBath St.*** ***State College, PA 16801***

Joe Lichty
Lichty Engineering
687 Berkshire Dr
State College, PA 16803

Dear Joe,

This letter contains a summary of illuminance measurements taken at the neighboring property line alongside the lighted volleyball court at the Russian Baptist Church, which is located at 3645 W. College Avenue in Ferguson Township. A point on the property line that is closest to the court, and which had a direct view to the four installed luminaires was measured. The horizontal illuminance at this point on the ground at the property line was 0.018 fc, which is well below the Ferguson Twp exterior lighting ordinance limit of 0.1 fc for neighboring residential properties and 0.2 fc for non-residential properties.

The Metal Halide luminaires that are installed are designed to emit no light above the horizontal, but in this application they are tilted slightly upward from the horizontal as they are currently mounted on the poles. This slight tilt directs light primarily parallel to the property line and within the church's property, with a small amount above the horizontal plane. Even at the current mounting positions, they may still meet the IES cutoff distribution criteria, but this condition cannot be evaluated without knowledge of the luminaire manufacturer and catalog number. The fact that the terrain slopes upward behind the lighting equipment on both sides of the court further aids in keeping the emitted light in close proximity to the court.

Given the location of the volleyball court, and the low measured illuminance at the property line, it does not appear that these luminaires should be objectionable to any current or future neighbors and recommend that Ferguson Township permit the installation to proceed as installed.

Respectfully submitted,

Richard G. Mistrick, PhD, PE, FIES
Lighting Consultant

VOLLEYBALL LIGHTING NOTES

1. VOLLEYBALL LIGHTS ARE EXISTING AT TIME OF PERMITTING.
2. LIGHTS WERE INSTALLED AFTER DEMOLITION AT ANOTHER SITE.
3. MANUFACTURER OF LUMINARIES IS UNKNOWN.
4. EACH LUMINARY INCLUDES A 175-W METAL HALIDE BULB WITH A POWER RATING OF APPROXIMATELY 14000-LUMINS.
5. THE LIGHT STANDARDS ARE APPROXIMATELY 24-FT ABOVE GRADE OR EL. 1188-FMLS.
6. LIGHT IS DIRECTED TOWARD THE VOLLEYBALL PLAYING SURFACE.
7. IN SITU MEASUREMENT OF LIGHT POWER WAS USED IN LIU OF MODELING SINCE THE MANUFACTURER'S DATA IS UNAVAILABLE AND THE LIGHT ARE ALREADY IN PLACE.
8. MEASUREMENT WAS TAKEN MARCH 26, 2018 BY DR. RICHARD MISTRICK AT THE NEAREST PROPERTY BOUNDARY (APPROXIMATELY 90-FT FROM THE NEAREST LUMINARY).
9. HORIZONTAL LUMINANCE MEASURED AT THE PROPERTY BOUNDARY AFTER FULL WARM-UP OF THE LIGHTS WAS 0.018-FC.
10. FERGUSON TOWNSHIP ORDINANCE *CHAPTER 4 SECTION F: OUTDOOR SPORTS AND RECREATIONAL LIGHTING* REQUIRES THAT LUMINANCE BE LIMITED TO 0.100-FC FOR ADJACENT RESIDENTIAL USES AND 0.200-FC FOR ADJACENT NON-RESIDENTIAL USES.
11. THE LIGHTS AS INSTALLED MEET THIS REQUIREMENT BY A FACTOR OF 5.5 FOR THE MOST STRINGENT RESIDENTIAL STANDARD.

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
JOSEPH EDWARD LICHTY
ENGINEER
028527-E

DRAWN BY: JEL
05/20/2022

SOURCE:
Survey

REVISIONS
09/08/2022

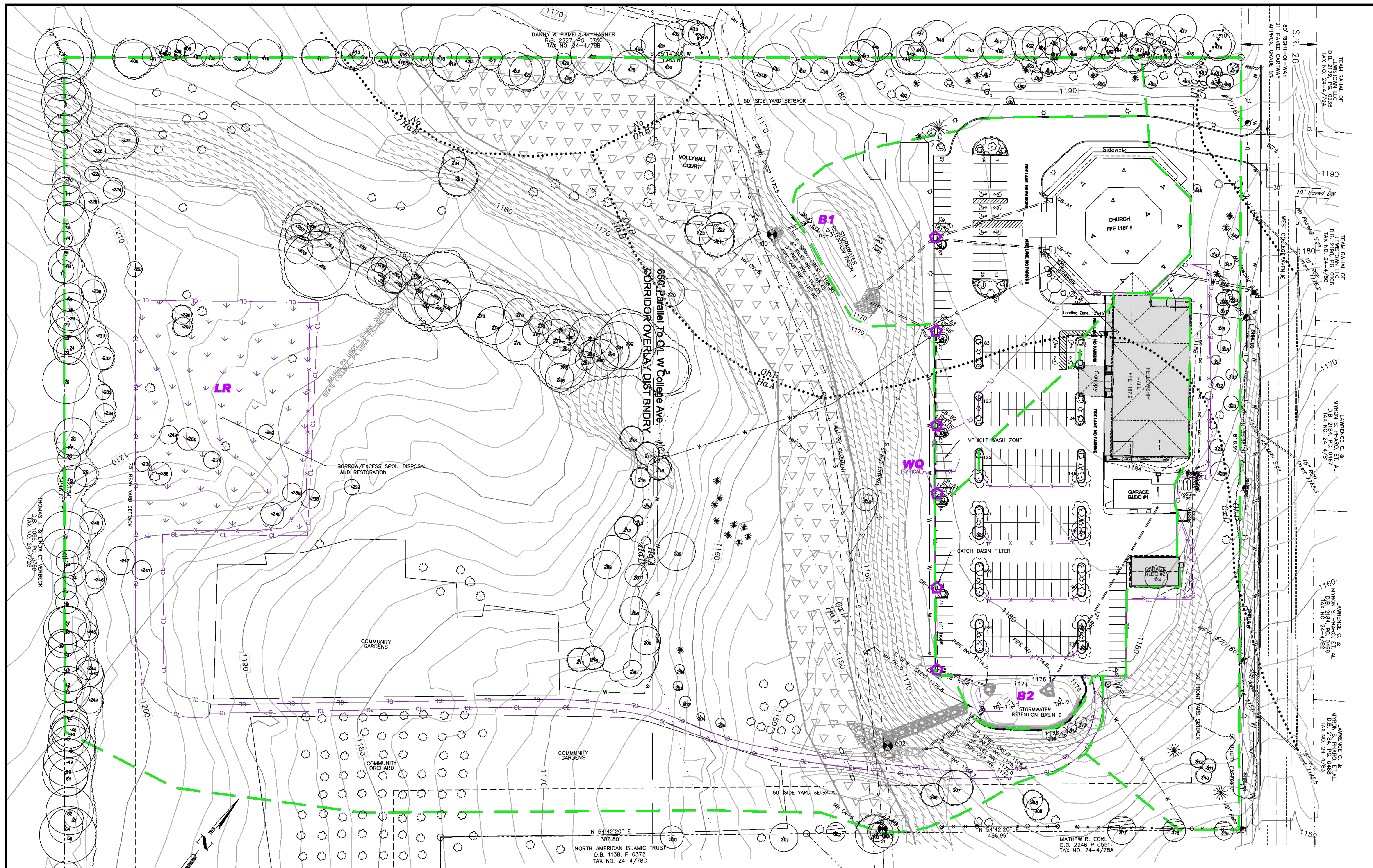
SCALE: 1"=40'

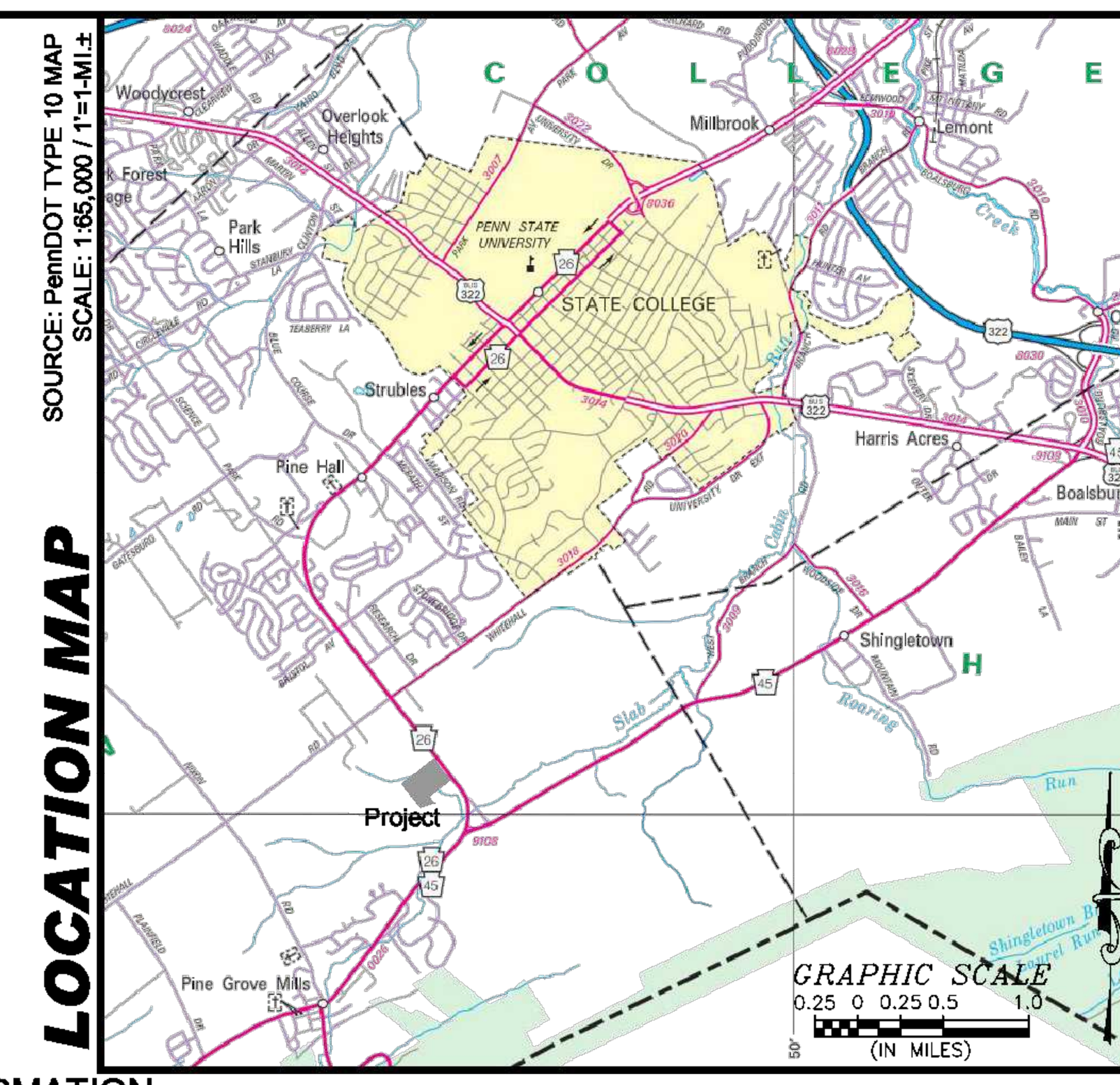
ORIGINAL DATE OF ZONING PERMIT APPLICATION
02/09/2022

Salvation Baptist Church
3645 West College Ave - Ferguson Twp - Centre Co - PA

LAND DEVELOPMENT PLAN UPDATE
LIGHTING PLAN

LT-1





GENERAL INFORMATION

PROPERTY OWNER
RUSSIAN CHURCH OF CHRIST
3465 WEST COLLEGE AVE.
STATE COLLEGE, PA 16803
DEED BOOK 1360, PAGE 00005
TAX PARCEL 24-004-,078-,0000
MUNICIPALITY: FERGUSON TWP. COUNTY: CENTRE
PARCEL/PROJECT AREA: 25.01-AC TOTAL DISTURBED AREA: 3.65-AC
LATITUDE/LONGITUDE (CENTER OF PROPERTY): 40°45'10.21"N 77°52'23.57"W
USGS QUADRANGLE MAP: JULIAN, PA AND STATE COLLEGE, PA
BUILDING COVERAGE
EX. BUILDING COVERAGE: 19,335-SF, 0.444-AC, 1.78%
NEW BUILDING COVERAGE: 15,108-SF, 0.347-AC, 1.39%
PROPOSED TOTAL BUILDING COVERAGE: 34,443-SF,0.791-AC, 3.16%
IMPERVIOUS COVER
EX. IMPERVIOUS COVER: 120,443-SF, 2.765-AC, 11.06%
PROPOSED TOTAL IMPERVIOUS COVER: 139,300-SF, 3.198-AC, 12.79%
EXISTING LAND USE: CHURCH ON AGRICULTURAL LANDS. LAND USE IS TO REMAIN THE SAME AFTER NEW DEVELOPMENT.

TAX ID NUMBER
24-004-,078-,0000-
DEED REFERENCE
RB 1360, P 0005
ZONING INFORMATION
ZONING DISTRICT: RA - RURAL AGRICULTURE WITH CORRIDORE OVERLAY DIST.
MINIMUM SETBACK
FRONT YARD: 50'
REAR YARD: 75'
SIDE YARD: 50'
MAX. BUILDING AREA: 30%
MAX. IMPERVIOUS COVER: 30%
MAX. BUILDING HEIGHT: 45'
MIN. LOT WIDTH: 60'
RECEIVING WATERS: SLAB CABIN RUN
CHAPTER 93: CWF, MF EXISTING: HQ-CWF, MF (PFBC)
WETLANDS DESIGNATION: NOT PRESENT ON SITE
SEWAGE DISPOSAL: UNIVERSITY AREA JOINT AUTHORITY
WATER SOURCE: STATE COLLEGE BOROUGH WATER AUTHORITY

LEGEND

EXISTING CONTOUR LINES
FINISHED GRADE CONTOURS
PROPERTY BOUNDARY
SETBACK
SOIL GROUP BNDY/MAP KEY
UTILITY LINE
SEWER/LATERAL
WATERLINE
GASLINE
ROW/EASEMENT
DRAINAGE BOUNDARY
EXISTING TREES AND SHRUBS
EXISTING TREELINE
FEMA FLOOD BOUNDARY
CONSTRUCTION LIMIT
SOIL TEST HOLE
DISCHARGE POINT
CATCH BASIN WATER QUALITY FILTER
STEEP SLOPES (>25%)
AREA DRAINING TO RAIN GARDEN
LAND RESTORATION
PROPOSED BUILDING 2021

NOTE: FERGUSON TOWNSHIP AND THEIR ASSIGNS ARE AFFORDED EASEMENT TO ALL PARTS OF THE PROPERTY FOR THE PURPOSE OF INSPECTION AND MAINTENANCE OF STORMWATER FACILITIES

Soil Characteristics and Limitations

Map Key	Name	Slope (%)	Hydrologic Soil Group	Depth to Restricting Layer (In)	Depth to Bedrock (In)	Depth to Seasonal Water (In)
HaA	Hagerstown silt loam	0–3	B	43–98	43–98	>80
HaB		3–8				
No	Nolin silt loam	0–5	B	72–99	72–99	>80
OhB	Opequon–Hagerstown complex	3–8	D	12–20	12–20	>80
OhC		8–15				
OxD	Opequon Rock outcrop	0–5	D	10–19	10–19	36–72

Historical Property Land Use

All lands on the property as well as the adjacent surrounding properties, have been historically utilized for agricultural purposes. This property has been used as a church property since the existing church was constructed in 2003. Historic and new residences dot the adjacent properties in the rural agricultural zoning.

Pre- and Post Development Peak Runoff Estimates

Return Period (Years)	Pre-Development* (CFS)	Post Development Undetained (CFS)	Post Development Detained (CFS)	Post Development No Pervious+ (CFS)
1	3.0	10.7	3.1	1.0
2	7.1	15.0	6.5	1.6
10	23.4	31.5	21.3	2.7
50	48.4	56.1	46.1	5.7
100	61.9	69.1	59.8	8.7
100	Clogged Principal Spwy.		50.8	–

* For the purpose of peak runoff analysis, pre-developed is based on conditions prior to the existing buildings and pavement. This is because the existing detention was originally designed to handle the currently proposed development. No new detention is proposed.

+These values reflect a model that assumes that only the impervious areas are present. The time of concentration is also reduced by 20% to reflect this assumption.

PROJECT NARRATIVE

TOPOGRAPHIC, SOILS AND GEOLOGIC FEATURES

Site Description

The site is located within the Ridge and Valley Physiographic Province in Pennsylvania. It is located in the broad Nittany Valley with Tussey Ridge to the south and Bald Eagle Ridge to the north. An unnamed tributary to Slab Cabin Run bisects the property from northwest to southeast. The UNT discharges to Slab Cabin Run where it flows under PA Route 26 near to the intersection with PA Route 45. The UNT watershed has a drainage area of 1.05-SQ. MI. and is underlain by Karst geology. The watershed has many depressions and sinkholes upstream of the property. As a result, the drainage swale is ephemeral and only flows during extreme precipitation events. The channel, which has no bed and banks, remains dry during the rest of the year. No wetlands have been identified on the property.

The site currently includes the Salvation Baptist Church and one out building (a garage/workshop) along with a parking area. A volleyball court and a community garden are also located on the property. Proposed changes include a fellowship hall and a second garage. The fellowship hall was previously approved by Ferguson Township, but never constructed. Total new impervious cover is 18,807-SF (0.35-AC). The disturbed area for the new construction is 3.65-AC.

Soils Information

Project soils were identified by using the USDA NRCS Web Soil Survey. The soil boundaries are delineated on the attached PCSM and E&S Control Plans. The soils are identified in the table entitled Soil Characteristics and Limitations. A copy of the web soil survey is included in the accompanying documents.

Geologic Conditions

The project is underlain by the Nittany and Axeman formations. The contact between the formations is nearly perpendicular to West College Avenue and bisects the property between the existing church and garage. Both of these formations are Karst by nature (they consist of limestone which is susceptible to sinkhole development). Upon review of the geologic maps available from the PaDEP, no sinkholes or depressions which may develop into sinkholes have been identified on or immediately adjacent to the site property. Many of these conditions are located across West College avenue to the northeast and to the northwest across Whitehall Road. The Karst conditions allow for a high degree of depressional storage and infiltration so that the unnamed tributary which crosses the property is ephemeral, only flowing during extreme precipitation events. As a result, the unnamed stream is neither perennial nor intermittent and does not have a stream bed and banks or riparian characteristics.

EROSION AND SEDIMENTATION CONTROL PLAN

Description of Control Methodology

An erosion and sedimentation control plan has been devised to minimize site erosion and resulting sedimentation. Since the project is located within a watershed which the PFBC has identified as having an existing use of HQ-CWF (Slab Cabin Run), ABACT compliant BMPs are proposed. Some BMPs must be installed prior to disturbing the earth that drains to them. These are identified in the following discussion. Temporary BMPs shall remain in place until the disturbed area is regraded and vegetated.

Summary of Erosion and Sediment Control BMPs Including Construction and Maintenance

Compost Filter Sock - An ABACT compliant compost filter sock will be installed where and to the specs shown on the plans. All single sock placement shall be 18" sock unless otherwise noted on the plan. The sock may be filled with compost or wood chips.

Installation: (1) Compost socks are to be placed on level grades across slope to intercept runoff flowing down the slope. the sock shall be laid flush with the ground. The bottom of the sock shall be placed on a level grade. When it is necessary to cross small depressions, the sock top may deviate slightly from the level grade. Grades in such sections will not exceed one percent (1%), nor will the deviation extend for more than 25 feet. (2) Support stakes will be driven to the required depth below the existing ground surface, at specified intervals. Where socks are installed on pavement, aggregate shall be placed on the downstream side in place of stakes to keep the sock in place. (3) The sock shall be fully filled with compost or wood chips, but care should be taken not to cause tears by over filling.

Maintenance: (1) The sock installation will be inspected after every precipitation event. Any necessary repairs will be made immediately. (2) Accumulated sediments will be removed as required to keep the sock functional. In all cases, remove deposits where accumulations reach 1/2 the above ground height of the fence. (3) All undercutting will be repaired immediately with compacted backfill materials. (4) Adhere to any manufacturer's recommendations for replacing compost sock due to weathering.

Water Quality Filter - Each existing catch basin shall be fitted with a water quality filter to provide pollutant removal during runoff events. The BMP will be installed prior to initiation of construction and will remain in place after construction. As such, this BMP qualifies as both an ESC and a PCSM BMP. During construction the FX filters will be used to primarily conbate sediment. During the post construction stormwater period, the PC/PC+ filters will be used to reduce oils and grease from the parking lot. See the details sheet for additional information.

Maintenance: The filters shall be checked for excess material at least monthly. When the filter collects sediment and debris, he filter shall be removed and cleaned. The material that is removed shall be disposed of in a suitable manner which will minimize pollution. When cleaning the filters, the filters shall be inspected and the damaged filters shall be replaced. The cut sheet on the Details Sheet (ESC-2) provides additional maintenence information.

Retention Basin - All retention basins already exist on the property and do not need modified. However, during the construction phase, an aggregate filter shall be placed in front of the lowest outlet orifice on the principal spillway to minimize sediment discharge. This filter shall be removed when all areas draining to the basin are vegetated or cleaned for paved surfaces.

Maintenance: The basins must be inspected periodically for signs of sediment, erosion and dying vegetation.This includes the interior of the basin, embankments, inlets and outlets. Issues must be corrected immediately or as soon as possible for vegetation.

Vehicle Wash Zone - A vehicle wash zone has been shown on the plan. If vehicles, in particular the tires, become covered with mud on the site, this area shall be used to wash the mud off prior to the vehicles leaving the site on West College Avenue.

Maintenance: The wash zone is designed to maximize trapping mud and sediment within the area. When it becomes filled with sediment, the area shall be cleaned and the material shall be transported to a soil stockpile on site which is protected by a BMP. After construction when the wash zone is removed, the area shall be thoroughly cleaned to remove all mud and sediment .

Temporary Vegetative Surface Stabilization - Whenever disturbed areas or stockpiles will remain in place for more than 7-days, the area will be stabilized by using the temporary cover specified in the PLANTING SPECIFICATIONS table. If the area will be permanently stabilized within a short period after the 7-day limit or if seed will not germinate due to weather, the area may be temporarily stabilized with mulch only. If temporarily stabilized with mulch, the mulch should be removed and the area seeded and re-mulched during the first available growing season.

Maintenance: Temporary vegetation or mulch shall be inspected after each precipitation event to ensure that no areas of erosion are present. If present, the areas should be re-stabilized immediately.

Vegetative Surface Stabilization - Permanent vegetative stabilization will be provided on all disturbed areas (including channels) not covered by gravel or pavement at the end of all work. The vegetation will meet the requirements of Planting Specifications table. Note that the rain garden and the land restoration area have specific vegetation specifications outlined in the details.

Maintenance: Permanent vegetated areas will be inspected after each precipitation event until greater than 70% cover is maintained for a period of one year. After this time, the locations will be inspected quarterly. Any areas with less than 70% cover or with active erosion will be corrected immediately.

Disposal of Accumulated Sediment - All sediment accumulated within BMPs on this site shall be disposed of in one of two ways. 1) mixing with topsoil and/or subsoil and placing on the site in a fill or final grade operation or 2) trucking from the site and disposing in an approved and permitted off-site fill area. Any disposal off-site must be cleared with the Centre County Conservation District prior to removal from the site.

Construction Sequence

1. Hold a pre-construction meeting to go over ESC and PCSM Plans including all BMPs. Identify critical stages of construction.
2. Clearly field mark the Limits of Construction prior to doing any earth disturbance. These markings shall remain in place throughout construction and shall be inspected periodically and replaced if removed or destroyed.
3. Install vehicle wash zone for washing muddy vehicles prior to leaving the site.
4. Install compost sock where shown prior to working in the area draining to the sock. NO earth disturbance shall be conducted without first installing compost sock or other ESC BMPs which control runoff from the area to be disturbed. Install AASHTO aggregate filters at retention basin principal spillways.
5. Remove and stockpile soil from the areas to be disturbed. Provide temporary seeding of topsoil piles.
6. Construct proposed facilities.
7. Place topsoil on all disturbed areas which are not paved or built upon. Spread remaining topsoil at the storage site to match existing grades. Seed topsoil with permanent cover as specified in the Planting Specifications. Be sure to utilize meadow mix when seeding the land reclamation area.
8. Maintain all BMPs in place while any area has disturbed earth. Remove temporary controls when areas tributary to them have permanent stabilization. When areas tributary to the stormwater basins have been stabilized, remove the aggregate filters from the principal spillways.

Operation, Inspection and Maintenance Plan

During construction, the owner and their designated contractors shall be responsible for operation and maintenance of all BMPs. During this period, all facilities shall be inspected at least weekly and after significant precipitation events. Reporting shall use the inspection report provided in the supporting documents, or a reasonable similar document. The reports shall be maintained in a log at the site. Once construction is complete and the vegetation is established such that the contractor responsibility is released, the owner shall become solely responsible for maintenance. If at any time, the maintenance is not performed, Ferguson Township has the right to enter the property to preform the work and invoice the responsible parties for reasonable expenses. After construction, inspections should continue at least twice per year.When issues are encountered, the corrective measures should be completed as soon as conditions allow. Monitoring reports shall provide the date and time of inspection, any issues encountered and the date and time of the completion of corrective measures.

Recycling and Disposal Methods

During construction, all contractors shall make every effort to recycle materials and supplies. when possible. When recycling is not possible, disposable items shall be transported to a certified land fill or disposal area sanctioned by the Commonwealth. In no case shall anything other than native soil and rock be disposed of on the property. If the contractor decides to store fuel, oil, grease or other potentially polluting items on-site, they must develop and maintain a PPC Plan in accordance with PaDER and USEPA criteria. Safe and secure storage facilities for such items must be maintained.

Thermal Impact Analysis

Thermal impacts are minimized on the site by minimizing the extent of impervious surfaces such as rooftops and pavement. Only 13% of the site is proposed to be impervious. In addition, all impervious areas are discharded to vegetated areas, either lawn, swale areas, detention basins or rain gardens.

Antidegradation

The project is located in the Slab Cabin Run watershed which has an existing use designated by PFBC as HQ-CWF. As a result, antidegradation must be incorperated into the design. ABACT compliant BMPs have been incorporated into the ESC Plan including compost sock and a vegetated swale with check dam. PCSM BMPs have been shown to provide acceptable water quality protection for the watershed (see *Stormwater Calculations* of PCSM narrative).

Riparian Forest Buffer Management

As discussed previously, the low lying stream area only flows during extreme runoff events and does not exhibit the characteristics of a perennial stream. Consequently, stream buffers are not present and would not provide benefit to the stream.

ESC-1

Russian Church of Christ
3645 West College Ave - Ferguson Twp - Centre Co - PA
NPDES ESC PLAN - PLAN SHEET
FOR WEST COLLEGE AVENUE CHURCH IMPROVEMENTS
1 / 1

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DRAWN BY: JEL 12/20/2021
REVISIONS 02/07/2022 06/30/2022
SOURCE: Survey
SCALE: AS SHOWN

NOTE: PLEASE REFERENCE THE STORMWATER MANAGEMENT PLAN AND REPORT AS WELL AS THE NPDES POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN FOR ADDITIONAL INFORMATION.

NPDES PERMIT 140085 ISSUED JULY 8, 2022

SALVATION BAPTIST CHURCH
3645 West College Ave - Ferguson Twp - Centre Co - PA
LAND DEVELOPMENT PLAN UPDATE
NPDES EROSION & SEDIMENTATION CONTROL PLAN
PLAN AND NARRATIVE

ORIGINAL DATE OF ZONING PERMIT APPLICATION 02/09/2022
REVISIONS 06/30/2022 09/08/2022
SCALE: AS SHOWN
DRAWN BY: JEL 02/09/2022
SOURCE: Survey

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JOSEPH EDWARD LICHTY
PROFESSIONAL ENGINEER
ENGINEER 028627-E

ES-1

6 / 11

LAND GRADING TO MINIMIZE EROSION AND SEDIMENTATION

Construction Specifications:

- Only disturb, clear, or grade areas necessary for construction. Flag or otherwise delineate areas not to be disturbed. Exclude vehicles and construction equipment from these areas to preserve natural vegetation.
- All graded or disturbed areas including slopes shall be protected during clearing and construction in accordance with the approved erosion and sediment control plan until they are permanently stabilized.
- All sediment control measures shall be constructed and maintained in accordance with the approved erosion and sediment control plan and according to the standards and specifications for the appropriate erosion control practices.
- If topsoil is required for the establishment of vegetation, it shall be stockpiled in the amount necessary to complete finished grading and protected from erosion during the interim.
- Areas to be filled shall be cleared, grubbed to remove trees, vegetation, roots and other objectionable material, and stripped of topsoil.
- Areas to receive topsoil shall be scarified to a minimum depth of 3 inches (76 mm) prior to placement of topsoil.
- All fills shall be compacted as required by building standards to reduce erosion, slippage, settlement, subsidence and other related problems. Fill intended to support buildings, structures, conduits, etc., shall be compacted in accordance with local requirements or codes.
- The outer face of the fill slope should be allowed to stay loose, not rolled, compacted, or bladed smooth. A bulldozer may run up and down the fill slope so the dozer treads (cleat tracks) create grooves perpendicular to the slope. If the soil is not too moist, excessive compaction will not occur.
- All fill shall be placed and compacted in layers not to exceed 8 inches (0.2 m) per lift.
- Use slope breaks, such as diversions, benches, or contour furrows as appropriate, to reduce the length of cut-and-fill slopes to limit sheet and rill erosion and prevent gully erosion.
- The finished cut-and-fill slopes, which are to be vegetated with grass and legumes, should not be steeper than 2:1.
- Slopes to be maintained by tractor or other equipment should not be steeper than 3:1.
- Slopes in excess of 2:1 may require hydroseeding, hydromulching, tactifying, and/or "punching-in" straw, bioengineering techniques, or retaining walls.
- Roughen the surface of all slopes during the construction operation to retain water, increase infiltration, and facilitate vegetation establishment.
- Seeps or springs encountered during construction shall be handled in accordance with approved methods.
- Stabilize all graded areas with vegetation, crushed stone, riprap, or other ground cover as soon as grading is completed or if work is interrupted for 21 working days or more.
- Use mulch to stabilize areas temporarily where final grading must be delayed.
- Stockpiles, borrow areas and spoil areas shall be shown on the plans and shall be stabilized to prevent erosion and sedimentation.

PLANTING SPECIFICATIONS

TYPE OF PLANTING AND PLANTING DATES (4)	FORMULA AND SPECIES	% BY WEIGHT	MIN. PURITY (%)	MIN. GERMINATION (%)	SEEDING RATE (#/AC)
TEMPORARY 03/15 - 10/15	**PennDOT E**				**48**
	- Annual Ryegrass	100	98	90	48
PERMANENT LAWNS AND OPEN SPACE 03/15 - 06/01 & 08/01 - 10/15	**PennDOT B**				**102**
	- Perennial Ryegrass (1)	20	98	90	19
	- Creeping Red Fescue or Chewing Fescue	30	98	85	29
	- Kentucky Bluegrass (2)	50	98	80	53
PERMANENT SWALES AND PONDS 03/15 - 06/01 & 08/01 - 10/15	**PennDOT D**				**102**
	- Tall Fescue	70	98	85	73
	- Creeping Red Fescue or Chewing Fescue	30	98	85	29
PERMANENT STEEP SLOPES. UNMOWED 03/01 - 10/15 (5)	**PennDOT C**				**44**
	- Crownvetch (5)	45	99	70	19
	- Annual Ryegrass (1)	55	98	90	24
PERMANENT WETLANDS AND WILDLIFE AREAS 04/01 - 06/15 & 8/16 - 09/15	**PennDOT W**				**51**
	- Tall Fescue	70	98	85	36
	- Birdsfoot Trefoil (3)	20	98	80	10
	- Redtop	10	92	80	5

(1) use a combination of approved certified varieties with no one exceeding 50% of the total Ryegrass component.

(2) use a combination of approved certified varieties with no one variety exceeding 25% of the total Bluegrass component.

(3) use a combination of varieties (Viking, Empire, Norcen, Dawn, Leo, Bull, Maitland) with no one variety exceeding 50% of the total Trefoil component. Recommended 10% hard seed and 70% normal sprouts, except during August and September planting use 35% hard seed.

(4) if conditions warrant and it becomes necessary to plant outside the recommended dates, apply 50% of supplements at time of seeding and remainder within the next recommended planting period.

(5) Crownvetch portion of PennDOT C formula should be applied anytime except September and October.

SPECIAL INSTRUCTIONS

- Except under favorable conditions as determined by the Conservation District, DO NOT plant permanent mixture outside the specified planting dates. Instead use a temporary cover and then plant the permanent mixture during the next available planting period.
- Maximum weed content = 0.15%.
- Application of seed may be drilled, broadcast or hydroseeded in accordance with the current *Penn State Agronomy Guide.*

FERTILIZER APPLICATION RATES

- Pulverized Agricultural Limestone = 2-tons/acre
- 10-20-20 Analysis Commercial Fertilizer = 680-lb./acre
- 38-0-0 Ureaform Fertilizer = 240-lb./acre

MULCH AND MAT APPLICATION

- All seeded areas shall be mulched using an application of 3-tons/acre of straw ($\frac{3}{4}$" to 1" thick loosely distributed). On permanent cover areas anchor as follows: wood or cellulose fibers at 775-lb./acre OR non-asphalt emulsion at 120-lb./acre or at manufacturer's recommended application rate.
- In steep sloped areas or in vegetated channels, a erosion control mat shall be applied as specified in the plan.

TREES AND SHRUBS

- Plant trees no closer than 10-feet apart, shrubs no closer than 4-feet apart.
- Excavate holes at least 1-foot in all directions around root ball.
- Place plant in hole, remove burlap, backfill around root ball and lightly tamp.
- Place fertilizer stakes at drip zone per manufacturer's specifications.

NOTE: For Land Restoration follow procedures outlined in Penn State Extention Service's "Meadow and Praries: Wildlife Friendly Alternatives to Lawns" provided in the supplementary documents. The document provides suggested species as well as a list of available landscapers familiar with meadow planting.

Pure Basin & Curb Inlet Filters

Pure basin and curb inlet filters are the preferred choice for permanent inlet protection and stormwater runoff control.

Constructed of versatile stainless steel, Pure inlet filters will fit any drainage structure and are available with site-specific filter bags providing various levels of filtration.

Applications

- Car washes
- Commercial
- Loading ramps
- Industrial
- Gas stations
- Parking lots
- Dock drains
- Maintenance

Features

- Custom stainless steel frames are configured to fit into any drainage structure
- Flow and bypass rates meet specific inlet requirements
- Filter bags target site specific removal of trash, leaves, small particles, oil and grease
- Works below grade with bypass to drain area if bag is full
- Installs quickly and maintained with removal tool

Features

- Stainless steel frame provides extended service life
- Replaceable filter bags handle loads with a safety factor of five
- Meets stringent removal requirements:
  - FX bags rated >80% removal efficiency of street sweep-size particles
  - PC/PC+ bags have been tested to 99% TSS removal of OK-110 US Silica Sand and 97% TPH (total petroleum hydrocarbon) removal

NOTE: FX Filters to be used during construction. PC/PC+ Filters to be used post-construction.

//ADS

SW-22

Pure Inlet Filters Specification

Identification

The installer shall inspect the plans and/or worksite to determine the quantity of each drainage structure casting type. The foundry casting number, exact grate size and clear opening size or other information will be necessary to finalize the part number and dimensions.

Material and performance

The filter is comprised of a stainless steel frame and a replaceable geotextile filter bag attached to the frame with a stainless steel locking band. The filter bag hangs suspended below the grate that shall allow full bypass flow into the drainage structure if the bag is completely filled with sediment. The standard woven polypropylene FX filters bags are rated for 200 gpm/sqft with a removal efficiency of 82% when filtering a USDA Sandy Loam sediment load. The post-construction PC filter bags are rated for 137 gpm/sqft and have been third-party tested at 99% TSS removal to 110 micron and 97% TPH removal of used motor oil hydrocarbon mix.

Installation

Remove the grate and clean the ledge of the frame to ensure it is free of stone and dirt. Hang the inlet filter's suspension hangers firmly on the casting's inside ledge. Replace the grate and confirm it is elevated no more than ⅛" (3 mm). For wall mount units, follow instructions for attaching the stainless steel mounting brackets using the provided concrete fasteners.

Inspection Frequency

Construction site inspection should occur following each ½" (12 mm) or more rain event. Post construction inspections should occur three times per year in areas with mild year round rainfall and four times per year in areas with summer rains. Industrial application site inspections should occur on a regular scheduled basis no less than three times per year.

Maintenance guidelines

Empty the filter bag if more than half filled with sediment and debris or as directed by the engineer. Remove the grate, engage the lifting bars or handles with the removal tool and lift from the structure. Dispose of the sediment or debris as directed by the engineer or maintenance contract in accordance with EPA guidelines.

As an alternative , an industrial vacuum may be used to collect the accumulated sediment. Remove any caked-on silt from the sediment bag and reverse flush the bag with medium spray for optimal filtration. Replace the bag if torn or punctured to ½" (12 mm) diameter or greater on the lower half of the bag. Post-construction PC/PC+ bags should be maintained prior to 50% oil saturation. The average 2'x2' PC filter bag will retain approximately 96 oz (2.8 l) of oil at which time it should be serviced or replaced. When utilizing the Cleartec Rubberizer Pouches in the PC+ bags note that these oil skimmers will gradually turn brown and solidify, indicating replacement is needed. Each pouch will absorb approximately 62 oz. (1.8 l) of oil before requiring replacement. The spent media may be recycled for its fuel value through waster to energy incineration. Dispose of oil-contaminated products in accordance with EPA guidelines.

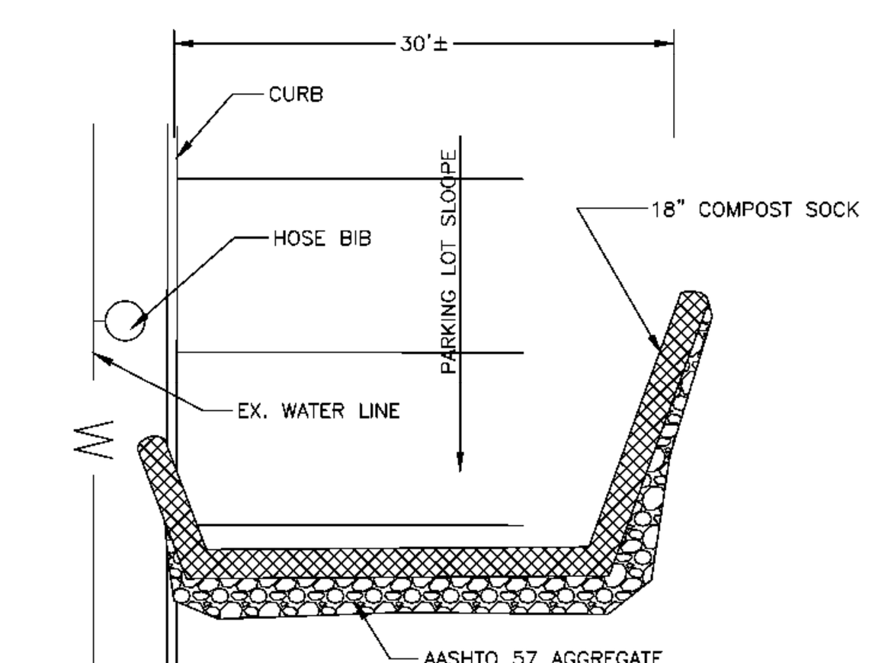
Filter bag replacement

Remove the bag by loosening or cutting off the clamping band. Take the new filter bag, which is equipped with a stainless steel worm drive clamping band and use a screwdriver to tighten the bag around the frame channel. Ensure the bag is secure and there is not slack around the perimeter of the band.

//ADS

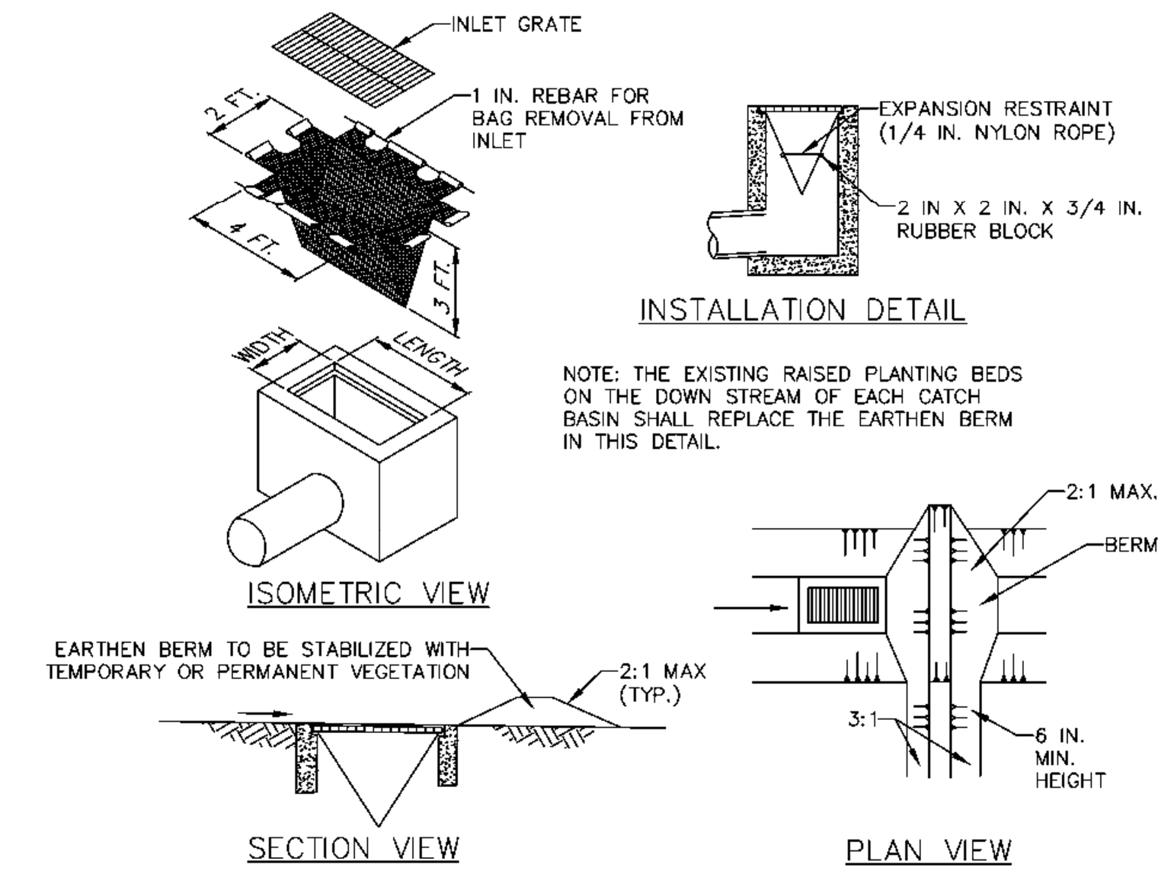
adspipe.com
800-821-6710

SW-23



MAINTENANCE: WHEN IT BECOMES FILLED WITH SEDIMENT, THE AREA SHALL BE CLEANED AND THE MATERIAL SHALL BE TRANSPORTED TO A SOIL STOCKPILE ON SITE WHICH IS PROTECTED BY A BMP. AFTER CONSTRUCTION WHEN THE WASH ZONE IS REMOVED, THE AREA SHALL BE THOROUGHLY CLEANED TO REMOVE ALL MUD AND SEDIMENT.

VEHICLE WASH ZONE DETAIL



NOTES:

MAXIMUM DRAINAGE AREA = 1/2 ACRE.

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

ROLLED EARTHEN BERM IN ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR REMAIN PERMANENTLY.

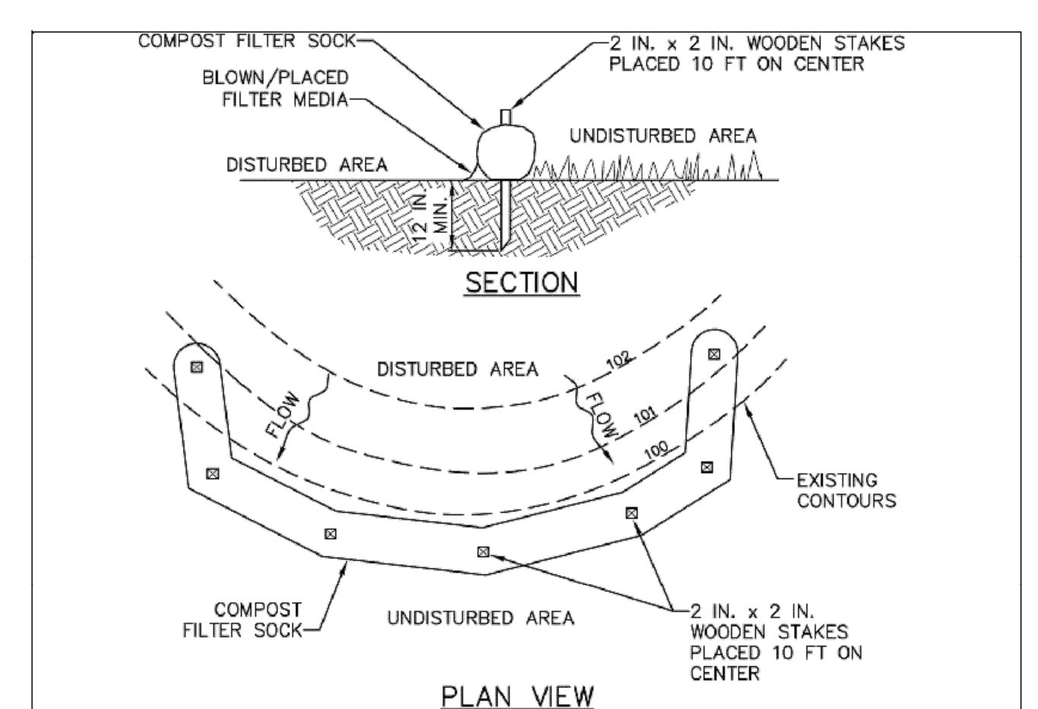
AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS., A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.

INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

FILTERS SHALL REMAIN TO PROVIDE WATER QUALITY IMPROVEMENTS AFTER CONSTRUCTION.

STANDARD CONSTRUCTION DETAIL #4-16
FILTER BAG INLET PROTECTION - TYPE M INLET



NOTES:

SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

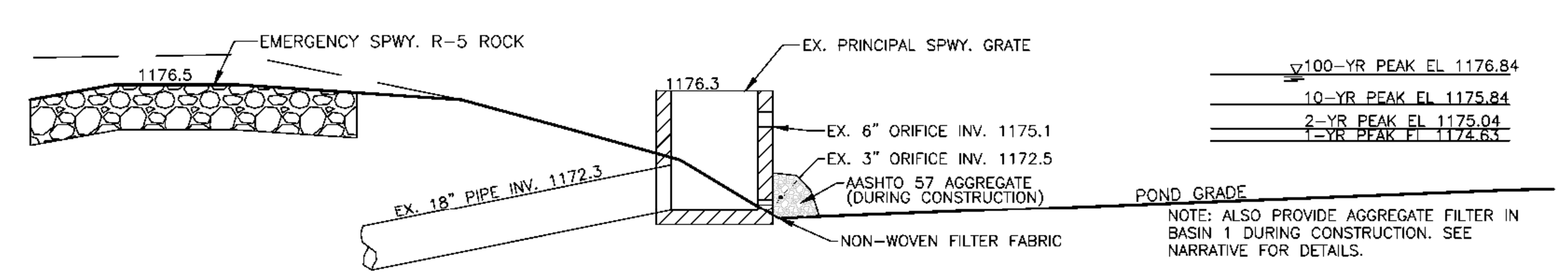
ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

STANDARD CONSTRUCTION DETAIL #4-1
COMPOST FILTER SOCK
NOT TO SCALE



NOTE: ALSO PROVIDE AGGREGATE FILTER IN BASIN 1 DURING CONSTRUCTION. SEE NARRATIVE FOR DETAILS.

STORMWATER BASIN 2 DISCHARGE DETAILS
TYPICAL EX. RETENTION BASIN OUTLET
AGGREGATE FILTER DURING CONSTRUCTION

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DRAWN BY: JEL
12/21/2021

REVISIONS
02/07/2022
06/30/2022

SCALE: AS SHOWN

Russian Church of Christ
3645 West College Ave - Ferguson Twp - Centre Co - PA
NPDES ESC PLAN - DETAILS SHEET
FOR WEST COLLEGE AVENUE CHURCH IMPROVEMENTS

2 / 2

NPDES PERMIT 140085 ISSUED JULY 8, 2022

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ENGINEER 028827-E

DRAWN BY: JEL
01/06/2022

SOURCE: Survey

REVISIONS
06/30/2022
09/08/2022

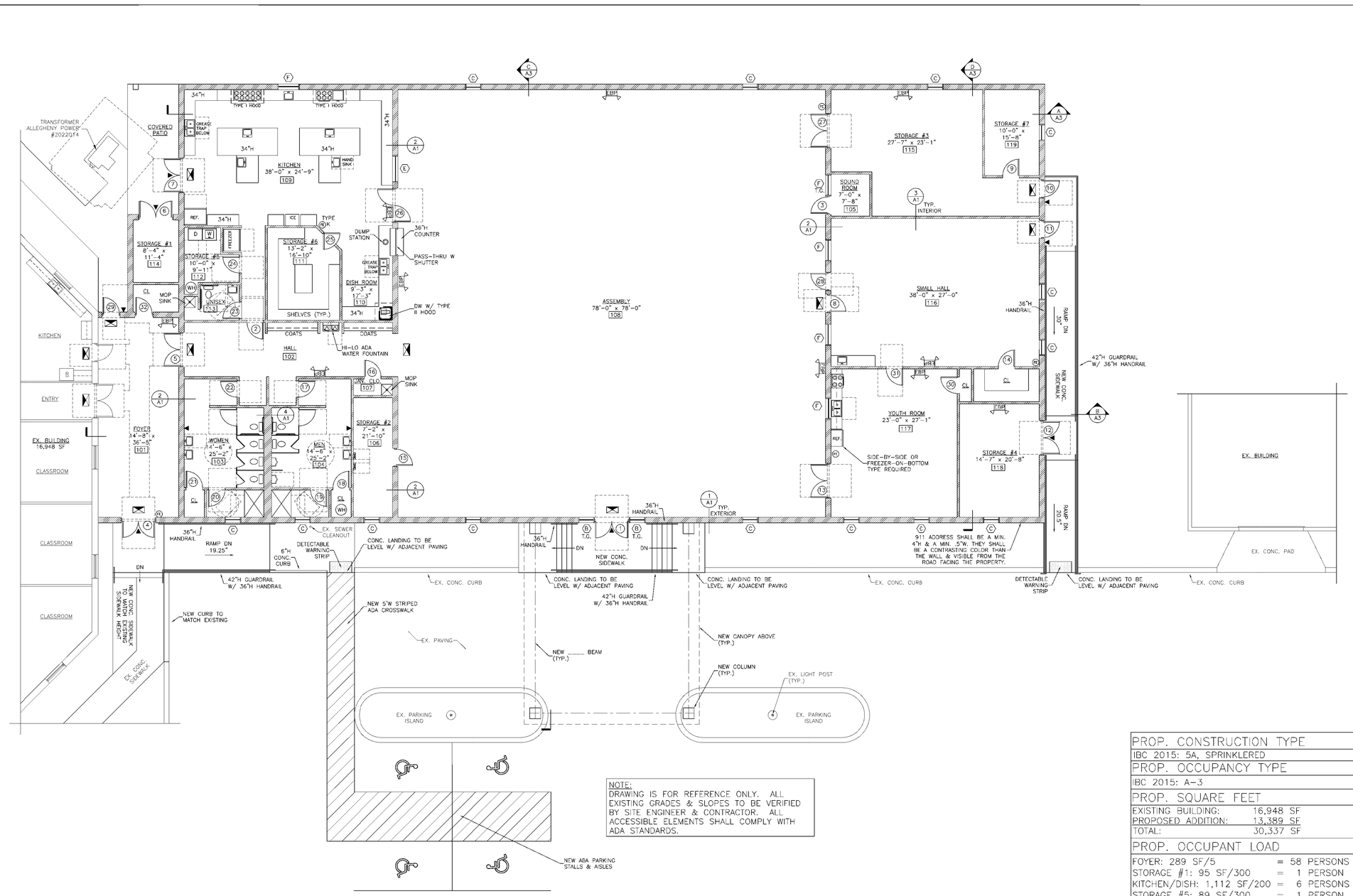
SCALE: AS SHOWN

ORIGINAL DATE OF ZONING PERMIT APPLICATION
02/09/2022

SALVATION BAPTIST CHURCH
3645 West College Ave - Ferguson Twp - Centre Co - PA
LAND DEVELOPMENT PLAN UPDATE
NPDES EROSIION AND SEDIMENTATION CONTROL PLAN
DETAILS SHEET

ES-2

7 / 11



NOTE:
DRAWING IS FOR REFERENCE ONLY. ALL EXISTING GRADES & SLOPES TO BE VERIFIED BY SITE ENGINEER & CONTRACTOR. ALL ACCESSIBLE ELEMENTS SHALL COMPLY WITH ADA STANDARDS.

PROPOSED FLOOR PLAN
SCALE: 1/8" = 1'-0"

BUILDING NORTH

LEGEND
- NEW WALL
- EXIT SIGN
- EBP — EMERGENCY LIGHT BATTERY PACK
- REMOTE HEAD
- FE — FIRE EXTINGUISHER

PROP. CONSTRUCTION TYPE
IBC 2015: 5A, SPRINKLERED

PROP. OCCUPANCY TYPE
IBC 2015: A-3

PROP. SQUARE FEET

EXISTING BUILDING:	16,948 SF
PROPOSED ADDITION:	13,389 SF
TOTAL:	30,337 SF

PROP. OCCUPANT LOAD

FOYER: 289 SF/5	=	58 PERSONS
STORAGE #1: 95 SF/300	=	1 PERSON
KITCHEN/DISH: 1,112 SF/200	=	6 PERSONS
STORAGE #5: 89 SF/300	=	1 PERSON
STORAGE #6: 213 SF/300	=	1 PERSON
SOUND: 54 SF/100	=	1 PERSON
STORAGE #2: 157 SF/300	=	1 PERSON
ASSEMBLY: 6,084 SF/15	=	406 PERSONS
STORAGE #3: 650 SF/300	=	3 PERSONS
SMALL HALL: 1,026 SF/15	=	69 PERSONS
YOUTH ROOM: 623 SF/15	=	42 PERSONS
STORAGE #4: 302 SF/300	=	2 PERSONS
STORAGE #7: 157 SF/300	=	1 PERSON
TOTAL:	=	592 PERSONS

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DRAWN BY: JEL 07/23/21
SOURCE: Albert A. Drobka, Architect
REVISIONS 08/10/2022
SCALE: AS SHOWN
ORIGINAL DATE OF ZONING PERMIT APPLICATION 02/09/2022

PROJECT
RUSSIAN BAPTIST CHURCH ADDITION
3645 W. COLLEGE AVE.
STATE COLLEGE, PA 16801

REVISION DATE

SHEET TITLE
PROP. FLOOR PLAN W/ RAMPS & STAIRS

DATE
07/12/21

SCALE
AS NOTED

DRAWN BY:
MTM

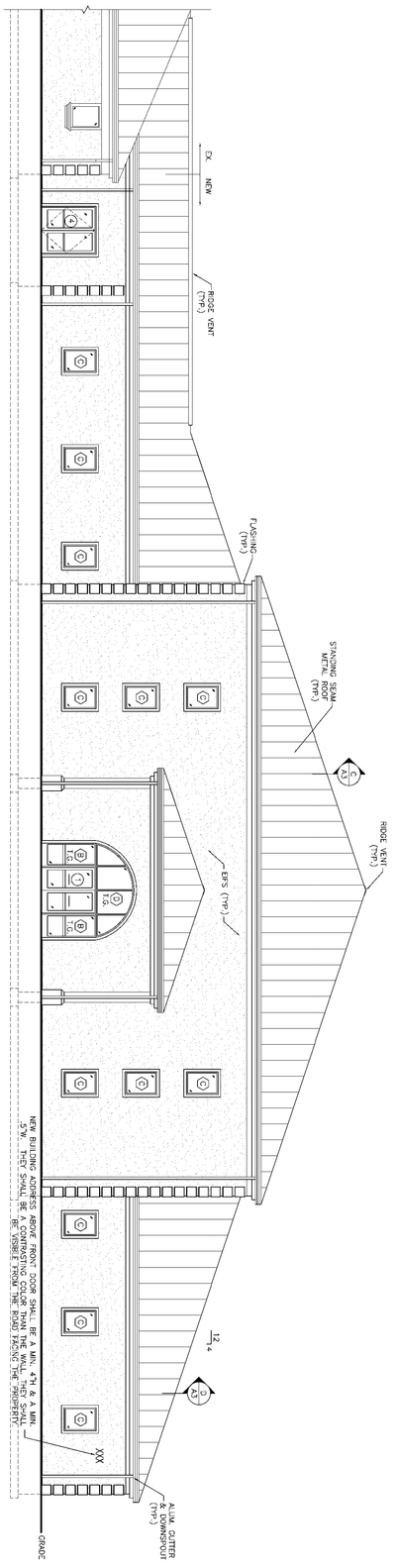
CHECKED BY
AAD

SHEET NO.
A1

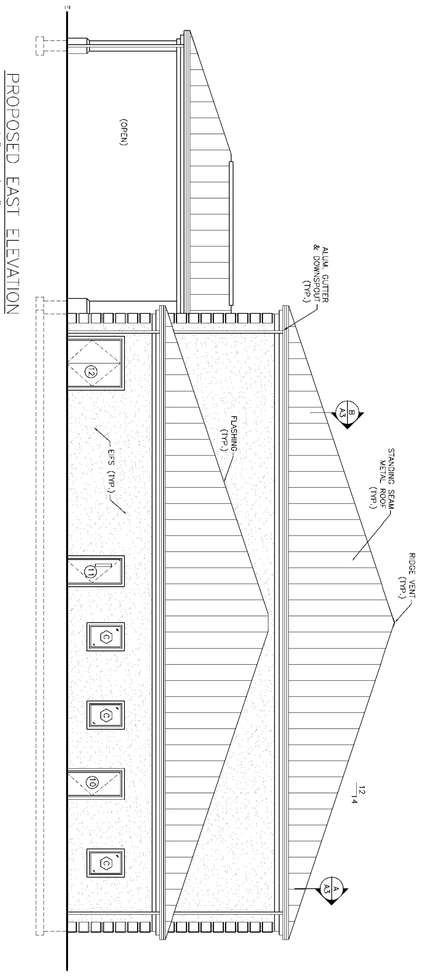
PROJECT #
020-141

Salvation Baptist Church
3645 West College Ave - Ferguson Twp - Centre Co - PA

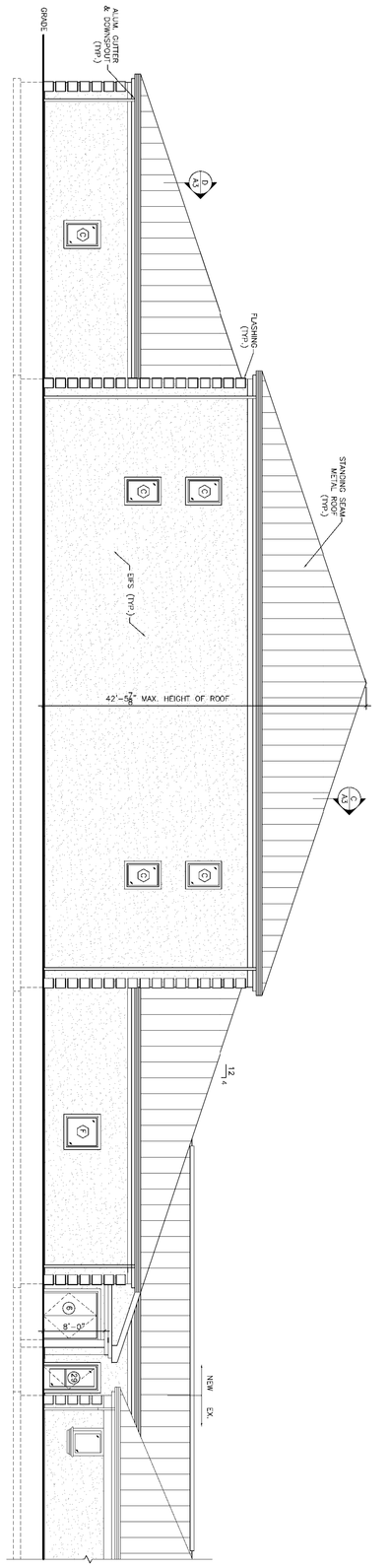
LAND DEVELOPMENT PLAN UPDATE
ARCHITECTURAL SHEET 1 - FELLOWSHIP HALL FLOOR PLAN



PROPOSED SOUTH ELEVATION
SCALE: 1/8" = 1'-0"



PROPOSED EAST ELEVATION
SCALE: 1/8" = 1'-0"



PROPOSED NORTH ELEVATION
SCALE: 1/8" = 1'-0"

SHEET TITLE	PROPOSED EXTERIOR ELEVATIONS
DATE	02/11/21
SCALE	AS NOTED
DRAWN BY:	LDC
CHECKED BY	AAD
SHEET NO.	A2
PROJECT #	020-141

REVISION DATE

PROJECT

RUSSIAN BAPTIST CHURCH ADDITION
3645 W. COLLEGE AVE.
STATE COLLEGE, PA 16801

ALBERT A. DROBKA ARCHITECT
P.O. BOX 256
1352 S. ATHERTON ST.
STATE COLLEGE, PA.
(814) 238-0710

REGISTERED ARCHITECT ALBERT A. DROBKA

AR-2

9
11

Salvation Baptist Church
3645 West College Ave - Ferguson Twp - Centre Co - PA

LAND DEVELOPMENT PLAN UPDATE
ARCHITECTURAL SHEET 2 - FELLOWSHIP HALL ELEVATIONS

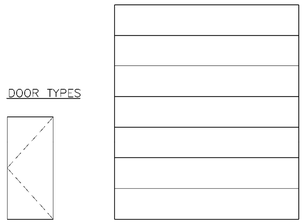
ORIGINAL DATE OF ZONING PERMIT APPLICATION 02/09/2022	REVISIONS 08\10/2022	DRAWN BY: JEL 07/2021	
	SCALE: AS SHOWN	SOURCE: Albert A. Drobka, Architect	

LICHTY ENGINEERING
687 Berkshire Drive
State College, PA 16803
(814)238-1141
Lichty.Engineering@comcast.net

DOOR SCHEDULE

#	TYPE	MATL	WIDTH	HEIGHT	THICK	FINISH	HDW GRP	FRAME FINISH	LITE	REMARKS
1	B	INSULATED METAL	12/0	14/0	1 3/4"	PAINT	2	PAINT		OVERHEAD GARAGE DOOR
2	B	INSULATED METAL	12/0	14/0	1 3/4"	PAINT	2	PAINT		OVERHEAD GARAGE DOOR
3	B	INSULATED METAL	12/0	14/0	1 3/4"	PAINT	2	PAINT		OVERHEAD GARAGE DOOR
4	A	INSULATED METAL	3/0	6/8	1 3/4"	PAINT	1	PAINT		
5	A	INSULATED METAL	3/0	6/8	1 3/4"	PAINT	1	PAINT		

DOOR TYPES



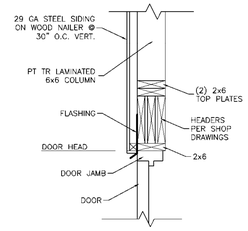
DOOR TYPE: A
3/0x6/8x1 3/4
INSULATED METAL
U-VALUE OF .77
OR BETTER

DOOR TYPE: B
12/0x14/0x1 3/4
HOLLOW METAL
OVERHEAD DOOR
U-VALUE OF .77
OR BETTER

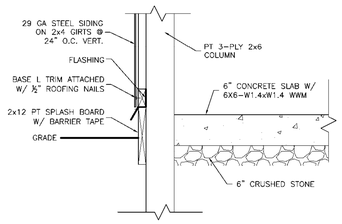
HARDWARE TYPES

HARDWARE SET #1
3 EA. HINGES
THRESHOLD
WEATHER STRIPPING
CLOSER
LEVER HANDLES
DEADBOLT

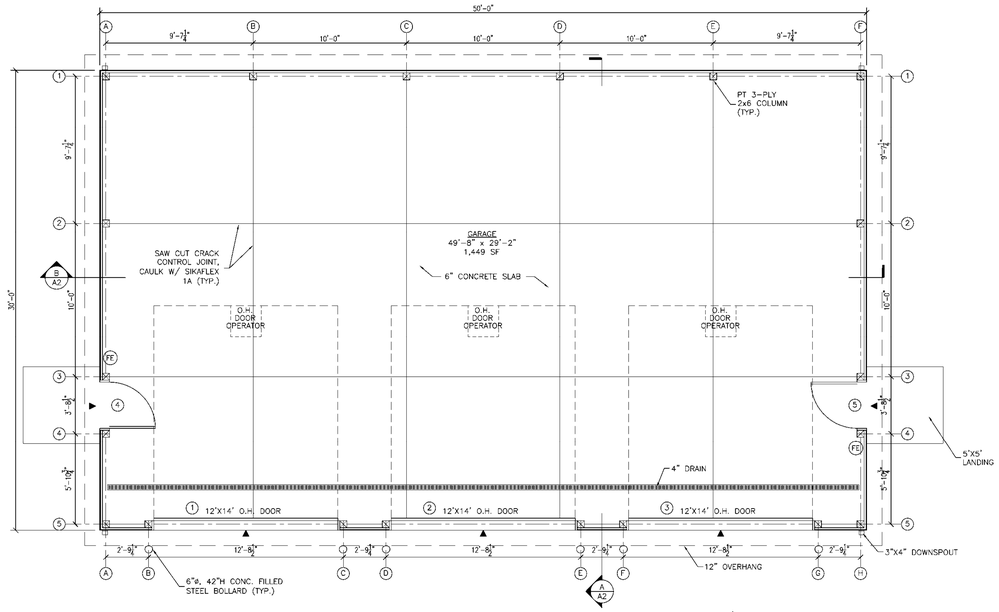
HARDWARE SET #2
STANDARD HARDWARE
FROM DOOR MANUFACT.



DOOR FLASHING DETAIL
SCALE: 1" = 1'-0"



FLOOR FLASHING DETAIL
SCALE: 1" = 1'-0"



PROPOSED FLOOR PLAN
SCALE: 1/4" = 1'-0"

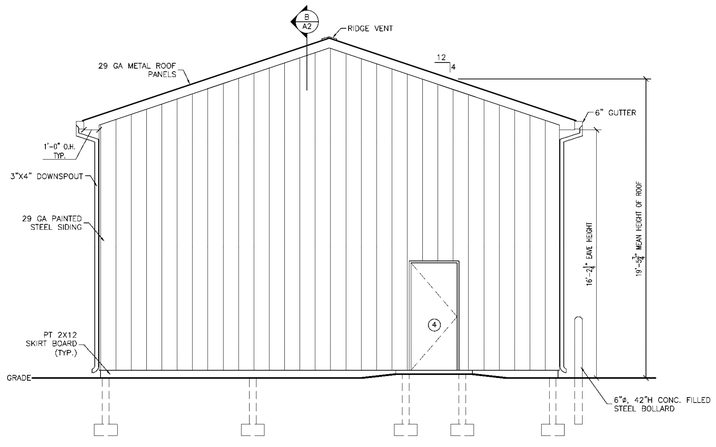
BUILDING NORTH

FINISH SCHEDULE

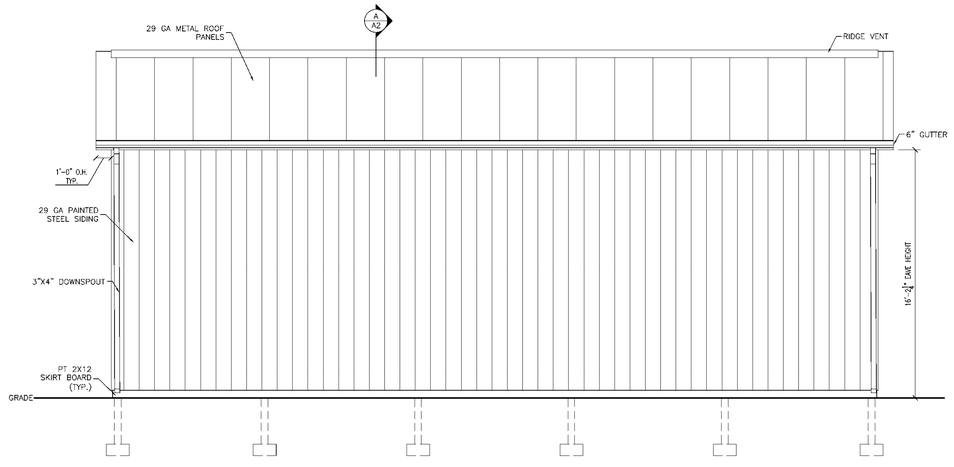
ROOM	AREA	FLOOR		NORTH WALL		SOUTH WALL		EAST WALL		WEST WALL		CEILING		REMARKS
		MATL	BASE	MATL	FINISH	MATL	FINISH	MATL	FINISH	MATL	FINISH	MATL	HEIGHT	
100	GARAGE	CO	–	EXP	–	EXP	–	EXP	–	EXP	–	EXP	16'-0"	

ABBREVIATIONS
CO = CONCRETE
EXP = EXPOSED

NOTES:
1. ALL INTERIOR FINISHES SHALL HAVE A FLAME SPREAD OF 200 OR LESS.
2. OWNER TO SELECT ALL COLORS & FINISHES, UNLESS OTHERWISE NOTED.



PROPOSED NORTH ELEVATION
SCALE: 1/4" = 1'-0"



PROPOSED EAST ELEVATION
SCALE: 1/4" = 1'-0"

LEGEND
(FE) FIRE EXTINGUISHER
◀ REMOTE HEAD
CONSTRUCTION TYPE
IBC 2015: 5B
OCCUPANCY TYPE
IBC 2015: U
SQUARE FOOTAGE
1,449 SF
OCCUPANT LOAD
NO OCCUPANCY

ALBERT A. DROBKA ARCHITECT
P.O. BOX 256
1352 S. ATHERTON ST.
STATE COLLEGE, PA.
(814) 238-0710

PROJECT
RBC POLE BARN
3645 W. COLLEGE AVE.
STATE COLLEGE, PA 16801

REVISION DATE

SHEET TITLE
PROPOSED FLOOR PLAN & ELEVATIONS

DATE
01/19/21

SCALE
AS NOTED

DRAWN BY:
SN

CHECKED BY
AAD

SHEET NO.
A1

PROJECT #
021-05

LICHTY ENGINEERING
697 Berkshire Drive
State College, PA 16803
(814)238-1141
Lichty.Engineering@comcast.net

DRAWN BY: JEL
01/7/2021

SOURCE:
Albert A. Drobka, Architect

REVISIONS
08/10/2022

SCALE: AS SHOWN

ORIGINAL DATE OF ZONING PERMIT APPLICATION
02/09/2022

Salvation Baptist Church
3645 West College Ave - Ferguson Twp - Centre Co - PA

LAND DEVELOPMENT PLAN UPDATE
ARCHITECTURAL SHEET 3 - NEW GARAGE FLOOR PLAN

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: Ron Seybert, Jr., P.E., Township Engineer

DATE: October 18, 2022

SUBJECT: **AWARD OF 2018-C20U**
Park Hills Drainageway Utility Relocation

Bids were opened publicly for Contract 2018-C20U for the Park Hills Utility Relocation contract at 2:00 pm on Tuesday, October 11, 2022, and read aloud. The bid letting was advertised in the Centre Daily Times on September 26, 2022, and attended by Ivan Hershberger of Tru-Tek Drilling, and Summer Brown and me from Ferguson Township.

One bid was received as follows:

RAVAN INC., dba Tru-Tek Drilling	$453,016.83

Attached is a copy of the bid tabulation. The work is anticipated to be completed in 2023, and appropriate funds will be included in the 2023 budget for this work.

This is the second bid opening for this project. The first opening contemplated the work being completed in 2022, and we received no bids. We requested feedback from prospective bidders and learned that there is more work being bid than can be completed by contractors. The push for fiber to the premise is affecting workload for the contractors.

Based upon that feedback, the project was rebid for completion in early 2023 in hopes of attracting more bidders; however, only the one above bid was received. This work relocates utilities out of the drainageway and must be completed for the Park Hills Drainageway stabilization project to proceed.

I recommend that the Board of Supervisors award the contract to RAVAN INC., dba Tru-Tek Drilling for a total of $453,016.83 per their bid.

Attachments: 2018-C20U Bid Tabulation

Copy: C. Martin
D. Modricker
E. Endresen
2018-C20U File

2018-C20U Park Hills Drainage
Utility Relocation Bid Tabulation

ITEM NO. / UNIT	DESCRIPTION	QTY	ENGINEER'S ESTIMATE		TRU-TEK DRILLING	
			UNIT PRICE	TOTAL COST	UNIT PRICE	TOTAL COST
0608-0001 / LS	MOBILIZATION	1	$10,973.00	$10,973.00	$10,000.00	$10,000.00
4676 0001 / SY	PLAIN CEMENT CONCRETE SIDEWALK (4" DEPTH) - MODIFIED	18	$150.00	$2,700.00	$69.87	$1,257.66
0802 0001 / CY	TOPSOIL FURNISHED AND PLACED	36	$50.00	$1,800.00	$375.00	$13,500.00
0901 0001 / LS	MAINTENANCE AND PROTECTION OF TRAFFIC DURING CONSTRUCTION	1	$6,584.00	$6,584.00	$6,500.00	$6,500.00
0954 0012 / LF	2 INCH CONDUIT	3,044	$5.00	$15,220.00	$6.57	$19,999.08
0954 0012 / LF	3 INCH CONDUIT	6,672	$6.00	$40,032.00	$10.76	$71,790.72
0954 0151 / LF	TRENCH AND BACKFILL, TYPE I	354	$40.00	$14,160.00	$28.79	$10,191.66
0954 0153 / LF	TRENCH AND BACKFILL, TYPE III	52	$150.00	$7,800.00	$45.94	$2,388.88
0954 0500 / LF	DIRECTIONAL BORING	3,862	$35.00	$135,170.00	$79.34	$306,411.08
9000 0001 / SY	SEEDING, SOIL SUPPLEMENTS, AND MULCHING	369	$7.00	$2,583.00	$29.75	$10,977.75
			TOTAL	$237,022.00	TOTAL	$453,016.83

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: Ron Seybert, Jr., P.E., Township Engineer

DATE: October 25, 2022

SUBJECT: **AWARD OF 2019-C21**
Pine Grove Mills LED Street Light Conversion Contract

Bids were opened publicly for Contract 2019-C21 for the Pine Grove Mills LED Street Light Conversion contract at 2:00 pm on Tuesday, October 25, 2022, and read aloud. The bid letting was advertised in the Centre Daily Times on September 27, 2022, and attended by David Modricker, Summer Brown and me from Ferguson Township.

One bid was received as follows:

M & B Services, LLC	$292,792.86

Attached is a copy of the bid tabulation. The work is anticipated to be completed in 2023, and appropriate funds will be included in the 2023 budget for this work.

This project replaces the existing high pressure sodium lights with retrofit LED modules that fit inside the existing fixtures along East Pine Grove Road and Nixon Road. The project also removes the lights from the flat rate tariff with West Penn Power and installs 3 metered control boxes with central photocells for the lights.

I recommend that the Board of Supervisors award the contract to M & B Services, LLC for a total of $292,792.86 per their bid.

Attachments: 2019-C21 Bid Tabulation

Copy: C. Martin
D. Modricker
E. Endresen
2019-C21 File

2019-C21
Pine Grove Mills LED Street Light Converstion Project
Bid Tabulation

			ENGINEER'S ESTIMATE		M & B SERVICES, LLC	
ITEM NO. UNIT	DESCRIPTION	QTY	UNIT PRICE	TOTAL COST	UNIT PRICE	TOTAL COST
0608-0001 LS	MOBILIZATION	1	$8,387.00	$8,387.00	$8,877.48	$8,877.48
0901 0001 LS	MAINTENANCE AND PROTECTION OF TRAFFIC DURING CONSTRUCTION	1	$5,591.00	$5,591.00	$6,571.29	$6,571.29
0910 4115 LF	AWG 6 UNDERGROUND CABLE, COPPER, 1 CONDUCTOR	14,520	$2.75	$39,930.00	$1.42	$20,618.40
0910 4117 LF	AWG 10 UNDERGROUND CABLE, COPPER, 1 CONDUCTOR	7,260	$2.25	$16,335.00	$1.04	$7,550.40
4910 0702 EA	COMPLETE POWER SUPPLY SYSTEM	3	$8,000.00	$24,000.00	$6,156.30	$18,468.90
4910 7210 EA	TESTING OF ENTIRE LIGHTING SYSTEM	1	$1,500.00	$1,500.00	$4,541.74	$4,541.74
0954 0012 LF	2 INCH CONDUIT	2,310	$5.00	$11,550.00	$6.92	$15,985.20
0954 0013 LF	3 INCH CONDUIT	74	$6.00	$444.00	$28.40	$2,101.60
0954 0151 LF	TRENCH AND BACKFILL, TYPE I	80	$30.00	$2,400.00	$21.10	$1,688.00
0954 0152 LF	TRENCH AND BACKFILL, TYPE II	59	$120.00	$7,080.00	$83.64	$4,934.76
0954 0154 LF	TRENCH AND BACKFILL, TYPE IV	108	$200.00	$21,600.00	$134.71	$14,548.68
0954 0302 EA	JUNCTION BOXES, JB-27	10	$1,200.00	$12,000.00	$1,178.28	$11,782.80
0954 0403 EA	ELECTRIC SERVICE, TYPE C	3	$3,500.00	$10,500.00	$2,991.84	$8,975.52
0954 0500 LF	DIRECTIONAL BORING	2,049	$35.00	$71,715.00	$45.08	$92,368.92
9000 0001 EA	LED LUMINAIRE WITH RECEPTACLE	0	$3,000.00	$0.00	$0.00	$0.00
9000 0002 EA	LED RETROFIT	35	$1,500.00	$52,500.00	$1,552.79	$54,347.65
9000 0003 EA	ABANDON EXISTING ELECTRICAL SERVICE	16	$500.00	$8,000.00	$1,214.47	$19,431.52
			TOTAL	$293,532.00	TOTAL	$292,792.86

BUDGET $300,000.00