



SUBURBAN PARK MASTER PLAN UPDATE

Ferguson Township, Centre County, Pennsylvania
April 2019

SUBURBAN PARK MASTER PLAN UPDATE

Prepared for:

Ferguson Township, Centre County, Pennsylvania

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Introduction

Suburban Park is a neighborhood park in Ferguson Township, Centre County. Suburban Park serves the Overlook Heights neighborhood in the northeast portion of the municipality. Suburban Park was acquired by the Township in the late 1960's and the first master plan was developed in the 1970's. Development has occurred in stages since that time. A previous master plan update was completed in 2002.

Planning Process

The Suburban Park Master Plan Update provides a vision for the park into the next decade and beyond. The park planning process for the Suburban Park Master Plan Update included four parts:

1. *Inventory and Assessment of Man-made and Natural Resources*
2. *Public Participation*
3. *Park Master Planning*
4. *Costs and Implementation Strategy*

1. Inventory and Assessment of Natural and Man-made Resources

The existing park improvements, activity areas, and undeveloped natural areas of Suburban Park were explored and assessed through multiple site visits. Assessment considered location, orientation, condition, and age of facilities, compliance with the Americans with Disabilities Act (ADA), and compatibility with the park sites natural systems. Ferguson Township obtained a new topographic survey which was used to identify areas of steep slopes. Published sources were used to identify wetlands and 100-year floodplain. The municipal and regional setting was investigated to consider surrounding land uses and other influences on the park site. A site analysis map was developed that illustrated the limitations of the site associated with steep slopes and the 100-year floodplain.



2. Public Participation

Resident and stakeholder input was sought throughout the planning process to broaden the consultant's understanding of citizen's recreation interests and explore opportunities and issues associated with the park. Public input was gathered by working with a project Steering Committee, completing interviews with stakeholders, conducting an on-line opinion survey, and holding three public meetings.

3. Park Master Planning

The project was kicked-off with a Steering Committee meeting where project goals, existing user patterns, and site opportunities and limitations were discussed. Following the analysis of the site and input from key stakeholders and the first public meeting, conceptual alternative designs were developed. The three conceptual alternative designs illustrated different approaches to enhancing and developing Suburban Park to achieve community goals. The Steering Committee reviewed the conceptual alternatives and provided direction for the preparation of the pre-final design. The pre-final design was presented to the public for input at the second public meeting. The master plan update for Suburban Park was finalized based on the cumulative input of residents, municipal representatives, and the Steering Committee.

4. Costs and Implementation

Probable construction cost opinions and a phasing plan for implementing the recommendations of the master plan update over time were completed. The Steering Committee provided input to the phasing plan.



Community Background

Ferguson Township was formed in 1801 and was named for Thomas Ferguson, an early settler. The Township encompasses approximately 50 square miles and the 2010 U.S. Census population counted 17,690 residents. The 2018 American Community Survey estimated the population at 18,837.

The municipality has home rule governance and is a member of the Centre Region Council of Governments (CRCOG). CRCOG includes six municipalities in the State College Region. Ferguson Township surrounds State College Borough to the north, west, and south, home to Penn State University.

Suburban Park is one of 13 municipal parks owned by Ferguson Township. Municipal parkland totals approximately 270-acres and includes the 80-acre nature preserve of the former Ferguson Township Municipal Authority and the recently acquired 9-acre Songbird Sanctuary. The largest park is Tom Tudek Memorial Park at 87-acres. The municipal parks are acquired and developed by Ferguson Township. The CRCOG provides maintenance and recreation programming.



Inventory and Assessment of Natural and Man-made Resources

Suburban Park is a developed park site with a natural area located in the northern portion of the site. Most of the site is developed with recreation amenities and open lawn. A vegetative buffer separates the park from Vairo Boulevard.

General Site Data

Size/ Location

The park, as it exists today, is 13.75-acres in size and encompasses three parcels: the 10-acre main parcel, a 2.43-acre parcel contiguous to the northeast boundary, and a long narrow parcel adjacent to Vairo Boulevard.

Access

Vehicular access to the site is provided from the intersection of North Allen Street and Suburban Avenue.

Existing and Surrounding Land Use

The existing land use is a municipal park. Surrounding land uses include:

- Single family residential lots surround the park on the south and southwest sides.
- Undeveloped woodlands border the eastern side of the site.
- Dense residential apartments border the north, beyond Vairo Boulevard.

Zoning

The park site is in the R-1 Single Family Residential Zone.

Natural Resources

Vegetation

Mature trees are scattered throughout the park site. A woodland comprised of maple, and other deciduous trees with limited understory is located north of the bikeway that bisects the site.

Invasive Species

Invasive species were noted in the woodlands and sloped hillside bordering Vairo Boulevard. Controlling non-native invasive plants is important for the long-term health of the woodland vegetation.

Soils

Site soils contain few limitations to park development. Site soils include:

	Soil Type	Slope	Comments
HaB	Hagerstown Silt Loam	3 to 8 percent slopes	Few limitations. 20-40" to bedrock.
HaC	Hagerstown Silt Loam	8 to 15 percent slopes	Few limitations including slope. 20-40" to bedrock.
HcB	Hagerstown Silty Clay Loam	3 to 8 percent slopes	Few limitations
HcC	Hagerstown Silty Clay Loam	8 to 15 percent slopes	Limitations include slope, silty clay loam surface.
HuB	Hublersburg Silt Loam	3 to 8 percent slopes	Few limitations.
HuD	Hublersburg Silt Loam	15 to 25 percent slopes	Limitations include slope and erodibility.
No	– Nolin Silt Loam, Local Alluvium	0 to 5 percent slopes	Potential for flooding.

Topography

The park site generally sheet flows steeply from northeast to southeast and from southeast to northwest to the drainage swale bisecting the site. A significant portion of the park site is dominated by steep slopes, interrupted by areas leveled for improvements. The Slope Analysis Map on page 26 illustrates the slopes in excess of 10 percent.

Drainage Patterns

A drainage swale bisects the park site, flowing from the southwest portion along Vairo Boulevard, across private property to enter the main park via a culvert beneath the park access drive. The swale is directed to an undersized culvert beneath the outfield of the baseball field, which outlets south of the tennis courts. This culvert impedes the free flow of drainage and results in flooding in the park during major rain events. The drainage swale extends from the culvert, overland, to the existing culvert beneath the bicycle trail separating the wooded northern portion of the park. The park site slopes toward the drainage swale. Offsite drainage from the south flows via a culvert to the park and combines with the main drainage swale.

The drainage swale is prone to periodic flooding during large storm events and contains a 100-year floodplain. Several preliminary studies were completed by students of Penn State University, Department of Agricultural and Biological Engineering. These studies provided preliminary baseline information for the floodplain and set parameters for remediation. Approximately 30 percent of the site is within the 100-year floodplain.

Man-made Resources and Influences

Recreation Facilities

- Baseball Field** – A youth baseball field is centrally located near the entrance to the park site. The field is a 60' baseline with a 185-foot outfield fence. The field is at an acceptable orientation equipped with players benches and aged chain link back stop and side line fencing. Outfield fencing is provided.
- Tennis/Pickleball Courts** – Two tennis courts with overlapping pickleball courts are provided northeast of the baseball field. The courts are oriented along the northeast/southwest access. A ten foot tall perimeter fence is provided. The court surfacing is in fair condition with some cracking.

Playground

A playground area is in the central portion of the site, on the north side of the drainage swale in a shaded area. Play equipment is in good condition. Mulch safety surfacing is provided. Independent playground (slide and swings) equipment is provided on the south side of the drainageway. This equipment is aged and does not have adequate safety surfacing.

Pavilion

An aged wooden picnic pavilion is provided convenient to the playground area. The wood structure is situated over a concrete pad. The pavilion houses four picnic tables.

Basketball Court

A basketball court is developed on the south side of the drainage swale, immediately southeast of the tennis courts. The court is oriented east to west, which is not ideal for solar optimization. The court surface and goals are in very good condition. No perimeter fencing is provided.

Trails

One linear trail is provided along the northwest edge of the site. The trail extends from the existing parking area travelling northeast, connecting the baseball field, tennis courts, picnic pavilion, and playground area before making a sharp S-turn and connecting to a paved bicycle trail in the northeast. The bicycle trail connects Vairo Boulevard in the northwest to East Aaron Drive, just outside of the southwest corner of the park site. The bike trail provides an indirect connection to the Penn State University Arboretum and Bellefonte Central Rail Trail, to the east of the site and connection to Penn State University campus to the southeast. Both the park trail and bike path are not accessible due to steep slopes.

Sledding Hill

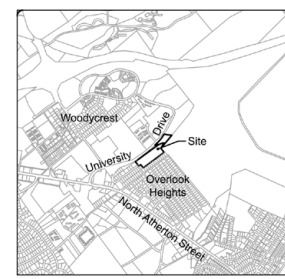
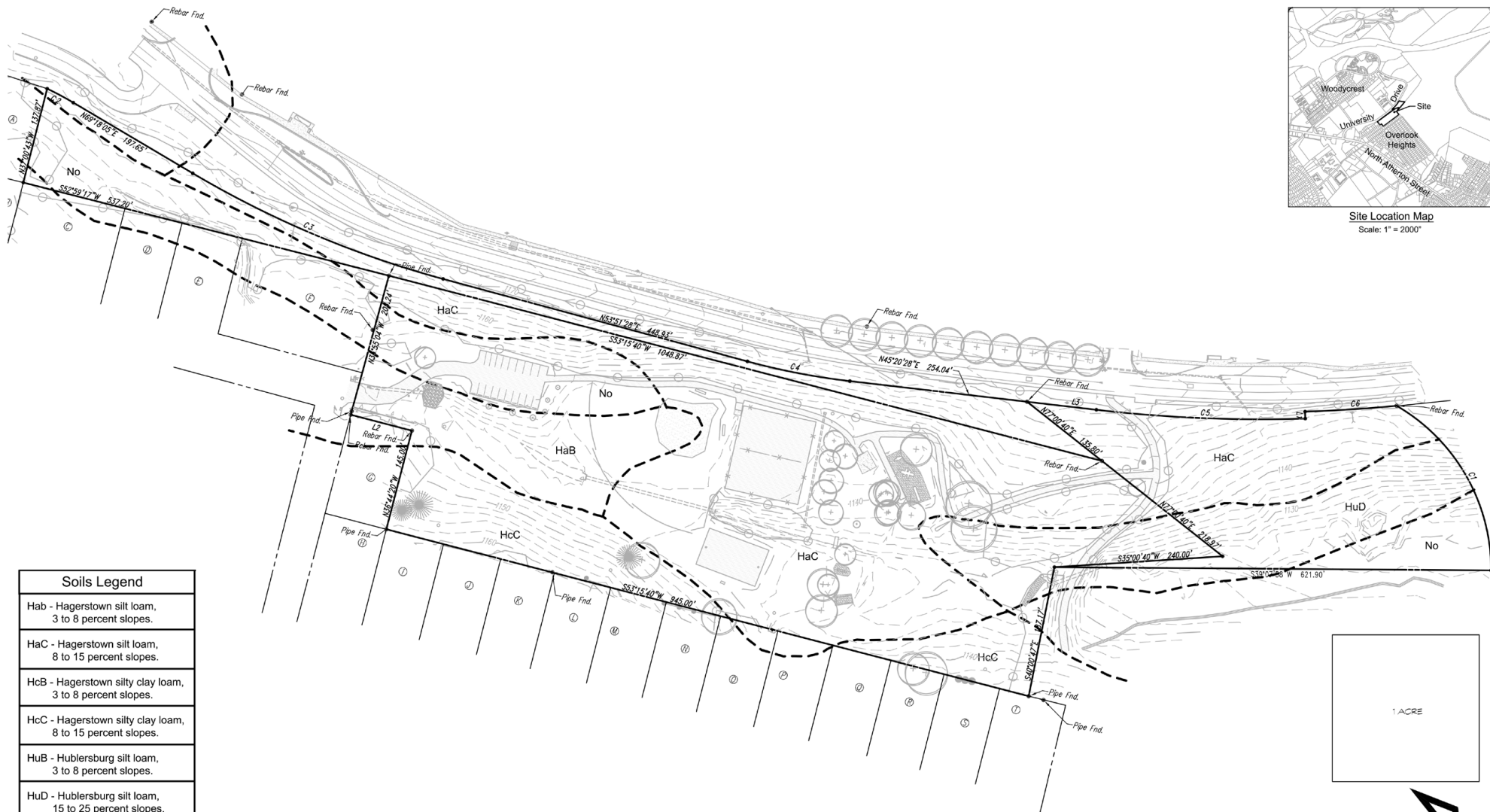
The southeastern corner of the site is a well know sledding hill. The north facing slope and topography are well suited for this winter activity.

Support Facilities

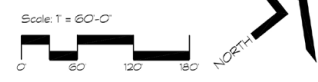
- **Entry Drive and Parking Area** – A paved, twenty car parking area is provided in the southwest corner of the site. The parking area is benched into the hill, with a steep drop off the southeast edge and direct connection to the main park trails.
- **Drinking Fountain** – A drinking fountain is provided at the entrance to the tennis courts. The fountain is accessible and conveniently located.
- **Entry Sign** – An entry sign greets visitors at the vehicular entrance to the parking area. The attractive sign is complimented with landscaping.
- **Portable Restroom** – A portable restroom is provided on the northeast side of the tennis courts with access to the trail.
- **Bridge** – A small wood bridge provides access across the drainage channel midway through the site. The bridge and railings are not ADA compliant and the bridge is not connected to the park’s trail system.

Utilities

- **Sewer Line** – A new sanitary sewer line was recently installed along the eastern boundary of the site. A sanitary sewer line exists at the toe of slope on the northwest side of the baseball field and tennis courts.
- **Water** – A water line enters the site on the northwest side of the parking area. The water line extends to the drinking fountain at the western corner of the tennis courts.
- **Electric** – No existing park facilities are lighted. No electric service was evident in the park, although electric service is readily available from the surrounding developed areas.



Soils Legend	
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HaC	- Hagerstown silt loam, 8 to 15 percent slopes.
HcB	- Hagerstown silty clay loam, 3 to 8 percent slopes.
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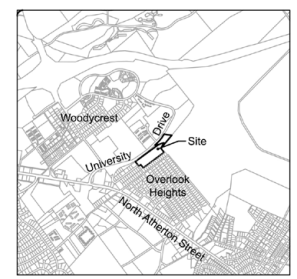
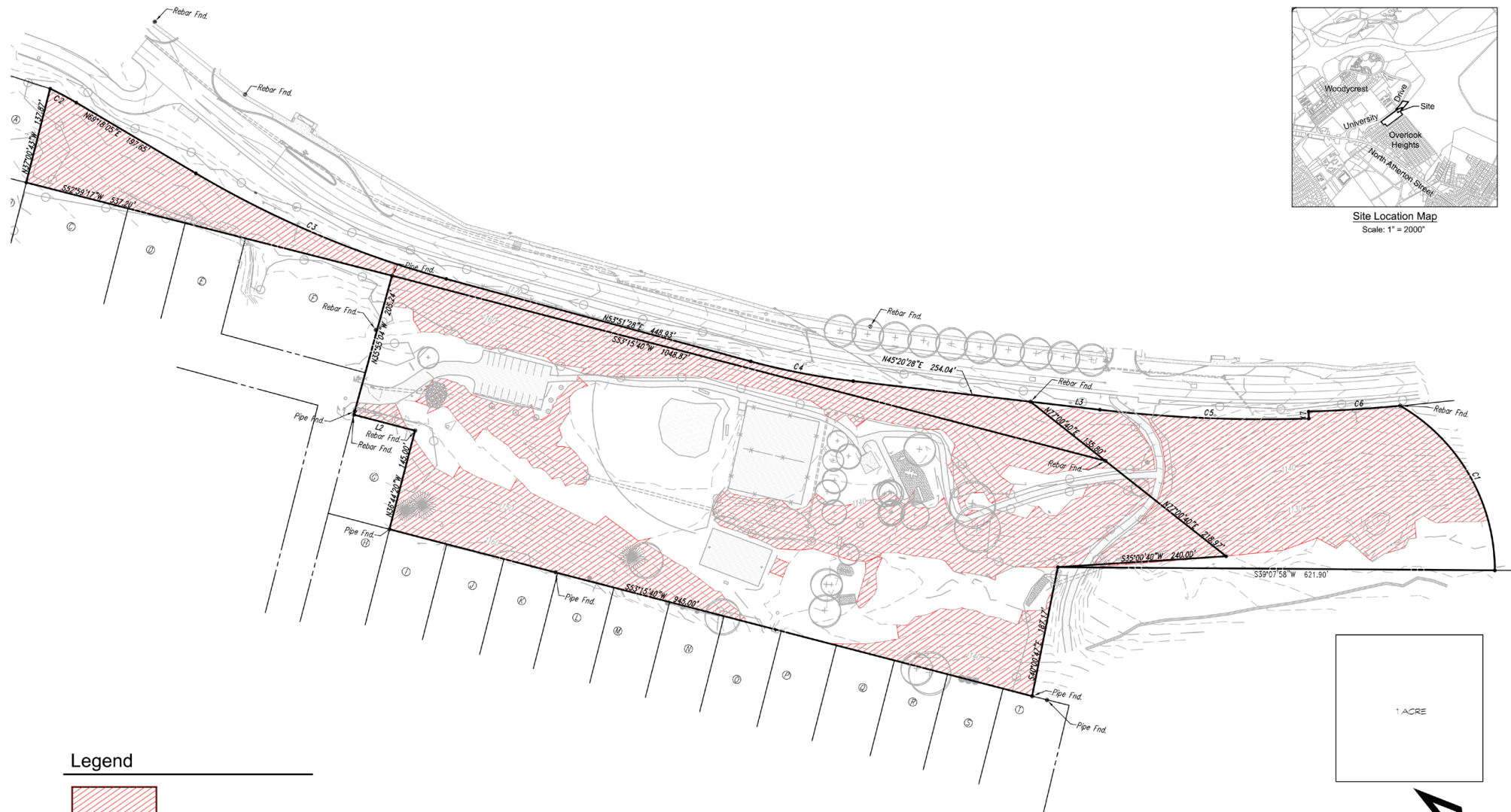


Suburban Park Soils Map

Ferguson Township, Centre County, Pennsylvania October 2018

Prepared For: **FERGUSON** Pennsylvania

Prepared By: **ysm** Landscape Architects
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Site Location Map
Scale: 1" = 2000"

Legend



Steep Slope (Greater than 10%)



Scale: 1" = 60'-0"

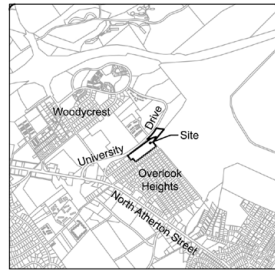


Suburban Park Slope Analysis Map

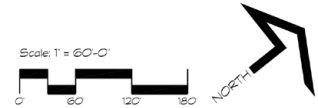
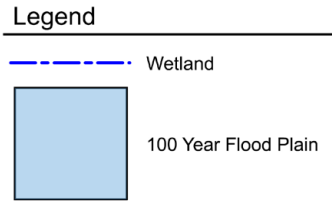
Ferguson Township, Centre County, Pennsylvania October 2018

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Site Location Map
Scale: 1" = 2000"



Suburban Park Flood Plain Map

Ferguson Township, Centre County, Pennsylvania October 2018

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Site Analysis Conclusions

The site analysis plays a critical role in determining the best uses for the park site. Good park design and master planning are born of a comprehensive analysis of existing site conditions. Key conclusions of the site analysis include:

- The floodplain bisecting the site should be respected in the design. The undersized culvert beneath the baseball field creates a drainage obstacle and should be removed and drainage returned to free-flow through the site. Removal of the culvert will impact existing park facilities.
- The floodplain through the park should be designed to safely handle the 100 year flow. Best Management Practices (BMP's) should be explored to offset nutrient levels in the park.
- A significant portion of the site contains slopes in excess of 10 percent which will be a challenge for adding facilities and meeting the requirements of the Americans with Disabilities Act (ADA). The gentle site topography is developed with park facilities. Steep slopes will dictate where and how facilities can be introduced and modified in the park.
- The park hillsides are encumbered with invasive plant species. These detrimental plants should be eradicated from the site and replaced with native species.
- Numerous mature shade and ornamental trees are established in the park site. These trees should be maintained, as possible. Unhealthy and hazard vegetation should be removed.
- Buffers should be added to screen residential yards along the south and southwestern border.
- The wooded portion of the northern end of the site offers a different experience and should be available for exploration by park visitors.
- The picnic pavilion is aged and replacement should be considered.
- The tennis courts and perimeter court fences are in good condition. Court resurfacing should be in the budgeted within the next five years.
- The baseball field is well used and should be maintained. Some minor drainage improvements should be implemented to address poor drainage around the infield. A new backstop should be considered along with a protected, spectator viewing area.
- The basketball court is in excellent condition. Perimeter fencing should be considered to prevent errant balls from rolling downhill. An accessible trail to the court should be provided.
- The parking area seems adequate for day to day use, however, baseball gamedays result in visitors parking in the street. Additional parking should be considered.
- The shades areas around the playground provide a nice setting for picnic and informal recreation.
- The existing playground is not age segregated and the safety surfacing fall zones appears short. Edging to contain the safety surfacing should be considered and the safety areas expanded to meet fall zone limits. Play equipment on the south side of the drainage channel should be removed.
- Trails should be extended from the parking area to all recreation facilities and activity areas to provide an accessible route in compliance with the ADA. Trails should follow the contour and have a maximum slope of 5 percent.
- The bikeway provides connections to regional destinations such as the Bellefonte Central Rail Trail and the Penn State Arboretum. The bikeway also provides a culvert crossing of the drainage swale. Consider trail connection on the south side of the drainage swale to develop a loop trail system. An access easement will be required at the southeast offsite connection.
- A restroom building should be considered to serve the park. Sanitary sewer and water are available in the park.

Public Participation

Public participation was the foundation of the planning process for the Suburban Park Master Plan Update. The four public engagement strategies and findings are described below.

Ferguson Township Steering Committee

Ferguson Township assembled a Steering Committee to guide the park planning process. Committee members included municipal staff, residents of the Overlook Heights neighborhood, and representatives of Ferguson Township Parks and Recreation Committee, Centre Region Parks and Recreation, and the Centre Region Parks and Recreation Authority. The Steering Committee provided input throughout the park master planning process, working with the consultant team to explore opportunities and address issues. The Steering Committee members were familiar with the park setting and knowledgeable about how the park is used.

Key Person Interviews

The consulting team conducted key person interviews to obtain input from project stakeholders and interested citizens. Input was gathered from Millbrook Marsh Nature Center Recreation Superintendent, Centre Region Park & Recreation Director and Maintenance Superintendent, Patton Township Public Works Project Manager, residents of the Overlook Heights neighborhood, University Area Joint Authority, State College Pickleballers, State College Little League, Ferguson Township engineer, Penn State Arboretum, and others. Interviewees were provided a brief background on the project and asked questions relative to their interest in the park.

Online Opinion Survey

An online opinion survey was developed to provide an opportunity for residents to share their opinions about their priorities for Suburban Park enhancements. Ten survey questions were composed with input from the Steering Committee. The survey was available on-line for 69 days. The survey was promoted at the first and second public meetings and on the Ferguson Township website. The survey garnered 80 responses.

Survey findings include:

- When asked what experiences you are looking for when visiting Suburban Park, most responses indicated Experiencing and enjoying nature (71.62%), followed by Trail connections to nearby destination(s) (63.51%), and Fitness and wellness (exercise, running) (59.46%).
- Respondents indicate that they visit Suburban Park Occasionally (45.57%), followed by Weekly (22.78%).
- When asked what do you think should be the Township's priority for Suburban Park, the highest responses were Maintain recreation facilities (57.97%) and Enhance naturalized areas (57.97%), followed by Improve existing recreation facilities (43.66%), and Develop additional trails (42.03%).
- Respondents indicated that it is Very Important to expand or add the following facilities to Suburban Park: Restrooms (63.24%), Natural Play Area (60.94%), Trails for running, jogging, bicycling, cross-country skiing (56.52%), and Sitting Areas (53.03%). When Very Important and Somewhat Important responses are combined the highest responses were: Restrooms (94.12%), Informal Picnic Areas (88.89%), Sitting Areas (87.88%), Picnic Pavilions (86.57%), Trails for running, jogging, bicycling, cross-country skiing (86.40%), and Natural Play Areas (85.94%).
- 52.86 percent of respondents indicated that the maintenance and cleanliness of Suburban Park is Good.
- One-hundred percent of respondents indicate that they feel safe in Suburban Park.
- When asked what prevents you from visiting Suburban Park, the highest response was Other (32.14%), followed by Recreation Facilities Do Not Interest Me (25.00%), Too Busy (23.21%), and Difficult to Access (19.64%).
- 38 respondents provided additional comments.

Public Meetings

Three public meetings were held to solicit input and present project findings to residents. The consultant team narrated a PowerPoint presentation at each public meeting, which included an overview of the Suburban Park site, explanation of the master planning process, and outline of the next steps as the project progressed. The focus of the public meetings was public input and time was allotted at the conclusion of each presentation for input from attendees.

Public Meeting #1

The first meeting was scheduled early in the planning process to gather general input from the public regarding their ideas and concerns about Suburban Park. The meeting was held on November 5, 2018 at the Ferguson Township building. Approximately 20 citizens attended in addition to members of the Steering Committee and municipal staff. The consultant team facilitated a discussion that explored ideas and opportunities for Suburban Park and current issues with the park.

Public Meeting #2

The second public meeting was held on January 17, 2019, approximately mid-way through the planning process. The meeting was held at the Quality Inn on Atherton Street, located in close proximity to the park site and convenient for neighborhood residents to access. Approximately 25 citizens attended the meeting, as well as members of the Steering Committee and municipal staff. The consultants presented the Pre-Final Master Plan and facilitated discussion from attendees.

Public Meeting #3

The third public meeting was held on March 27, 2019 at the Quality Inn on Atherton Street. Approximately 20 citizens attended. The final Suburban Park Master Plan Update was presented for comment.

Findings of the Public Participation Process

The following summarizes the input and findings of the public participation process:

Protect and Enhance Natural Resources

Residents desire opportunities to enjoy nature and spend time in healthy activities outside. The stormwater runoff that flows through the site is viewed as a major issue. Improvements should address flooding, promote groundwater infiltration, and incorporated a naturalized drainageway into the site design. Informal trails should explore the undeveloped natural area on the east side of the site. Existing native vegetation should be maintained and invasives removed.

Recreation Need and Facilities

There are diverse users of the park to include individuals, young families with children, young adults, older adults, and teams. The playground, basketball court, baseball field, tennis courts/pickleball courts and picnic opportunities were all viewed as popular facilities that should remain in the park.

Walking is a popular activity and loop trails are desired. Picnic opportunities rank high in the opinion survey. A preference for natural play opportunities were voiced by numerous residents. The open space used for sledding in the winter should remain.

Park Linkages

The existing trail linking Vairo Boulevard to the south side of the park is an important bicycle route link for students living in Patton Township to travel to Penn State University. The link also provides access to Penn State Arboretum, a popular destination for walking.

Relationship to Surrounding Land Use

The park surrounds residential home sites on two sides and a buffer should separate the uses where desired by neighbors. Some neighbors commented that they enjoy the open view into the park. The existing vegetation along Vairo Boulevard should be maintained and enhanced to provide a buffer from the traffic and noise.

Conceptual Alternatives

Conceptual alternative designs were completed for Suburban Park with consideration of the goals established by the master planning process, the analysis of the park site and surrounding area, and public input.

The Conceptual Alternative designs explored different options for park development and site enhancement and illustrate potential facility configurations and spatial relationships.

Three Conceptual Alternative Designs were prepared for Suburban Park. Each Conceptual Alternative is described below:

Conceptual Alternative A

Conceptual Alternative A maintains the baseball field with improved spectator viewing areas and batting cage. The existing tennis courts, playground areas and basketball court are removed. The plan adds a new basketball court, nature themed playground area which connects to the stream channel, three dedicated pickleball courts, three-hole disc golf course, warming hut adjacent to the sledding hill, new picnic shelters, and expanded parking along the existing access drive. The drainage swale is diverted around the baseball field and naturalized with native meadow grasses.

Conceptual Alternative B

Conceptual Alternative B maintains the T-ball field with improved players area and backstop and maintains the tennis courts. The existing playground areas and basketball court are removed. The plan adds two half-court basketball courts, nature themed playground area which connects to the stream channel, and new picnic shelters. The drainage swale is diverted around the baseball field and naturalized with native meadow grasses.

Conceptual Alternative C

Conceptual Alternative C removes the baseball field, tennis courts, playground areas and basketball court. The plan adds new two tennis courts, two pickleball courts, an age segregated playground, restroom building, teen area with half-court basketball, and nine-hole disc golf course. The drainage swale bisecting the site is naturalized with native meadow grasses.

The Steering Committee reviewed the Conceptual Alternatives and provided input and direction for the design of the Pre-Final Master Plan. The committee offered the following guidance for development of the Pre-final Master Plan.

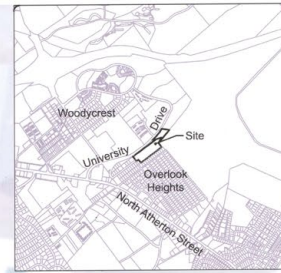
- The baseball field should be maintained, but the outfield could be shortened to allow passage of the drainage swale while allowing for other field uses. Maintain an area for a batting cage if possible.
- Maximize the parking within the site along the access drive.
- Prefer the loop trails. Trail loops internal to the park should be maintained and mid-park connection added as shown on Conceptual Alternative B.
- Keep the tennis courts. Provide stripping for pickleball too.
- Keep a full-size basketball court in the park. The location between the existing playground and bike trail should be explored as shown on Conceptual Alternative A.
- The size of the site does not accommodate disc golf. Disc golf should be removed from the plan.
- The warming hut was questioned. Circleville Park, in Patton Township, was provided as a reference for a warming hut. The Ferguson Township Code should be reviewed if open burning is permitted.
- The wooded area on the north side of the bike trail should be maintained as a natural area. Consider development of earthen trails.
- A nature-themed playground is preferred. The playground should be a hybrid of natural play elements and traditional play equipment.



Suburban Park Master Plan - Conceptual Alternative A
 Ferguson Township, Centre County, Pennsylvania November 2018

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Site Location Map
Scale: 1" = 2000'

Suburban Park Master Plan - Conceptual Alternative B
Ferguson Township, Centre County, Pennsylvania November 2018

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Suburban Park Master Plan - Conceptual Alternative C
 Ferguson Township, Centre County, Pennsylvania November 2018

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Pre-Final Master Plan

The Pre-Final Master Plan was developed for Suburban Park to reflect input from the Steering Committee and general public. The pre-final design is a consolidation of the ideas and input from review of the Conceptual Alternatives into one cohesive master plan for the park site. The Pre-Final Master Plan was presented to the Steering Committee and suggestions were made to the plan prior to presentation at the second public meeting. The meeting was attended by residents, municipal representatives, and Steering Committee members. Public comment regarding the Pre-Final Master Plan included:

- Provide a backboard at the tennis court for individual play and practice.
- Provide a dedicated pickleball court.
- Favor the playground interaction with the creek.
- Provide additional plantings to buffer road noise.
- A concern was raised regarding ticks in the native grass meadows. Select plant species that that can minimize impact and mow one mower-width along trail in meadow areas.
- Develop a policy for dogs on leash in the park.
- Consider a path to the top of the sledding hill.
- Consider parking near the basketball court.
- Provide bicycle parking.
- Provide additional space/buffer between the trails and residents along the southeast property line.
- Consider adding a butterfly garden.
- Provide bleachers at the baseball field.
- Provide a budget for addressing invasive plants.
- Provide convenient access for maintenance of the playground.
- Provide grills.
- Maintain a drinking fountain.
- Provide for bird watching.
- Add a bike fixing station on the bikeway.
- Plant more evergreens to buffer residents.



Suburban Park Master Plan - Pre Final

Ferguson Township, Centre County, Pennsylvania March 2019

Prepared For:



Prepared By:



Suburban Park Master Plan Update

The Suburban Park Master Plan Update envisions a neighborhood park that continues to serve the Overlook Heights neighborhood. The park maintains and updates popular recreation facilities and enhances natural aspects of the park setting. The drainage channel is widened and naturalized to better accommodate runoff. Proposed recreation improvements target activities desired by residents to enhance the enjoyment of visiting the park.

Guiding Principles

The following guiding principles were defined for the Suburban Park Master Plan Update, based on the findings of the planning and public participation process:

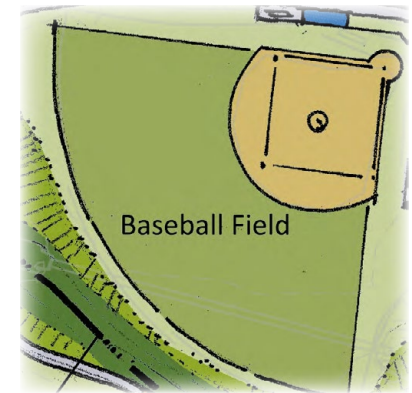
- Maintain existing recreation facilities enjoyed by residents and enhance facilities to meet current safety and accessibility standards.
- Enhance the convenience of using the park.
- Improve the setting to accommodate the stormwater runoff that flows through the park.
- Maintain and enhance the natural resources of the site.
- Explore opportunities to expand the natural aspects of the site and incorporate nature into play areas and along trails.
- Develop loop trails to encourage walking and healthy activity.

Traditional Recreation Opportunities

Youth Baseball Field

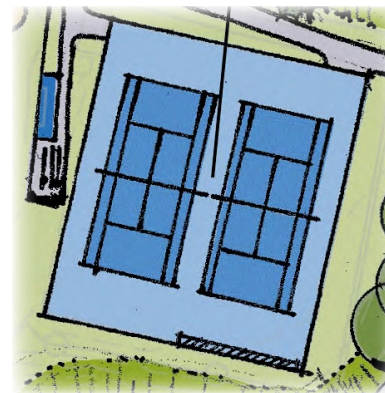
The baseball field is maintained in its current location, and will continue to serve T-ball and coach-pitch league use.

The existing culvert is removed from the outfield and the outfield fence is located at 180-feet to accommodate the re-routed drainage swale. The backstop, sideline fence, and players areas are upgraded, and bleachers are built into the slope on the first-base side, west of the park trail.



Tennis Courts/Pickleball Courts

The tennis courts are maintained and are stripped for both tennis and pickleball use. A backboard is developed on one court for individual practice. Pickleball is growing in popularity in the region and there have been request for dedicated pickleball courts in Suburban Park. Public input indicates that the tennis courts are used as well, so the dual stripping is recommended. The orientation of the courts is slightly skewed from the preferred north-south orientation.



Basketball Court

The existing basketball court is the only recreation facility located east of the drainage swale. The master plan widens the drainage swale, displacing the basketball court. The court is relocated on the western side of the park. A single full-size court (50' x 74') is developed with terraced seating at the existing hillside. The court has an orientation that is slightly skewed from the preferred north-south orientation to accommodate the existing topography.

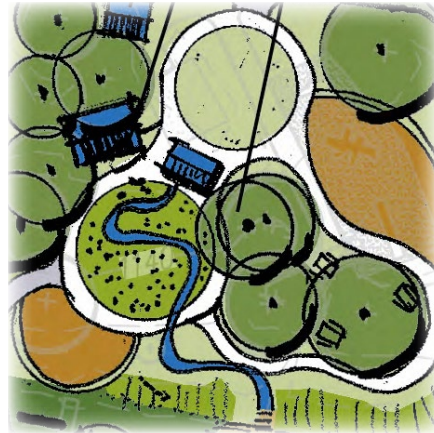


Picnic Pavilions

Replace the existing pavilion with a larger structure, sized to accommodate 8-10 picnic tables. Locate the pavilion in the same general area to serve visitors to the playground. Add a second pavilion on the east side of the drainage corridor at the plateau previously occupied by the basketball court. This structure should be smaller to accommodate approximately four picnic tables. Consider modern structures with a metal roof that could add color to the park and have an extended life cycle. Locate horseshoe pits near the smaller pavilion to complement picnic activities.

Playground

Develop an expanded playground area that has both traditional play equipment and a natural play environment. Mature trees in the playground area are maintained to provide shade and an intimate setting. The playground is conceived to interact with the site's natural features and connect children to the small drainage channel and restored floodplain.



Opportunities for learning at this site include stream restoration, water conservation and reuse, native plantings, and butterfly gardens. Suggested features in the playground include native plantings, stone and log steppers, embankment slide, and traditional playground equipment. Rainwater harvesting, including rain barrels and cisterns are suggested to collect rainwater for interactive water play.



Sledding Hill

The hillside at the southeast corner of the park is maintained as an open meadow to retain sledding opportunities.

NATURE PLAY AREAS

Nature play areas integrate natural areas and elements into playscapes. Nature playgrounds encourage children to interact with nature, explore natural systems, get dirty, and learn through play and discovery. Natural elements – logs, climbing boulders, streams and ponds, trees, flowers, and shrubs are included to create unique play opportunities. Nature play incorporates opportunities for learning about the environment- pollinator gardens, bird and bat houses, and stream-side access for hunting crayfish promote interaction with nature and learning through play. Unique elements might include vine covered arbors for intimate storytelling, stepping stones and logs for balance games, and loose materials for imaginative play. Nature play areas encourage children to engage their senses and imagination, explore and discover, and gain an appreciation for the natural world in their neighborhood.

Trail System

The existing trails are extended to provide dual loop trails that encircle the main portion of the park. The trails are developed at eight-foot wide and meet ADA criteria for an accessible route. An earthen trail loop is developed to explore the northern natural area of the park. The trails provide opportunities to walk, access facilities, and explore the outdoor setting. Three bridges are developed to cross the drainage swale and two areas of boardwalk are depicted to carry the trail in areas of drainage flows. The trails connect to the existing bike path that extends from Vairo Boulevard to Aaron Street.

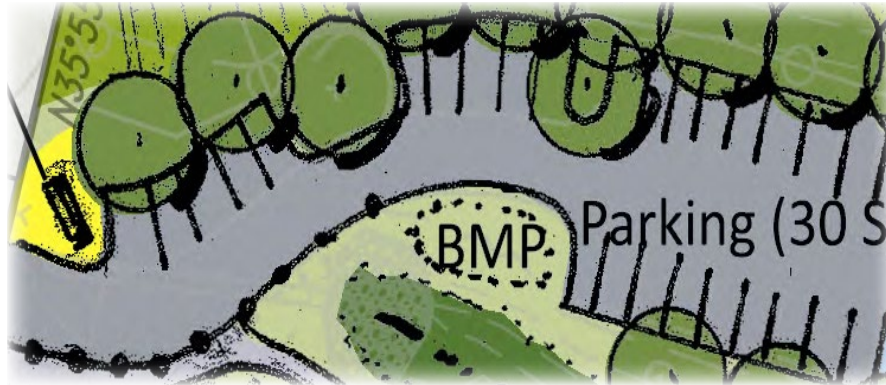
Support Facilities

Restroom

A restroom is developed along the trail at the playground area. The location is central to the park. Water and sewer lines will be extended along the trail to the building.

Parking

The existing parking area is expanded by ten spaces along the park drive. The park sign will need to be re-established closer to the North Allen Street/Suburban Street intersection.



Drinking Fountain

The existing drinking fountain near the tennis courts will remain. A water bottle filler is suggested at the restroom building.

Entry Plaza

A plaza is developed at the northern end of the parking area with an information kiosk, benches, and bike rack. The plaza provides a meeting area for visitors and the kiosk can display information such as trail length, park policies, etc.



Bike Plaza

A second plaza is developed along the bike trail leading from Vairo Boulevard. This plaza has a bike repair station and bike rack.

Mile markers

Mile markers should be located along trails to identify trail length in one-tenth-mile intervals.

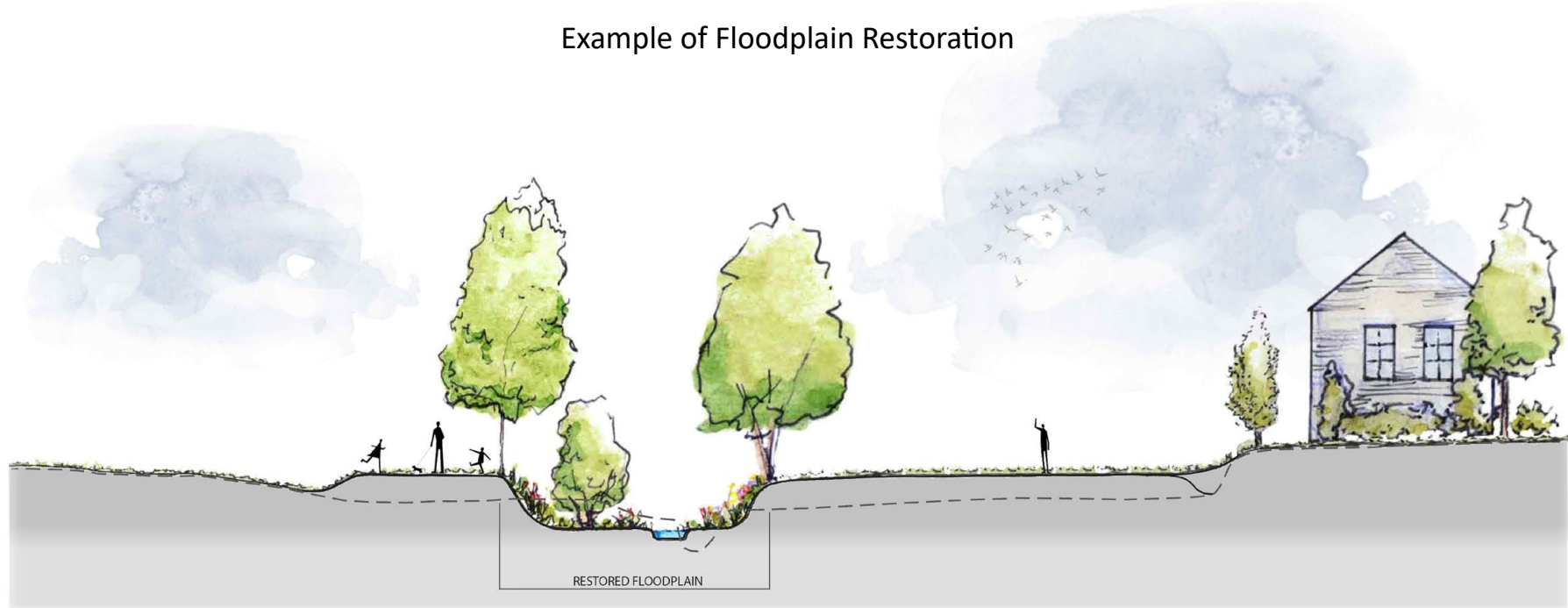
Park Signs

- **Park Entry Sign** – The parking expansion will require the park entry sign to be relocated. The sign should include the park name, township name, and CRPR logo.
- **Interpretative Signs** – Interpretative signs are suggested to provide information about natural features of the park. Potential interpretative signs include:
 - Meadow planting
 - Drainage corridor and groundwater recharge
 - Value of natural play
 - Stormwater BMP's

Natural Resource Enhancement / Sustainable Green Components

- Landscaping should be introduced to solve problems and enhance the visual image and function of Suburban Park. Proposed improvements should be located to avoid impact to mature trees. Landscaping should be located and maintained to buffer nearby residential neighbors and noise from Vairo Boulevard. Landscaping should aesthetically enhance the park setting and minimize maintenance. Strategies to minimize maintenance include locate elements such as signs within landscaped beds, establish continuous mow lines, establish no-mow and low-mow areas that are established as wildflower and native grass meadows. Where landscaping is introduced into the park, native plant material should be used. Plant material native to Centre County is adapted to the geographic location and, as a result, will require less maintenance, withstand the extremes in climate change, be less susceptible to disease and pests, and propagate naturally. Native plant material will provide needed habitat and food for small mammals and birds, and help reduce the opportunity for exotic species to establish a foothold on the site. Citizens have voiced interest in butterfly gardens and pollinator gardens, and these themed planting areas could be established near the playground, close to the drainage channel.
- Consideration should be given to using porous unit paver pavement that infiltrates stormwater runoff in new paved areas of the park to include the entry hub, bike plaza, and the plaza in the playground area.

Example of Floodplain Restoration

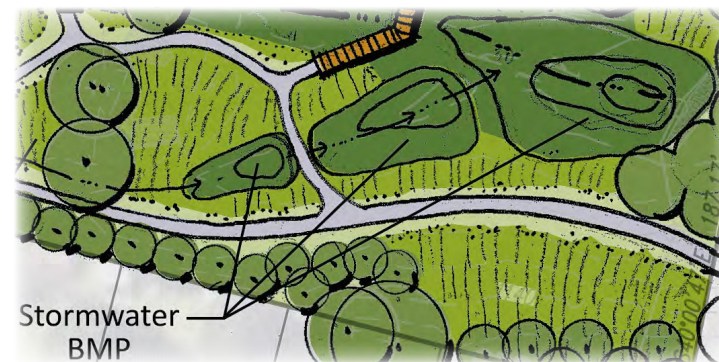


SECTION VIEW

— Proposed Grade
 - - - Existing Grade

HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 10'

- Restore the floodplain to safely pass the 100-year storm event through the park site. A two-stage channel is proposed to convey the flow. A low flow channel will convey the smaller storms while a large, over excavated floodplain will contain the larger 100-year events. The larger channel will be broad and shallow and promote natural groundwater recharge.
- Native meadow plantings are introduced along the drainage channel and on the eastern hillside. The meadow areas provide habitat for butterflies, insects, birds, and small mammals and also reduces maintenance associated with lawn mowing. The meadow plantings stabilize the low-flow drainage channel.
- The existing vegetation along Vairo Boulevard and the northern wooded area should be investigated for invasive species. Invasive species should be removed, and open areas replanted with native species compatible with the setting. Invasive species monitoring and removal efforts should be ongoing.
- Open bottom culverts that maintain natural drainage bed for wildlife movement and infiltration.
- Drainage BMP's such as rain gardens and broad swale infiltration areas are introduced along drainage routes to manage stormwater runoff and promote infiltration and groundwater recharge.



Sustainability & Green Design Considerations

Sustainability is a widely accepted concept that is often integrated into park development. Sustainability recognizes the impact of human actions on the natural world and promotes actions that align with conservation principles. Parks present opportunities to demonstrate and share environmental concepts which educate citizens about their role in the environment. Parks should be developed with a sustainable site design approach that incorporates strategies that are ecologically based and compatible with the natural systems of the site. Sustainable park development strives to repair and restore site systems and respect the function and process of the natural world.

The master plan incorporates green and sustainable design principals into Suburban Park. Development should strive to minimize impacts on natural resources and use products developed from renewable materials. Park development should integrate native landscapes, promote biodiversity, enhance habitats, promote reforestation, develop areas that were previously disturbed, and use BMP's.

SUSTAINABLE DESIGN

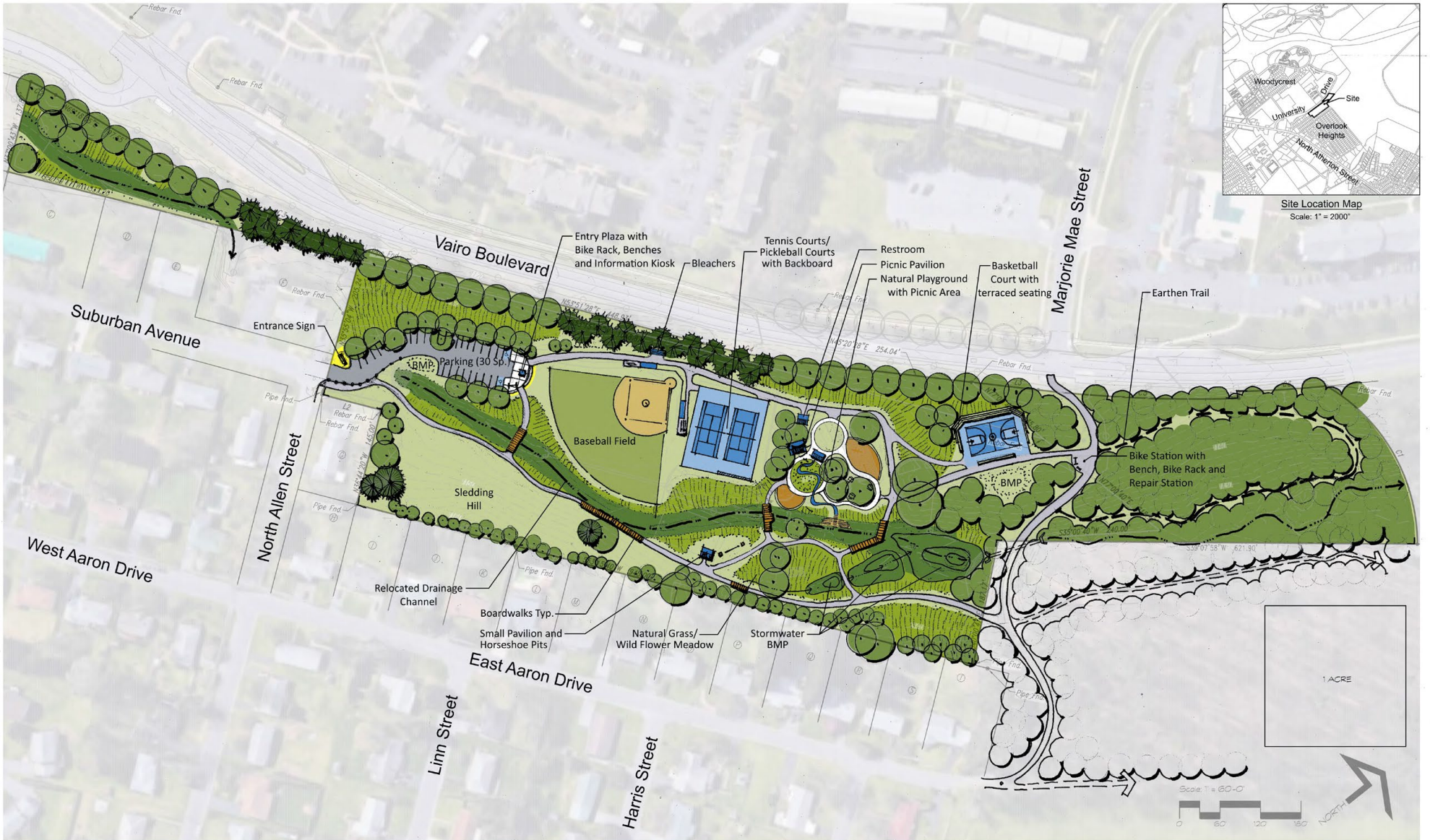
Sustainable design is a concept that recognizes human civilization is an integral part of the natural world and nature must be preserved and perpetuated if the human community is to sustain itself indefinitely. Sustainable design is the philosophy that human development should exemplify the principles of conservation, and encourage the application of those principles in our daily lives.

SOURCE: GUIDING PRINCIPLES OF SUSTAINABLE DESIGN

Americans with Disabilities Act - ADA

Americans with Disabilities Act – ADA – The US Department of Justice and the Access Board has accessibility requirements that apply to facilities in a public setting. ADA requirements for Suburban Park include:

- **Accessible Routes** – An accessible route must be provided from an accessible parking space to facilities and activity areas in park settings. An accessible route should be developed to be firm, stable, and slip resistant with a running slope that does not exceed 1:20 feet or 5 percent slope. The cross slope shall not exceed 2 percent. The minimum width for an accessible slope is five-feet to allow two-way travel. The trails in Suburban Park are envisioned to be eight-feet wide bituminous paved trails. The majority of the existing park trails comply with ADA requirements, although an area north of the existing playground was noted as exceeding the maximum slope. The slope should be brought into compliance as possible while preserving the adjacent mature trees and an alternative route established if the required slopes cannot be achieved.
- **Picnic Facilities** – Newly constructed picnic facilities shall provide accessible picnic units (outdoor space used for picnicking). Where picnic facilities contain two or fewer picnic units, each picnic unit shall be accessible. Where picnic facilities contain more than two picnic units, at least 20 percent but not less than two of the picnic units shall be accessible.



Suburban Park Master Plan
 Ferguson Township, Centre County, Pennsylvania March 2019

Prepared For:
 Township of FERGUSON Pennsylvania

Prepared By:
 ysm
 Landscape Architects
 15 South Newberry Street
 York, Pennsylvania 17403
 (717) 833-9999
 www.y-sm.com



Suburban Park Master Plan - Master Plan Detail
 Ferguson Township, Centre County, Pennsylvania March 2019

Prepared For:
 **FERGUSON**
 Pennsylvania

Prepared By:

 Landscape Architecture
 18 South Broadway Street
 York, Pennsylvania 17403
 (717) 832-8559
 www.ysma.com

Park Development Costs and Phasing

Achieving the vision presented in the master plan for Suburban Park will require significant capital expenditures and dedication of Township staff. As with most government investment in recreation facilities, it is anticipated that the investment will occur in phases over several years. To guide the enhancement of Suburban Park, cost estimates have been prepared to correspond to the various phases of development as determined by the Steering Committee.

The Phasing Plan on page 30 illustrates the proposed phases. The proposed phases include:

- **Phase A1** – The drainage improvements associated with creating a free-flowing drainage channel through the park are the primary feature of this phase. Stormwater BMP’s associated with the channel and proposed bridge/boardwalk crossings are part of this phase.
- **Phase A2** – The outer trail loop is developed. Expansion of the parking area, developing the entry plaza, and improvements to the baseball field are included. The basketball court is developed.
- **Phase B** – The enhancements to the tennis/pickleball courts and establishing a natural play area are the main features of this phase of development. The picnic pavilion and restrooms building are developed in this phase.
- **Phase C** – The eastern picnic pavilion and horseshoe pits, traditional playground area, and remaining trail extensions are included in the phase.
- **Floating Phase** – The landscape and buffer planting and earthen trail that explores the northern wooded portion of the park are enhancements that could occur as a stand-alone phase or be added to the other phases as funds permit.

Suburban Park Development Phase Summary	
Phase A1	\$ 325,161
Phase A2	\$ 516,154
Phase B	\$ 605,936
Phase C	\$ 220,065
Floating Phase	\$ 121,125
Total	\$ 1,788,441



Landscape Architects

Commonwealth of Pennsylvania
Department of Conservation and Natural Resources
Bureau of Recreation and Conservation

PROBABLE CONSTRUCTION COST OPINION
Suburban Park

Grantee: Ferguson Township
Project Title: Suburban Park

Date Prepared 4/18/2019
DCNR Project No.

Item No.	Work Item - Phase A1	No. of Units	Unit Cost	Total Cost
1	Demolition/Site Preparation			\$14,520
	A. Remove Existing Basketball Court	1 LS	\$5,500.00	\$5,500
	B. Remove Existing Pedestrian Bridge	1 LS	\$1,100.00	\$1,100
	C. Remove Existing Pipe beneath Baseball Field	160 LF	\$49.50	\$7,920
2	Earthwork			\$20,900
	A. Strip/Stockpile/Replace Topsoil	800 CY	\$5.50	\$4,400
	B. Grading Operations	3,000 CY	\$5.50	\$16,500
3	Structures and Pavilions			\$123,200
	A. Boardwalks and Bridges	2240 SF	\$55.00	\$123,200
4	Landscaping			\$24,530
	A. Lawn Seeding	2,000 SF	\$0.22	\$440
	B. Native Grass Meadow Seeding	50,000 SF	\$0.36	\$18,150
	C. Shade Trees	12 EA	\$495.00	\$5,940
5	Stormwater Mgt and Erosion Control			\$69,304
	A. Reroute Existing Drainage Swale	1 LS	\$40,000.00	\$40,000
	B. Stormwater Manangement (8%)	1 LS	\$14,652.00	\$14,652
	C. Erosion Control Measures (8%)	1 LS	\$14,652.00	\$14,652
6	Bond Mobilization and Layout			\$30,294
	A. Bond Mobilization and Layout (12%)	1 LS	\$30,294.48	\$30,294
7	Professional Fees			\$42,412
	A. Design, Engineering & Permitting (15%)	1 LS	\$42,412.27	\$42,412
	Total			\$325,161

Cost estimate does not include any utility connection fees, utility location and/or relocation, improvements to existing roads and intersections, electric system, lighting or distribution, soil amendments, rock excavation, and construction inspection fees.

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Landscape Architects

Commonwealth of Pennsylvania
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PROBABLE CONSTRUCTION COST OPINION
 Suburban Park

Grantee: Ferguson Township
 Project Title: Suburban Park

Date Prepared 4/18/2019
 DCNR Project No.

Item No.	Work Item - Phase A2	No. of Units	Unit Cost	Total Cost
1	Demolition/Site Preparation			\$5,500
	A. Misc Site Preparation	1 LS	\$550.00	\$550
	B. Remove Existing Entrance Sign	1 LS	\$2,200.00	\$2,200
	C. Remove Existing Baseball Backstop/Fence	80 LF	\$5.50	\$440
	D. Pavement Removal	350 SY	\$6.60	\$2,310
2	Earthwork			\$59,400
	A. Strip/Stockpile/Replace Topsoil	2,800 CY	\$5.50	\$15,400
	B. Grading Operations	8,000 CY	\$5.50	\$44,000
3	Parking and Access Drive Improvements			\$10,450
	A. Excavation	100 CY	\$5.50	\$550
	B. 1.5" Wearing Course	250 SY	\$9.90	\$2,475
	C. 2" Binder Course	250 SY	\$9.90	\$2,475
	D. 8" 2A Coarse Aggregate	250 SY	\$13.20	\$3,300
	E. Signage and Pavement Striping	2 LS	\$825.00	\$1,650
4	8' Bituminous Trail (1,440 LF)			\$41,899
	A. Excavation	450 CY	\$5.50	\$2,475
	B. 1.5" Wearing Course	1,280 SY	\$9.90	\$12,672
	C. 2" Binder Course	1,280 SY	\$9.90	\$12,672
	D. 6" 2A Coarse Aggregate	1,280 SY	\$11.00	\$14,080
5	5' Bituminous Trail (330 LF)			\$6,347
	A. Excavation	90 CY	\$5.50	\$495
	B. 1.5" Wearing Course	190 SY	\$9.90	\$1,881
	C. 2" Binder Course	190 SY	\$9.90	\$1,881
	D. 6" 2A Coarse Aggregate	190 SY	\$11.00	\$2,090
6	Concrete Pavement			\$12,540
	A. Excavation	30 CY	\$5.50	\$165
	B. Concrete Pavement	1,250 SF	\$9.90	\$12,375
7	Basketball Court			\$119,405
	A. Fine Grading and Compaction	350 CY	\$5.50	\$1,925
	B. Stone Base	650 SY	\$13.20	\$8,580
	C. Binder Course	650 SY	\$9.90	\$6,435
	D. Wearing Course	650 SY	\$9.90	\$6,435
	E. Color Coat/Line Painting	650 SY	\$6.60	\$4,290
	F. Terraced Bleacher Seating	1,440 SF	\$60.50	\$87,120
	G. Posts/Goals and Nets	2 EA	\$2,310.00	\$4,620

8	Baseball Field Improvements				\$27,500
	A. Excavation Fine Grade and Compaction	500 CY	\$5.50	\$2,750	
	B. Players Benches	2 EA	\$1,650.00	\$3,300	
	C. Backstop and Fence Improvements	1 LS	\$19,800.00	\$19,800	
	D. Dress Infield	1 LS	\$1,650.00	\$1,650	
9	Site Amenities				\$22,330
	A. Benches	4 EA	\$1,320.00	\$5,280	
	B. Trash Receptacle	2 EA	\$1,100.00	\$2,200	
	C. Bike Rack	2 EA	\$935.00	\$1,870	
	E. Fitness Stations	3 EA	\$1,650.00	\$4,950	
	F. Bicycle Repair Station	1 EA	\$1,650.00	\$1,650	
	G. Ship and Install Site Amenities (40% of costs)	1 LS	\$6,380.00	\$6,380	
10	Landscaping				\$40,095
	A. Lawn Seeding	75,000 SF	\$0.22	\$16,500	
	B. Native Grass Meadow Seeding	40,000 SF	\$0.36	\$14,520	
	C. Shade Trees	16 EA	\$495.00	\$7,920	
	D. Flowering Trees	3 EA	\$385.00	\$1,155	
11	Stormwater Mgt and Erosion Control				\$55,275
	A. Stormwater Manangement (8%)	1 LS	\$27,637.28	\$27,637	
	B. Erosion Control Measures (8%)	1 LS	\$27,637.28	\$27,637	
12	Bond Mobilization and Layout				\$48,089
	A. Bond Mobilization and Layout (12%)	1 LS	\$48,088.87	\$48,089	
13	Professional Fees				\$67,324
	A. Design, Engineering & Permitting (15%)	1 LS	\$67,324.41	\$67,324	
	Total				\$516,154

Cost estimate does not include any utility connection fees, utility location and/or relocation, improvements to existing roads and intersections, electric system, lighting or distribution, soil amendments, rock excavation, and construction inspection fees.

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Landscape Architects

Commonwealth of Pennsylvania
 Department of Conservation and Natural Resources
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PROBABLE CONSTRUCTION COST OPINION
 Suburban Park

Grantee: Ferguson Township
 Project Title: Suburban Park

Date Prepared: 4/18/2019
 DCNR Project No.

Item No.	Work Item - Phase B	No. of Units	Unit Cost	Total Cost
1	Demolition/Site Preparation			\$11,506
	A. Misc Site Preparation	1 LS	\$660.00	\$660
	B. Remove Existing Pavilion	1 LS	\$2,750.00	\$2,750
	C. Remove Existing Playground Equipment	1 LS	\$4,400.00	\$4,400
	D. Pavement Removal	560 SY	\$6.60	\$3,696
2	Earthwork			\$17,050
	A. Strip/Stockpile/Replace Topsoil	600 CY	\$5.50	\$3,300
	B. Grading Operations	2,500 CY	\$5.50	\$13,750
3	8' Bituminous Trail (480 LF)			\$14,344
	A. Excavation	200 CY	\$5.50	\$1,100
	B. 1.5" Wearing Course	430 SY	\$9.90	\$4,257
	C. 2" Binder Course	430 SY	\$9.90	\$4,257
	D. 6" 2A Coarse Aggregate	430 SY	\$11.00	\$4,730
4	5' Bituminous Trail (120 LF)			\$2,431
	A. Excavation	50 CY	\$5.50	\$275
	B. 1.5" Wearing Course	70 SY	\$9.90	\$693
	C. 2" Binder Course	70 SY	\$9.90	\$693
	D. 6" 2A Coarse Aggregate	70 SY	\$11.00	\$770
5	Concrete Pavement			\$26,895
	A. Excavation	30 CY	\$5.50	\$165
	B. Concrete Pavement	2,700 SF	\$9.90	\$26,730
6	Natural Playground			\$113,299
	A. Play Equipment	1 LS	\$40,000.00	\$40,000
	B. Play Equipment Installation (40%)	1 LS	\$16,000.00	\$16,000
	C. Excavation Fine Grade and Compaction	150 CY	\$5.50	\$825
	D. Concrete Curbing Edging	150 LF	\$37.40	\$5,610
	E. Underdrain	90 LF	\$13.20	\$1,188
	F. Custom Nature Play Feature Allowance	1 LS	\$44,000.00	\$44,000
	G. Safety Surface (mulch)	1,500 SF	\$2.20	\$3,300
	H. Stone Base and Filter Fabric	180 SY	\$13.20	\$2,376
7	Tennis Court Rehabilitation			\$33,528
	A. Scratch/Leveling Course	1,440 SY	\$2.20	\$3,168
	B. Wearing Course Overlay	1,440 SY	\$9.90	\$14,256
	C. Color Coat/Line Painting	1,440 SY	\$6.60	\$9,504
	D. Practice Wall	1 LS	\$6,600.00	\$6,600

8	Structures and Pavilions			\$150,480
	A. Medium Picnic Pavilion at Playground	1 EA	\$52,800.00	\$52,800
	B. Restroom Building	200 SF	\$412.50	\$82,500
	C. Extend Waterline to Restroom Building	180 LF	\$66.00	\$11,880
	D. Extend Sanitary Sewer to Restroom Building	50 LF	\$66.00	\$3,300
9	Site Amenities			\$20,020
	A. Benches	6 EA	\$1,320.00	\$7,920
	B. Trash Receptacle	1 EA	\$1,100.00	\$1,100
	C. Picnic Tables	4 EA	\$1,320.00	\$5,280
	D. Ship and Install Site Amenities (40% of costs)	1 LS	\$5,720.00	\$5,720
10	Landscaping			\$16,005
	A. Lawn Seeding	12,000 SF	\$0.22	\$2,640
	B. Native Grass Meadow Seeding	10,000 SF	\$0.36	\$3,630
	C. Evergreen Trees	3 EA	\$385.00	\$1,155
	D. Shade Trees	3 EA	\$495.00	\$1,485
	E. Flowering Trees	3 EA	\$385.00	\$1,155
	F. Shrub Allowance	1 LS	\$5,940.00	\$5,940
11	Stormwater Mgt and Erosion Control			\$64,889
	A. Stormwater Manangement (8%)	1 LS	\$32,444.64	\$32,445
	B. Erosion Control Measures (8%)	1 LS	\$32,444.64	\$32,445
12	Bond Mobilization and Layout			\$56,454
	A. Bond Mobilization and Layout (12%)	1 LS	\$56,453.67	\$56,454
13	Professional Fees			\$79,035
	A. Design, Engineering & Permitting (15%)	1 LS	\$79,035.14	\$79,035
	Total			\$605,936

Cost estimate does not include any utility connection fees, utility location and/or relocation, improvements to existing roads and intersections, electric system, lighting or distribution, soil amendments, rock excavation, and construction inspection fees.

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Landscape Architects

Commonwealth of Pennsylvania
 Department of Conservation and Natural Resources
 Bureau of Recreation and Conservation

PROBABLE CONSTRUCTION COST OPINION
 Suburban Park

Grantee: Ferguson Township
 Project Title: Suburban Park

Date Prepared 4/18/2019
 DCNR Project No.

Item No.	Work Item - Phase C	No. of Units	Unit Cost	Total Cost
1	Earthwork			\$4,950
	A. Strip/Stockpile/Replace Topsoil	300 CY	\$5.50	\$1,650
	B. Grading Operations	600 CY	\$5.50	\$3,300
2	Playground			\$84,426
	A. Play Equipment	1 LS	\$48,000.00	\$48,000
	B. Play Equipment Installation (40%)	1 LS	\$19,200.00	\$19,200
	C. Excavation Fine Grade and Compaction	180 CY	\$5.50	\$990
	D. Concrete Curbing Edging	180 LF	\$37.40	\$6,732
	E. Underdrain	130 LF	\$13.20	\$1,716
	F. Safety Surface (mulch)	2,100 SF	\$2.20	\$4,620
	G. Stone Base and Filter Fabric	240 SY	\$13.20	\$3,168
3	Horseshoe Pits			\$2,750
	A. Horseshoe Pit	1 LS	\$2,750.00	\$2,750
4	Structures and Pavilions			\$41,800
	A. Small Picnic Pavilion	1 EA	\$41,800.00	\$41,800
5	Site Amenities			\$10,780
	A. Benches	3 EA	\$1,320.00	\$3,960
	B. Trash Receptacle	1 EA	\$1,100.00	\$1,100
	C. Picnic Tables	2 EA	\$1,320.00	\$2,640
	D. Ship and Install Site Amenities (40% of costs)	1 LS	\$3,080.00	\$3,080
6	Landscaping			\$2,585
	A. Lawn Seeding	5,000 SF	\$0.22	\$1,100
	B. Shade Trees	3 EA	\$495.00	\$1,485
7	Stormwater Mgt and Erosion Control			\$23,567
	A. Stormwater Manangement (8%)	1 LS	\$11,783.28	\$11,783
	B. Erosion Control Measures (8%)	1 LS	\$11,783.28	\$11,783
8	Bond Mobilization and Layout			\$20,503
	A. Bond Mobilization and Layout (12%)	1 LS	\$20,502.91	\$20,503
9	Professional Fees			\$28,704
	A. Design, Engineering & Permitting (15%)	1 LS	\$28,704.07	\$28,704
	Total			\$220,065

Cost estimate does not include any utility connection fees, utility location and/or relocation, improvements to existing roads and intersections, electric system, lighting or distribution, soil amendments, rock excavation, and construction inspection fees.

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Landscape Architects

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Department of Conservation and Natural Resources
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PROBABLE CONSTRUCTION COST OPINION
Suburban Park

Grantee: Ferguson Township
Project Title: Suburban Park

Date Prepared 4/18/2019
DCNR Project No.

Item No.	Work Item - Floating Phase	No. of Units	Unit Cost	Total Cost
1	Demolition/Site Preparation			\$550
	A. Misc Site Preparation	1 LS	\$550.00	\$550
2	Earthwork			\$5,500
	A. Strip/Stockpile/Replace Topsoil	1,000 CY	\$5.50	\$5,500
3	Earthen Trail			\$2,695
	A. Clearing and Grubbing	0.2 AC	\$7,700.00	\$1,540
	B. Fine Grade and Compact	150 SY	\$7.70	\$1,155
4	Signage			\$14,080
	A. Park Entry Sign	1 EA	\$4,400.00	\$4,400
	B. Park Funding Acknowledgement Sign	1 EA	\$330.00	\$330
	C. Interpretive Signs	2 EA	\$2,750.00	\$5,500
	D. Information Kiosk	1 EA	\$3,850.00	\$3,850
5	Landscaping			\$58,245
	A. Native Grass Meadow Seeding	60,000 SF	\$0.36	\$21,780
	B. Evergreen Trees	18 EA	\$385.00	\$6,930
	C. Shade Trees	36 EA	\$495.00	\$17,820
	D. Flowering Trees	15 EA	\$385.00	\$5,775
	E. Shrub Allowance	1 LS	\$5,940.00	\$5,940
	F. Invasive Plant Removal (by Owner)	1 LS	\$0.00	\$0
6	Stormwater Mgt and Erosion Control			\$12,971
	A. Stormwater Manangement (8%)	1 LS	\$6,485.60	\$6,486
	B. Erosion Control Measures (8%)	1 LS	\$6,485.60	\$6,486
7	Bond Mobilization and Layout			\$11,285
	A. Bond Mobilization and Layout (12%)	1 LS	\$11,284.94	\$11,285
8	Professional Fees			\$15,799
	A. Design, Engineering & Permitting (15%)	1 LS	\$15,798.92	\$15,799
	Total			\$121,125

Cost estimate does not include any utility connection fees, utility location and/or relocation, improvements to existing roads and intersections, electric system, lighting or distribution, soil amendments, rock excavation, and construction inspection fees.

YSM is not a construction contractor and therefore probable construction cost opinions are based solely upon our experience with construction. This requires YSM to make a number of assumptions as to actual conditions which will be encountered on the site; the specific decisions of other design professionals engaged; the means and methods of construction the contractor will employ; contractors' techniques in determining prices and market conditions at the time, and other factors over which YSM has no control. Given these assumptions which must be made, YSM states that the above probable construction cost opinion is a fair and reasonable estimate for construction costs.



Suburban Park Master Plan

Ferguson Township, Centre County, Pennsylvania March 2019

Prepared For:



Prepared By:



Implementation Tasks

The redevelopment and enhancement of Suburban Park as depicted on the master plan update will require additional planning, design, and approvals. The following list outlines typical implementation tasks that may be required for park development. This list is provided for planning purposes and should not be considered all inclusive, as additional tasks, approvals, and permits may be required.

- Apply for park development funding grants.
- Complete a wetland delineation.
- Develop construction documents. Construction documents will design in detail and engineer the proposed improvements and associated amenities. Prepare a project manual including technical and bidding specifications.
- Prior to bidding and construction, obtain approvals from the various governing agencies. The following is a listing of typical approvals but may not be all-inclusive.
 - Municipal and County approval for land development plans, if required.
 - Centre County Conservation District approval for erosion and sedimentation control plans and NPDES Permit.
 - Pennsylvania Department of Environmental Protection Permit approval for any work within the waters of the Commonwealth including delineated wetlands, floodplain, and stream encroachments.
 - Pennsylvania Department of Environmental Protection for sewage planning module approval.
 - Pennsylvania One Call. Pennsylvania law requires three working days' notice for construction phase and ten working days in design stage.

Each of the listed permits and approvals are typically involved and will require advance planning to facilitate the process. Adequate preparation and review time should be allotted. Upon receipt of all required approvals and permits and completion of the construction documents, the project can be publicly bid for construction.

Capital Funding

Capital funding for parks like Suburban Park are typically paid for using a combination financing tools and funding sources. Successful strategies typically involve pursuing multiple sources in combination. Locally-generated funds are typically used as matching funds for grants from outside agencies. Ferguson Township should consider working with a financial planning consultant to develop a financing plan for the development of the Suburban Park Master Plan Update that includes a mix of resources. The master plan proposed an effective re-development of the entire park and for financing purposes, the useful lifespan of the park would range from 20 to 25 years; a loan with debt service over this timeframe would also be appropriate, if needed to develop the park. Park development funding options include:

Tax Support

The Township could enact a dedicated recreation tax or allocate a portion of the property, earned income, or real estate transfer taxes to help fund the development of the park.

Bonds

Significant expenditures such as the development of Suburban Park may preclude the option of using existing operating revenue and outside funding sources. The Township can issue long-term debt to finance large capital projects. Bonds provide funds that enable a community to invest in significant municipal projects, with the principal and interest repaid to the bondholder over a specified time period.

Fee-in-Lieu

The Township collects fee-in-lieu development impact fees based on the municipal mandatory dedication of parkland ordinance. The enabling legislation for mandatory dedication of parkland states that “The land or fees, or combination thereof, are to be used only for the purpose of providing, acquiring, operating or maintaining park or recreational facilities reasonably accessible to the development.” Fee-in-lieu obtained from developments located in the northeast area of the municipality that are reasonably accessible to Suburban Park can be used to “provide” or develop the park.

Bank Loans

Bank loans are a common financing vehicle and typically have shorter terms and are issued in smaller amounts than bonds.

PennVest

PennVest financing is a low-interest loan program that invests in sewer, stormwater, and drinking water projects. The stormwater improvements at Suburban Park may be compatible with this program.

Grant Funding Programs

There are numerous state and federal grant programs to fund park development.

- **Pennsylvania DCNR** – Grants for park funding in Pennsylvania are primarily secured from the PA Department of Conservation and Natural Resources (DCNR). DCNR provides grants for parks, trails, and recreation facilities planning and development.
 - **DCNR Community Conservation Partnership Program (C2P2)** – Park development grants typically have a top range of \$250,000. The grants require a 50% match from the local applicant, but the match may, in some instances, be another grant. The grant application period for the C2P2 grants usually opens annually in the fall with grants due in the following spring.
- **DCNR Riparian Buffer Planting** – The program provides financial assistance to identify locations for riparian forest buffers and to design, establish, monitor, and provide short-term maintenance of buffers. Minimum grant award is \$50,000 and all grants require a 50/50 match.
- **TreeVitalize Grant Program** – This grant program provides trees for planting in community areas along streets, in parks, and other publicly-accessible areas. TreePennsylvania manages the program that has funds provided by PA DCNR. Grants typically range from \$1,500-\$6,500.
- **Pennsylvania DCED** – PA Department of Community and Economic Development (DCED) grant programs support projects that focus on economic development, travel and tourism, technical assistance, and community development.
 - **DCED Greenways, Trails and Recreation Program** – This program funds the planning, acquisition, development, rehabilitation, repair of greenways, recreation trails, open space, parks, and beautification projects. DCED allocates the funds through the Commonwealth Financing Authority and funds are from the Marcellus Legacy Fund (Act 13). Grant funding shall not exceed \$250,000 for a project. A 15 percent local match of the total project cost is required.
- **Donations** – Voluntary donation from individuals, corporations, user groups are often made to communities for park improvements.
- **Business Sponsorships** – There is a growing recognition by businesses that recreation facilities and programs have a positive impact on a community and are worth being associated with. Sponsorships vary and could include naming rights to venues, financial support for programs, advertising through use of business logo or brand name.
- **Fund Raising / Capital Campaign** – Fund raising, and capital campaigns raise funds for specific projects. These efforts can require extensive planning, coordination, and expertise.
- **Private Foundations** – Private foundations support specific causes and initiatives. There are private foundations that support public services such as community park development. Research private foundations that are active in the region.