



John S. Clemens Memorial Park

Master Site Development Plan

DECEMBER 2017 - HATFIELD TOWNSHIP - MONTGOMERY COUNTY PA

Prepared for:
Hatfield Township, PA

Prepared by:
Simone Collins
Landscape Architecture



This project was financed in part by a grant from the Community Conservation Partnerships Program, *Keystone Recreation, Park and Conservation Fund*, under the administration of the Pennsylvania Department of Conservation and Natural Resources (DCNR), Bureau of Recreation and Conservation.



Hatfield Township Contact:

Aaron Bibro

Hatfield Township Manager

Ashley O'Neill

Hatfield Township Parks and Recreation Director



Project Committee:

Ken Amey

Arpit Gandhi

Ray Masser

Dean Mininger

Jim Nolen

Michele Nolen

John Reinenger

Deb Rodgers

Larry Stevens

Jeff Wert

John Wolff

Maggie Zipfel

Hatfield Township Commissioner -

Laura Thomas

Professional Seal:



Peter Simone, RLA

Project Consultants:

Simone Collins Landscape Architecture

Planners and Landscape Architects

Frens and Frens Restoration Architects

Table of Contents

Chapter 1 - Introduction

1	Purpose of Study
2	Master Planning Process
2	Project Team
3	Project Schedule
3	Public Participation
4	Data Collection and Methodology
5	Plan Goals

Chapter 2 - Inventory and Analysis

7	Site Description
9	Regional Context
10	Demographics
10	On-Site Reconnaissance
11	Key Person Interviews
12	Public Opinion Survey
12	Planning Documents
15	Zoning Code Review
18	History
22	Circulation
23	Geology and Soils
24	Topography
25	Hydrology
27	Vegetation
27	Wildlife
27	Existing Programming
29	Evaluation of Existing Buildings
29	Opportunities and Constraints

Chapter 3 - Recommendations and Design Guidelines

33	Anticipated Level of Use
35	Preliminary Concept Plans
38	Master Plan
44	Design Elements
52	Programming
52	Safety
53	Site Maintenance
55	Landscape Buffer Sections
56	Park Illustration
57	Site Development Drawing

Chapter 4 - Implementation

59	Project Phasing
60	Cost Estimates of Capital Improvements
62	Construction Practices
62	Potential Partners
62	Funding Sources

Chapter 5 - Appendix

67	Appendix
	• Public Involvement
	• Draft Plan Public Comments
	• Background Data
	• Clemens Park PNDI
	• Clemens Park Building Assessment: Frens and Frens Architects
	• Preliminary Proposed Infiltration Basin Calculations
	• Capital Improvement Cost Estimates



CHAPTER

1

INTRODUCTION

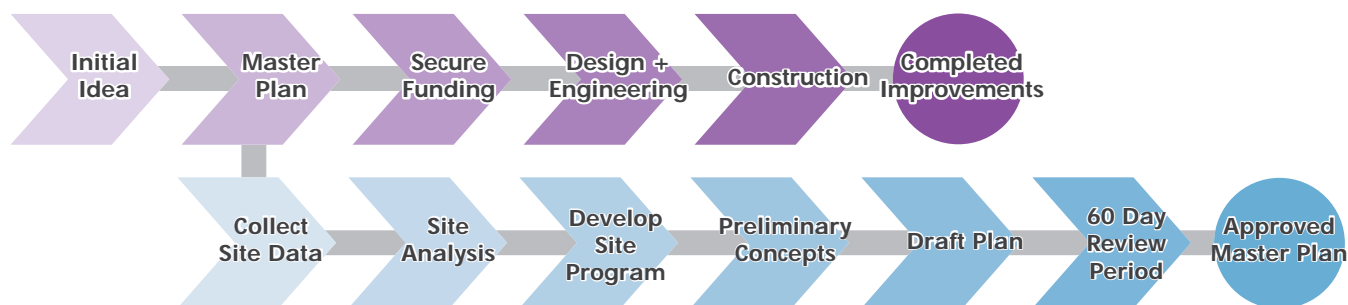
Purpose of Study

Hatfield Township, in Montgomery County, Pennsylvania, commissioned this Master Site Development Plan for the redevelopment of John S. Clemens Memorial Park. The property includes the existing John S. Clemens Memorial Park and the newly acquired Nolen parcel. The total size of the Park is 17 acres. The Park currently serves primarily as an active recreation facility, with a large stormwater basin that was recently enhanced to address some of the Township's MS4* (Municipal Separate Storm Sewer System) requirements.

All municipalities that operate municipal separate storm sewer systems (MS4s) are responsible for development and implementation of stormwater management plans to protect water quality.

Hatfield Township must follow these requirements.

Master Planning Process Diagram



The Township applied for and received a Department of Conservation and Natural Resources (DCNR) Community Conservation Partnership Program (C2P2) grant to partially fund the preparation a master site development plan according to DCNR guidelines. This plan is the result of a collaboration between the public, a project steering committee, Township staff, project consultants, and the Hatfield Township Commissioners. This document outlines the planning process and provides a vision for the future of the Park.

Master Planning Process

The master plan is an early step in the park improvement process for improvements and facilities to be constructed at Clemens Memorial Park. The master plan includes cost estimates for development, outlines a strategy for phasing improvements and positions the Township for funding from a variety of potential funding sources. This is a guidance document that is intended to be a blueprint for park improvements while remaining flexible enough to adapt to the future desires and needs of the community.

Following the completion of this master site development plan, the next step toward implementation

is to identify and acquire funding for improvements. Once funding is obtained, detailed design and engineering will commence to develop construction documents. Construction documents will be publicly bid and a contract awarded for construction. A master plan is typically implemented through a series of phases, dependent on funding, over a period of years. In the case of Clemens Memorial Park, 3 phases spanning 7 or more years is a realistic timeframe for the implementation of park improvements.

Project Team

Hatfield Township selected Simone Collins Landscape Architecture to lead the project team. The project team also included Frens and Frens Restoration Architects. A project steering committee, comprised of residents and Township staff informed the process.

Simone Collins Landscape Architecture (SC) is a planning and design firm with a portfolio of award-winning projects in the areas of parks, trails, greenways and recreational facilities.

Frens and Frens Restoration Architects is a consulting firm that specializes in the assessment and restoration of historic structures.

Project Schedule



Public Participation

The consultants worked with the project steering committee to tailor the public participation process to the project. Community input is a critical component of all successful master plans. It was important for the project team to hear citizens' observations, needs, and ideas, and incorporate them as appropriate into the master plan.

The public participation process included four public meetings, four steering committee meetings, and eight key person interviews. A project schedule is found above. Meeting notes and attendance sheets for each meeting can be found in the appendix of this report.

Committee Meeting 1 – February 15, 2017

Steering committee meeting one focused on collecting background information for the site and discussing preliminary design ideas from the committee. The consultants led a brainstorming activity that developed Park goals, facts, concepts, and potential partners.

Public Meeting 1 – March 1, 2017

The first public meeting introduced the project team to residents and provided an overview of the master plan process. A site inventory and analysis was presented, including a photographic tour of the site. The consultants led a brainstorming activity that gathered public goals, facts, concepts and partners for the Park.

Committee Meeting 2 – March 7, 2017

Findings from the first committee meeting and the first public meeting were presented and reviewed during the second committee meeting. Frens and Frens presented an analysis and recommendations for the existing structures on the Nolen property that is becoming a part of the park.

Public Meeting 2 – April 24, 2017

Preliminary concepts were presented to the public at the second public meeting. The consultant team led an informal discussion on elements that were preferred within each of the three concepts plans.

Committee Meeting 3 – May 18, 2017

The consultant team presented an addition concept plan developed from ideas and discussions at the second public meeting. The project team had an informal discussion about the concept plan and agreed on a direction for the draft plan.

Public Meeting 3 – June 29, 2017

The draft plan was presented at the third public meeting. The consultants provided a brief overview of the site inventory and analysis, presented the draft park plan, and discussed cost estimates and implementation strategies. The draft plan was then subject to a 60 day draft review period by the public, Hatfield Township and DCNR.

Committee Meeting 4 – September 6, 2017

The final steering committee meeting discussed draft plan comments, preliminary costs, and a phasing strategy. Decisions were made regarding which comments and changes should be made to the final plan.

Public Meeting 4 – October 19, 2017

The final plan was presented at the fourth public meeting.

Data Collection and Methodology

Elements for this plan were compiled using the best available information. This information included Geographic Information System (GIS) mapping obtained from Hatfield Township, a topographic survey and preliminary stormwater analysis completed by CKS engineers, aerial photography, a building assessment completed by Frens and Frens, information gathered from previous and ongoing planning efforts, committee and public meetings, key person interviews, and site reconnaissance visits.

Plan Goals



Establish a vision for the future of John S. Clemens Memorial Park.



Provide for passive recreation and active recreation opportunities.



Improve vehicular and pedestrian access and connectivity, into the Park and to nearby area destinations.



Assess existing structures and recommend a possible strategy for the future of these structures.



Look for ways to provide additional programming at the Park.



Provide ADA compliant facilities and access where feasible in the Park.



Prioritize Park improvements into a phasing plan with cost estimates and implementation strategies.



Develop a maintenance strategy that fits within the current maintenance capacity of the Township.



Enhance the efficiency of existing Stormwater Best Management Practices (BMPs) to better address Township MS4 requirements while providing visually attractive and educational features.



Design facilities and programs for all ages and user groups.



Respect the privacy of adjacent private landowners.



CHAPTER

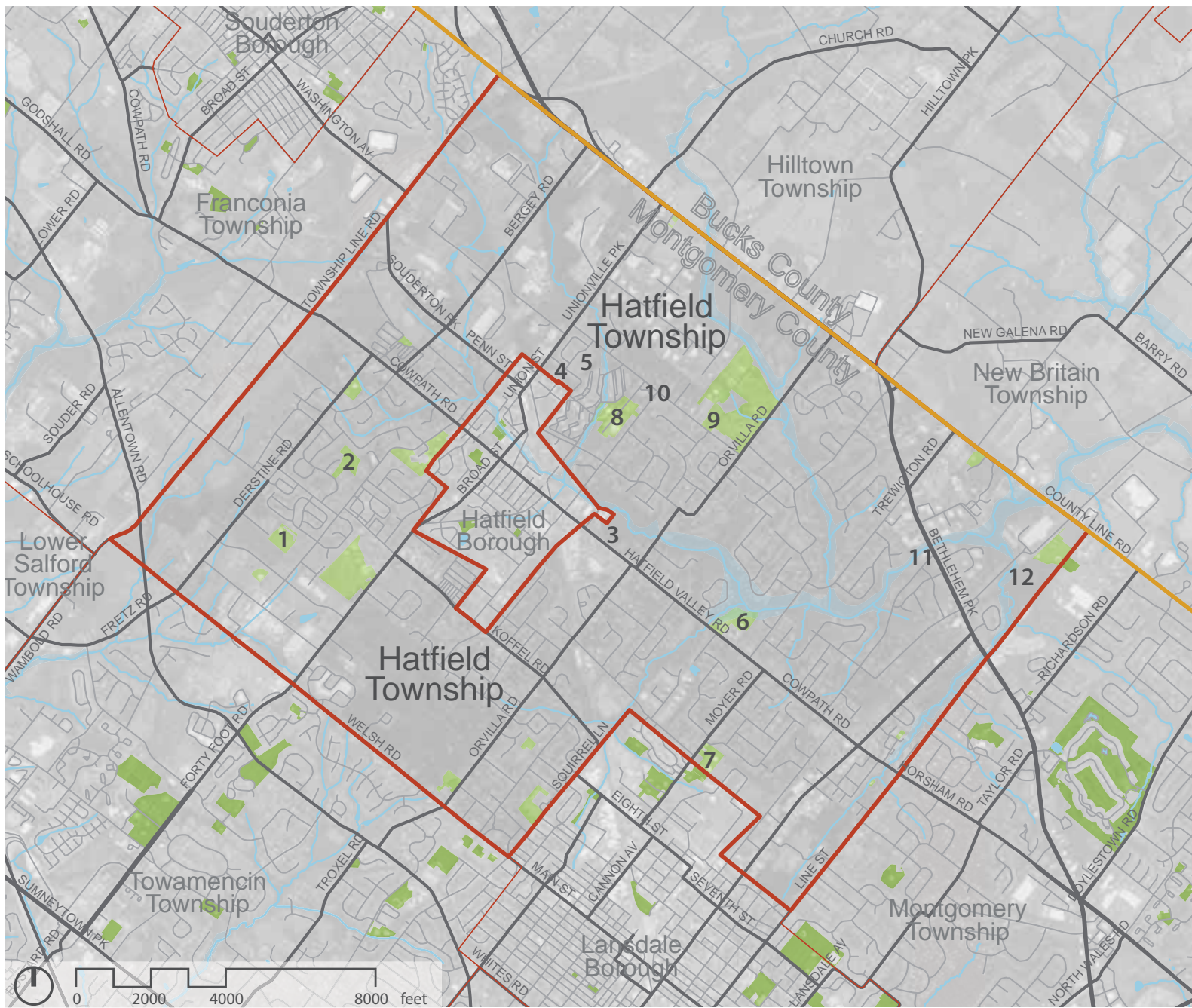
2

INVENTORY AND ANALYSIS

Site Description

John S. Clemens Memorial Park is a 17 acre Park located in the southwestern portion of Hatfield Township. The Park is bounded by a residential neighborhood to the north, a landscape construction business to the west, an open agricultural field owned by Clemens Food Group to the southwest, a private residence and the Hatfield Volunteer Fire Company to the south, and Fairgrounds Road to the east.

The Park is currently accessed by vehicles via a driveway from Fairgrounds Road that crosses through the middle of the stormwater basin. Formal pedestrian access is limited to a multiuse trail that connects south from the Park to an off-road Township trail system along Clemens Road. The newly acquired Nolen parcel has a driveway from Fairgrounds Road. The site has two primary structures, a house and a barn, and multiple



Hatfield Township, PA and regional park system map

- | | |
|-----------------------------------|-----------------------------------|
| 1 Clemens Park | 7 Schweiker Park |
| 2 Hatfield Arboretum | 8 Hatfield Community Park |
| 3 Hatfield Township Nature Center | 9 School Road Park |
| 4 Shade Tree Commission Nursery | 10 Lenhart Road Perservation Area |
| 5 Stratford Avenue Park | 11 Melody Brook Park |
| 6 Chestnut Street Park | 12 Walnut Street Cabin |

	PARK NAME	SIZE (AC)	FACILITIES	PROXIMITY
1	CLEMENS PARK	17	softball field, youth baseball field, multi-use fields, cricket pitch, walking trail, picnic area	--
2	HATFIELD ARBORETUM	5	walking trail, natural gardens, open space	0.7 miles
3	HATFIELD TOWNSHIP NATURE CENTER	28	walking trail, natural gardens, pavilion, outdoor classroom, open space	2.1 miles
4	SHADE TREE COMMISSION NURSERY	0.5	seating area, natural gardens	2.2 miles
5	STRATFORD AVENUE PARK	4.5	walking trail, fitness stations, open space	2.2 miles
6	CHESTNUT STREET TRAIL PARK	0.25	seating area	2.7 miles
7	SCHWEIKER PARK	14	softball fields, hardball field, concession stands, walking trail	2.8 miles
8	HATFIELD COMMUNITY PARK	25.6	multi-use field, tennis courts, playground, picnic area, pavilion, tot lot, roller hockey court, basketball court, dog park, Chestnut Street Trailhead, The Hatfield Aquatic Center	3.0 miles
9	SCHOOL ROAD PARK	36	pavilion, picnic area, public access building, amphitheater, playground	3.3 miles
10	LENHART ROAD PRESERVATION AREA	6	walking trail, natural gardens, open space	4.1 miles
11	MELODY BROOK PARK	0.25	seating area	4.4 miles
12	WALNUT STREET CABIN	2	public access building, walking trail, natural gardens	4.8 miles

existing parks and facilities within Hatfield Township, PA

accessory structures. Current park facilities include parking for 71 vehicles, two softball fields (one with a skinned infield), a cricket pitch, two multi-purpose fields, and a 0.37 mile asphalt loop trail.

Clemens Park serves primarily as an active recreation facility within Hatfield Township's Park and Recreation system. The high demand for field use by area sports organizations creates a full schedule of programs year round at the Park. Maintaining existing active recreation programs and seeking additional active and passive recreation opportunities were guiding principles for this master plan.

Regional Context

Hatfield Township is a Township of the first class under PA statutes. It is located in north central Montgomery County. The Township surrounds Hatfield Borough, and is adjacent to Lansdale Borough, Towamencin Township, Franconia Township and Montgomery Township in Montgomery County as well as New Britain Township and Hilltown Township in Bucks County. The Park is located 2.5 miles south of Souderton, 2.5 miles northwest of Lansdale, 10 miles

west of Doylestown, 11 miles north of Norristown, 12 miles south of Quakertown, and 24 miles northwest of Philadelphia.

The Township is bisected by PA Route 463, which runs northeast into Hatfield Borough and then turns southeast towards Montgomeryville. PA Route 63 runs along the southern boundary of the Township towards Lansdale. PA Route 309 runs along a portion of the northern boundary of the Township and bisects a small portion of the Township to the east. PA Route 309 runs north towards the Lehigh Valley and south towards Philadelphia.

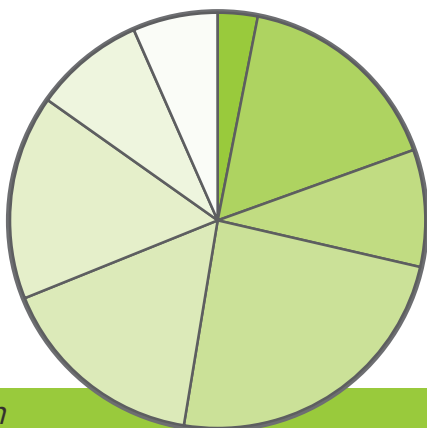
Hatfield Township Parks and Recreation System

Clemens Park is one of 12 public parks owned and operated by Hatfield Township. The Park system includes approximately 139 acres of parkland and more than 260 acres of open space. Hatfield Township also has an extensive trail system that includes both on-road and off-road routes for pedestrians and bicyclists. The facilities offered throughout the Township provide residents with a wide range of recreation facilities and opportunities.

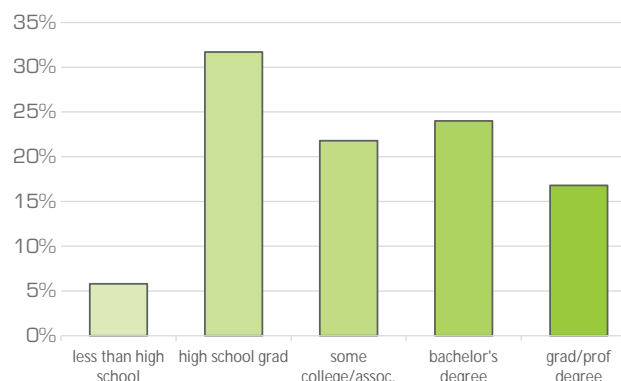
5,538
population

43.3
median age

- under 5
- 5 - 17
- 18 - 24
- 25 - 44
- 45 - 54
- 55 - 64
- 65 - 74
- 75+



Population

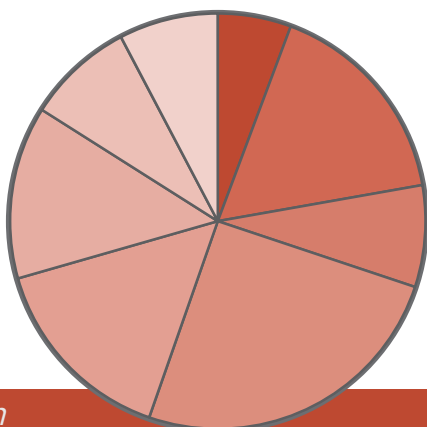


Education

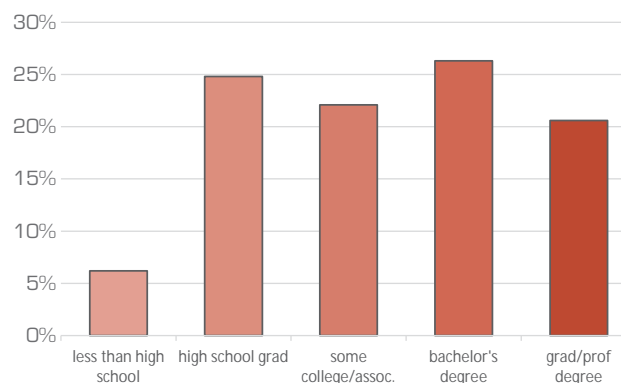
812,970
population

41.1
median age

- under 5
- 5 - 17
- 18 - 24
- 25 - 44
- 45 - 54
- 55 - 64
- 65 - 74
- 75+



Population



Education

Demographics

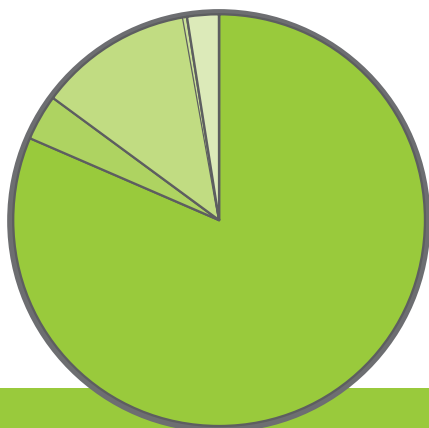
Hatfield Township has a population of 17,500 residents according to the 2011-2015 American Community Survey (ACS). Clemens Park falls within Census Tract 2007.08. Specific demographic data from this Census Tract was used to access the population most directly associated with Clemens Park. Data was also compared to Montgomery County to assess general demographics within the region.

On-Site Reconnaissance

The consultants conducted site reconnaissance of the Park multiple times. Initial site visits included inventory and analysis and helped to inform the master plan. The consultants toured the facilities on the Nolen property to assist with the assessment and recommendations for the existing structures. Follow-up site visits were conducted to verify the feasibility of proposed improvements.

Census Tract 2007.08
portion of Hatfield Township, PA

- white
- african american
- asian
- pacific islander
- 2 or more races



Race

2.96
average household size

\$82,139
median household income

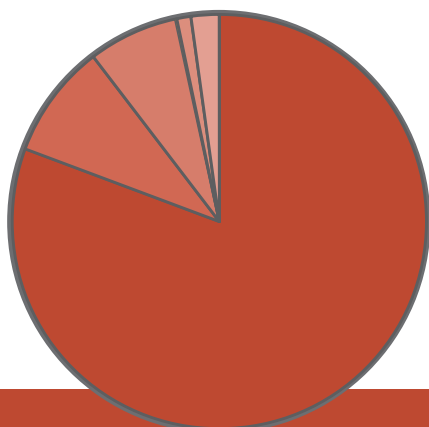
2,088 **96.22%**
2,009 occupancy

number of households

Households

Montgomery County

- white
- african american
- asian
- american indian
- other
- 2 or more races



Race

2.73
average household size

\$80,675
median household income

327,146 **94.34%**
308,626 occupancy

number of households

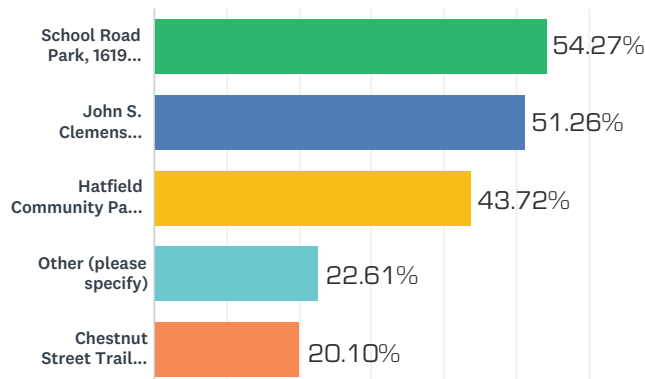
Households

Key Person Interviews

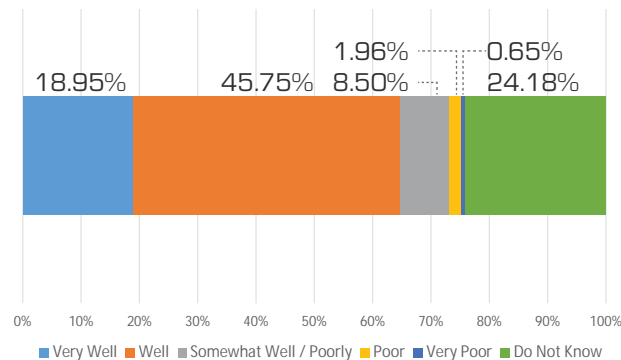
The consultants interviewed key persons during the design process. These conversations were with stakeholders and sports organizations who have vested interests in the facilities at the Park and who provided in-depth and critical insight into field usage, constraints and recommendations that helped inform the master plan. Most of the sports organizations, like soccer, rugby, cricket and softball, are seeing their memberships grow and want to ensure the continued

and successful accommodations of their teams.

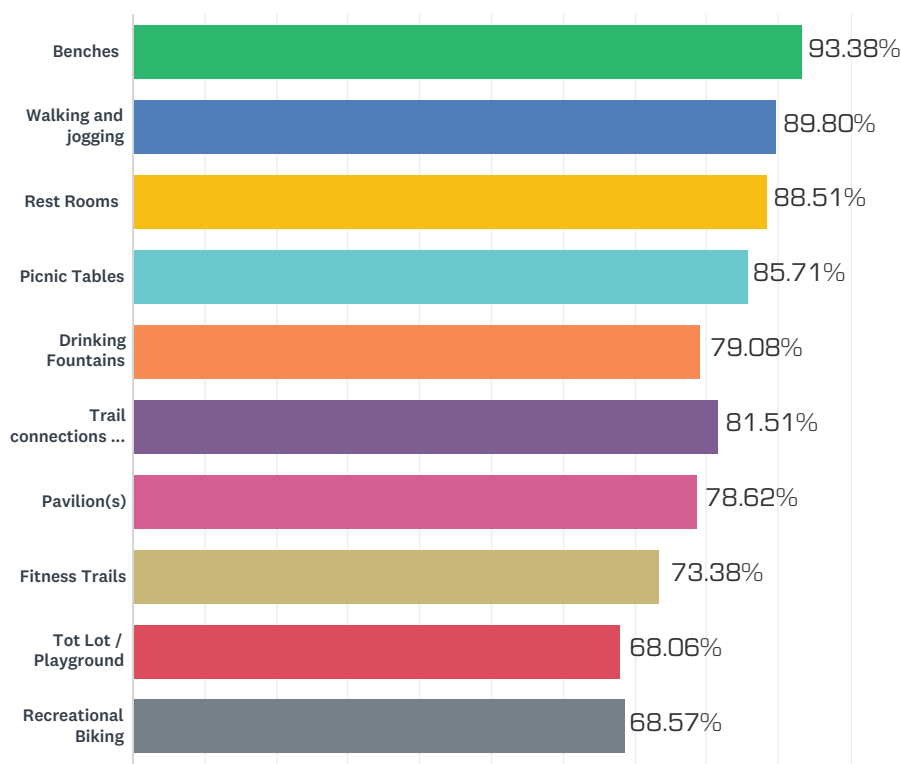
The key person interviews included individuals from: Towamencin Soccer Club, Millennium Cricket League, Buxmont Christian Softball League, North Penn Rugby Football Club and Clemens Food Group as well as local residents. The key person interview notes are found in the Appendix of the report.



Question 7: Which parks, natural areas, or open space areas do you visit for recreation purposes? (top 5)



Question 19: How would you rate maintenance at Clemens Park (i.e. overall appearance, lawn cutting, cleanliness, etc.)?



Question 21: Which facilities and activities do you think should be considered for Clemens Park?

Public Opinion Survey

A 22 question online public opinion survey was open to the public from March 2017 until September 2017. The survey received a total of 245 responses. Respondents were kept confidential and responses were compiled together and analyzed. The complete survey is found in the appendix of the report. Select responses are shown above.

Planning Documents

Pennsylvania Statewide Comprehensive Outdoor Recreation Plan, 2014 - 2019

The 2014 Pennsylvania Statewide Comprehensive Outdoor Recreation Plan, completed by the Department of Conservation and Natural Resources, provides a guide for developers, local governments, state governments, and others for the development

of outdoor recreation in Pennsylvania. This plan is updated every five years.

The plan includes various surveys and studies that identify priorities and findings throughout the state of Pennsylvania. Using these findings and other research, the Statewide Comprehensive Outdoor Recreation Plan lists priorities to help encourage and improve outdoor recreation. The five major priorities that are both opportunities and challenges include:

- Health and Wellness
- Local Parks and Recreation
- Tourism and Economic Development
- Resource Management and Stewardship
- Funding and Financial stability

The Pennsylvania Statewide Comprehensive Outdoor Recreation Plan can be found online at: <http://www.paoutdoorrecplan.com/>.

Montco 2040: A Shared Vision – The Comprehensive Plan for Montgomery County, 2015

Montco 2040 is the most recent comprehensive plan for Montgomery County and is based around three primary themes: connected communities, sustainable places, and a vibrant economy. The plan also has three focus visions for the County's future: open space and trails, land use, and transportation. All elements of the plan originate from the county's 2005 comprehensive plan but they have been updated to reflect recent growth and physical development of the county.

Elements of the plan that directly impact John S. Clemens Memorial Park, as a current destination and with future expansion, span the three themes and follow the guidelines set forth in the comprehensive plan. County wide goals set by this plan that are relevant to Clemens Park include:

- Establishing vibrant downtowns and destinations accessible by everyone
- Improving stormwater management
- Creating trail and greenway connections in multiple places
- Protecting natural resources

Montco 2040: A Shared Vision can be found online at: <http://www.montcopa.org/DocumentCenter/View/7719>

Hatfield Borough & Hatfield Township Open Space Plan

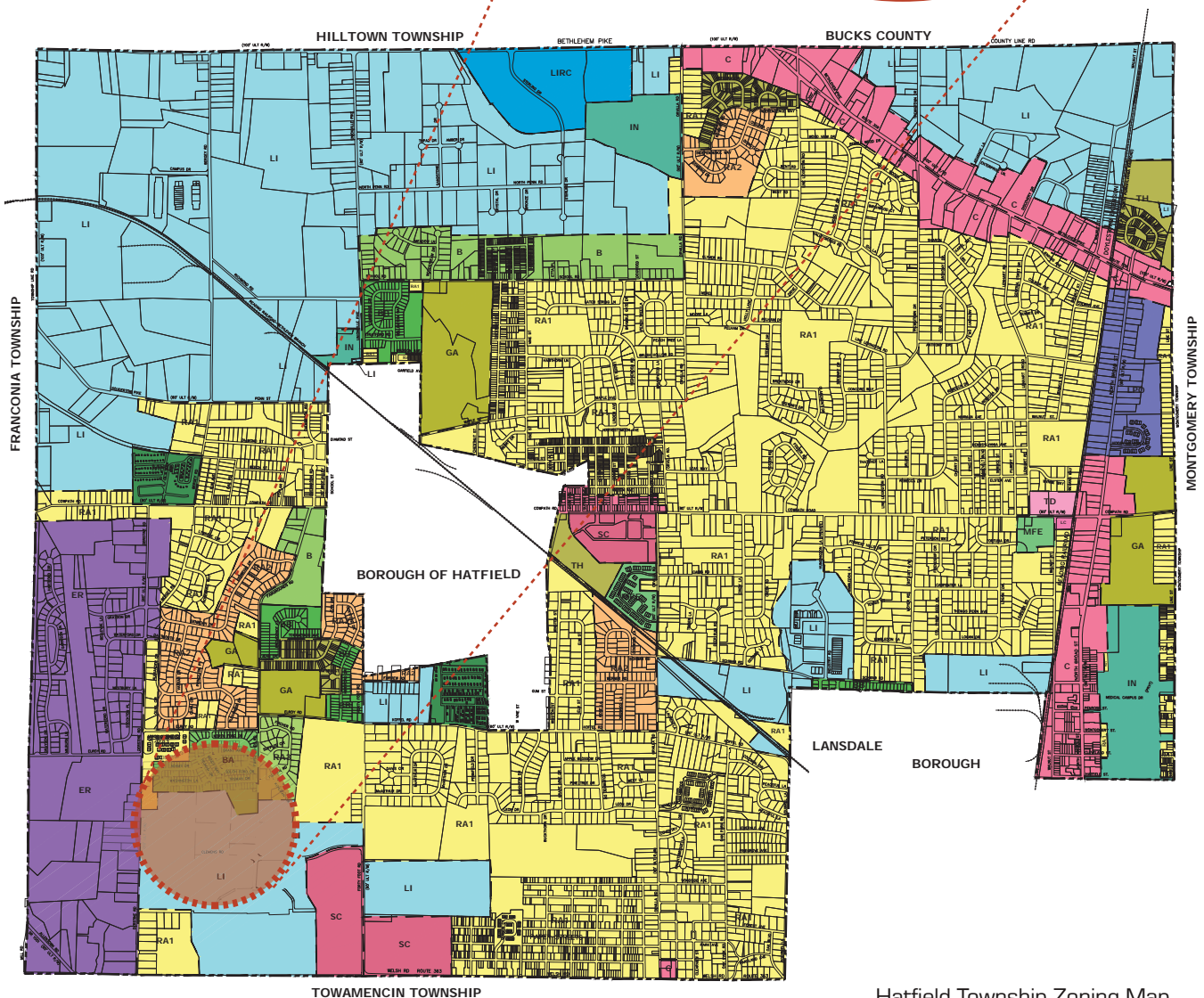
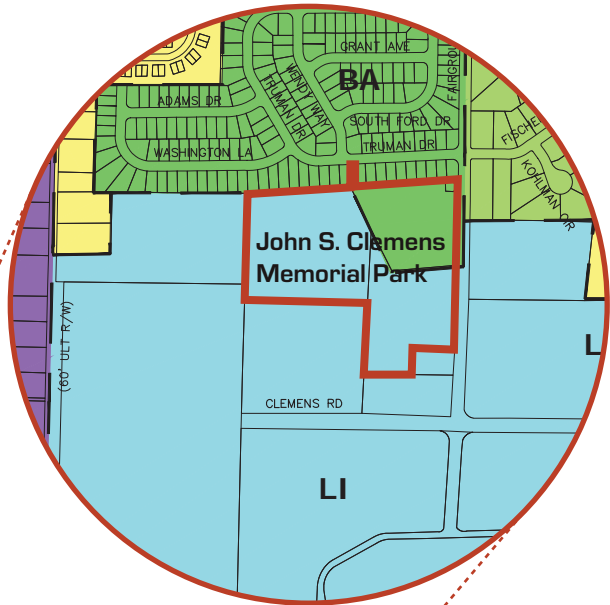
The Hatfield Borough & Hatfield Township Open Space Plan of 2005 is a joint plan established by the two municipalities, and serves as a framework for creating new publicly accessible open spaces that will increase the quality of life and provide additional active and passive recreational opportunities for Borough and Township residents. Over the course of eight (8) months, the Borough and Township were able to form common goals outlined in the plan. These multi-municipal goals, some of which directly impact John S. Clemens Memorial Park and expansion, include:

- Providing evenly distributed open space opportunities for Hatfield Borough and Hatfield Township residents
- Providing a comprehensive trail network linking parks with schools, employment areas, and commercial areas
- Protecting the natural features that exist within the Borough and Township

The Hatfield Borough & Hatfield Township Open Space Plan of 2005 can be found online at: <http://www.hatfieldtownship.org/images/stories/PDFS/Hatfield%20Township-Hatfield%20Borough%20Open%20Space%20Plan.pdf>

ZONING DISTRICTS LEGEND

ER	Estate Residential
RA1	Residential
RA2	Residential
RA3	Residential
B	Residential
BA	Residential
BB	Residential
TH	Town Homes
GA	Garden Apartments
MHD	Mobile Home Development
MFE	Multi-Family Elderly
LPO	Limited Professional Office
IN	Institutional
C	Commercial
LC	Limited Commercial
SC	Shopping Center
LI	Light Industrial
LIRC	Light Industrial - Restricted Commercial
TD	Transportation District



Hatfield Township Zoning Map

Hatfield Township / Hatfield Borough Greenway and Trails Network Master Plan, 2009

The Hatfield Township / Hatfield Borough Greenway and Trails Network Master Plan of 2009 is a joint plan used to create a comprehensive Greenway and Trails Network for Hatfield Township and Hatfield Borough. The Greenway and Trails Network Master Plan formulated specific goals for Hatfield Township and Hatfield Borough. These goals included:

- Identifying potential linkages needed to open spaces, business areas, or trails in other municipalities
- Optimizing the service of existing trails to the community

The Hatfield Township / Hatfield Borough Greenway and Trails Network Master Plan of 2009 can be found online at: http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_20028566.pdf

Zoning Code Review

The project site falls within the Light Industrial Zone and the BA Residential Zone in Hatfield Township.

BA Residential Specific

Although most of the information for the BA Residential Zone pertains directly to residences, some information impacts the development and maintenance of Clemens Park. The primary source of regulations for residential areas is for non-developable land preserved as common open space. This common open space is to be designed as a continuous system and connected to any abutting open space parcels whenever possible. It shall consist of natural environmental features or planted and maintained vegetated areas. The Township may require the formation of a reserve fund to cover capital improvements to the common open space.

LI Light Industrial Specific

LI regulations pertain to the sites proximity to the residential zone. This information includes: no structure shall be erected closer than 200 feet to any residential district nor any parking area closer than 100 feet to any residential area. The first 100 feet from the industrial zone property line shall be devoted to buffer areas to be maintained as green areas covered by well-maintained lawns, trees, and shrubbery and plantings. The exception to the buffer area is for vehicular access which requires no parking, loading or driveway area to be located closer than 10 feet to any property line.

Lighting, while implemented for industrial elements, remain enclosed within the site. This requires no exterior light to be placed higher than 25 feet above grade and shall be screened so as to not permit illumination off the premises, including surrounding residential areas. The hours of illumination of lights for security is permitted between 10pm and 6am daily.

Within light industrial zone regulations are specific guidelines for stormwater management. The impervious coverage of the light industrial area shall not exceed 75% of the site and the minimum distance between a proposed basin discharge point and a downstream property boundary shall be 50 feet minimum.

Where permanent retention (pond) facilities are proposed, there shall be a safety ledge, three feet wide at the maximum water surface level. If the pond is to be stocked, the Pennsylvania Fish and Game Commission shall approve the stocking plan. All basins shall have slopes of four horizontal to one vertical (4:1 or 25%), or less on the basin's outer berm and four horizontal to one vertical (4:1) or less on the basin's inner berm. The top or toe of any slope shall

be located a minimum of five feet from any property line

Signage

The site must follow signage regulations for recreational areas. This includes signs only permitted when authorized by the Township Commissioners and regulated as one non-illuminated or indirectly illuminated on-premises sign. This includes sign names that provide pertinent information pertaining to the recreation facility.

SALDO Review

The Subdivision and Land Development Ordinance (SALDO) Regulations apply to all districts. There are three primary areas of SALDO regulations that apply to the site: Streets and Parking, Sidewalks, and Vegetation.

Streets and Parking - Streets entering opposite sides of another street shall be laid out either directly opposite one another or with a minimum offset of 200 feet between their center lines. A minimum curb radius at street intersections shall be 25 feet, and at the property line, the radius shall be 20 feet or concentric as required by the Township.

Parking regulations dictate a 24 foot wide parking aisle for two-way vehicular circulation with 18 foot by 9 foot stall dimensions. ADA parking requirements need to comply with current ADA regulations.

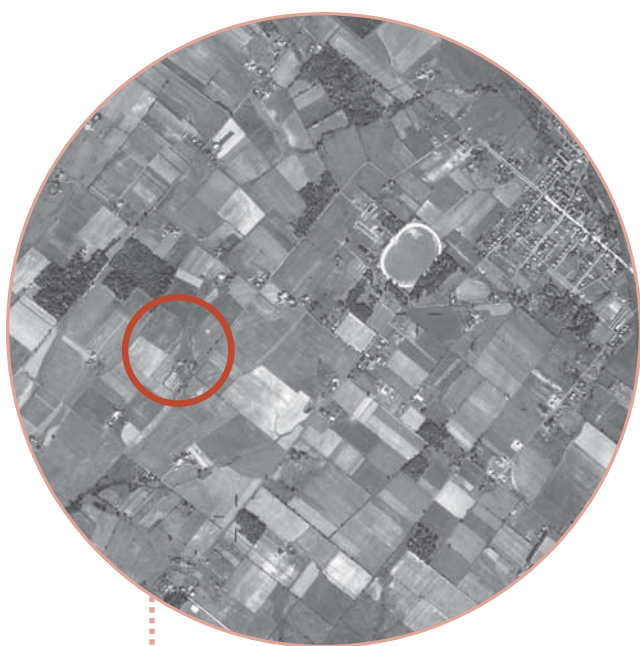
Sidewalks - The minimum width of all sidewalks is 6 feet. Sidewalks shall be located one foot from the right-of-way line within the right-of-way. Sidewalks shall not exceed 7% grade. Steps or a combination of steps and ramps can be utilized to maintain the grades, where necessary. Where sidewalk grades exceed 5%, a nonslip surface texture shall be used. At all intersections, handicapped ramps shall be installed to comply with the requirements of the Americans with Disabilities Act of 1990 (ADA). Sidewalks shall



be provided on both sides of all new streets of land developments and subdivisions. Sidewalks shall be provided on one side of all abutting streets. Sidewalks and driveway aprons shall be constructed of concrete.

Vegetation - Buffers between adjacent zones shall use existing vegetation and new material to achieve a mature vegetative boundary. The buffer must include the equivalent of three (2 1/2 inch dbh minimum) shade trees, five (six to eight feet height minimum) evergreen trees and 10 (24 inches height minimum) shrubs per 100 lineal feet of property boundary for every 20 feet of buffer width. An all-season ground cover is required to prevent soil erosion. Fences and berms may be permitted as substitutes for portions of the required landscaping buffer.





Timeline

1942

1940

1950



1958

1960

History

The History of John S. Clemens Park and the newly acquired Nolen property was examined to identify historic resources and development patterns within the property and adjacent environs. The Park itself was named for one of the sons of John Clemens, the founder of Pleasant Valley Packing, which would later evolve into the Clemens Food Group.

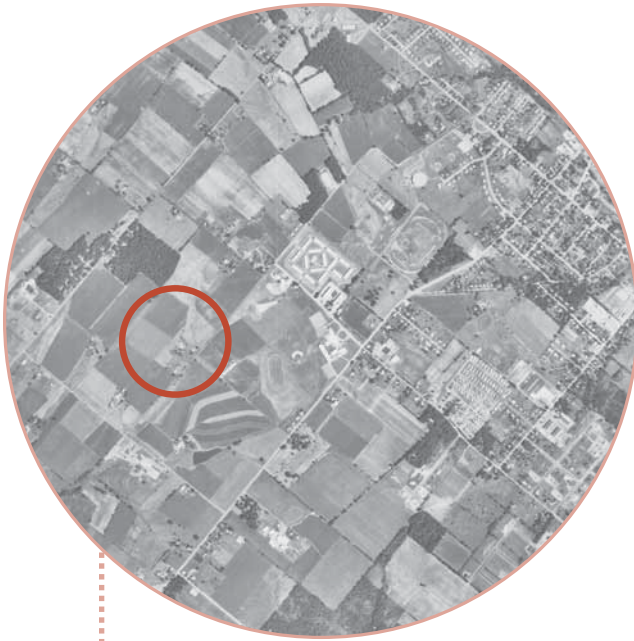
1942

Aerial photography shows little development in the area except for Hatfield Borough. Clemens Park did not exist at this time. The fairgrounds racetrack is found northeast of the property. The Nolen residence and a previous barn structure (the current barn was constructed in the 1960's) are seen in 1942, along

with Fairgrounds Road. Clemens Road was not constructed at this time. A watercourse or swale appears to run north to south through the future park and adjacent to the Nolen property. This was also the last year that the Montgomery County Fair, which was set up along Fairgrounds Road, was held in Hatfield. The fair had occurred since 1925 and attracted crowds of over 25,000 people each year.

1958

Aerial photography in 1958 shows very little change from 1942. Some development appears to spread outwards from Hatfield Borough, but there is no development in and around the Park property.



1971

1970

1980



1991

1990

1971

Significant development begins to move into the area in 1971. The Pennfield Middle School was constructed, as well as the Madison Montgomery Apartments. The fairgrounds racetrack appears abandoned at this time. The Clemens Food Group facility was constructed, but Clemens Road did not exist.

1991

Aerial photography in 1991 shows the development of the neighborhood north of the Park property. This also resulted in the construction of the existing stormwater basin. The Nolen property remains unchanged. Alderfer Auction, located across Fairgrounds Road from the Nolen property, was constructed. The Clemens Food Group expanded its facilities and added a recreation softball field, still present today.



Timeline

1990

1999

2000

2004

2010

1999

Between 1991 and 1999, John S. Clemens Memorial Park was developed. The Park layout is similar to the layout today. The entrance road bisects the basin into the parking lot. The parking lot appears to be half the size of what it is today. The aerial photography also shows that the softball field currently at the park today, was originally a baseball field.

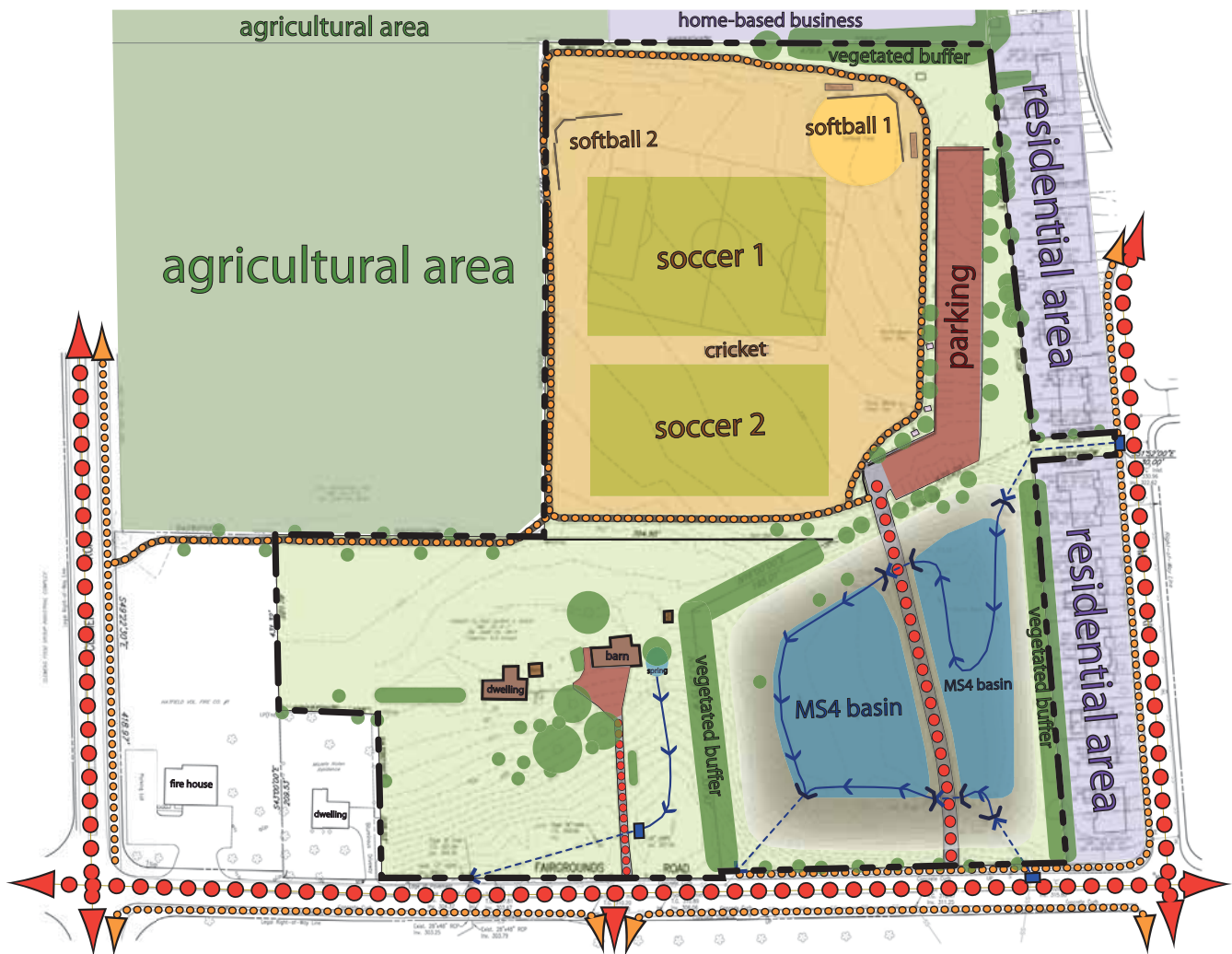
2004

Aerial photography in 2004 shows the development of Clemens Road from Forty Foot Road to Derstine Road. The loop trail system was also added to the park, which connects down to a Township trail system along Clemens Road. The parking lot was expanded to its current size. The adjacent landscape business is northwest of the park, and the baseball field was converted to a softball field.



2016

Aerial photography shows no significant change in the park from 2004 to 2016. In 2013 the Township received a grant to naturalize the basin and help address MS4 requirements. In 2015 the Township acquired the Nolen property. The property remained occupied by the current resident at the time of this Master Plan.



Site Analysis Diagram

Circulation

Access to Clemens Park is limited for both vehicular and pedestrian users. Vehicular access is provided along Fairgrounds Road. The access drive enters the Park through the center of the stormwater basin. Though there does not appear to be a history of water topping the entrance road, this means of access through the basin is less than ideal and is unattractive.

The access drive is approximately 20 feet wide and leads to a parking lot with 71 striped spaces. During times of heavy use at the Park, vehicles frequently park along the entrance drive in the basin and across Fairgrounds Road at Alderfer Auction (with the informal permission of the owner). There is currently no formalized crossing of Fairgrounds Road from Alderfer Auction to the Park.

Legend

- existing culvert
- existing storm drain
- pedestrian circulation
- vehicular circulation
- water flow - surface
- water flow - below ground

- residential area
- vehicular use area
- sports / play area
- vegetation
- water / wetland
- slope
- property line

Pedestrian access to the Park is only provided from the south, via a multi-use trail that connects to a Township trail along Clemens Road. A sidewalk runs along Fairgrounds Road, but does not provide access to the Park or connect south to Clemens Road. Pedestrians will frequently enter the Park along the vehicular driveway that traverses the basin.

It is important to note that a portion of the existing pedestrian trail system is off the property along the western property boundary that abuts the Clemens Food Group parcel.

soil map



Bo - Bowmansville-Knauers Silt Loam

ReB - Readington Silt Loam

RhB - Reaville Silt Loam

Geology and Soils

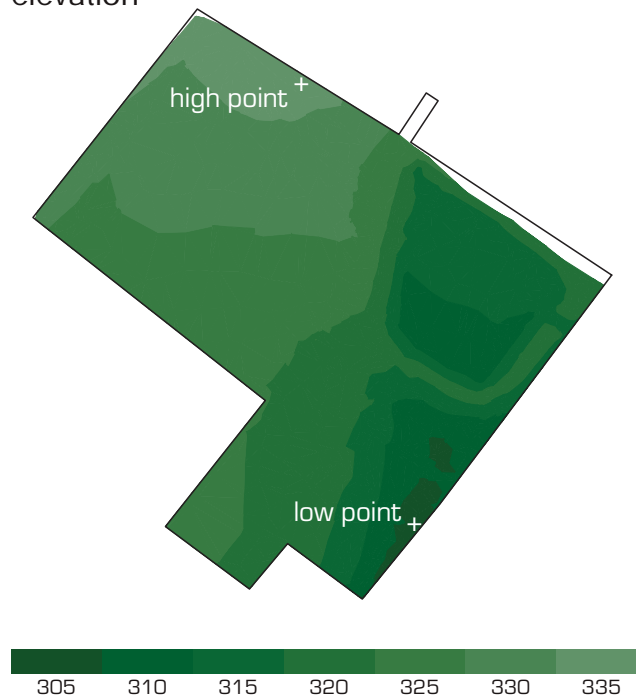
The site is located in the Gettysburg-Newark Lowland Section of the Piedmont Province of Pennsylvania. The region is characterized by rolling low hills and valleys, which consist primarily of red sedimentary rock.

John S. Clemens Memorial Park has a single bedrock formation, Brunswick Formation, formed during the Triassic age. Brunswick Formation consists of mudstone, siltstone, shale, and argillite. (Geological Map of Pennsylvania, Department of Environmental Resources)

The following soils are found on the site: Bowmansville-Knauers silt loam (Bo), Readington silt loam (ReB), and Reaville silt loam (RhB). Information for the various soil types was acquired from the United States Department of Agriculture's online Web Soil Survey.

Bowmansville-Knauers silt loam (Bo) – Found on the east side of the existing water basin. The soil is 0% to

elevation

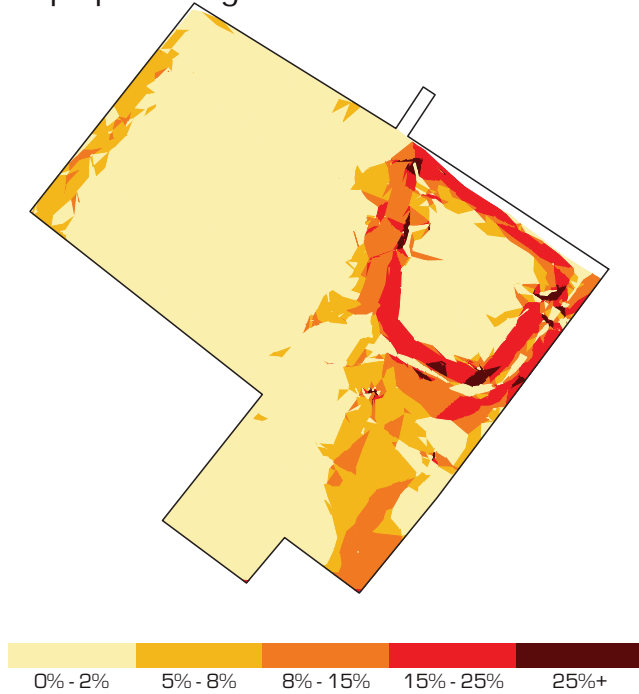


3% in slope and makes up 12.2% of the site. The soil is shallow with 0 to 18 inches to the water table and somewhat poorly drained with very high runoff. The depth to the bedrock is 72 to 99 inches.

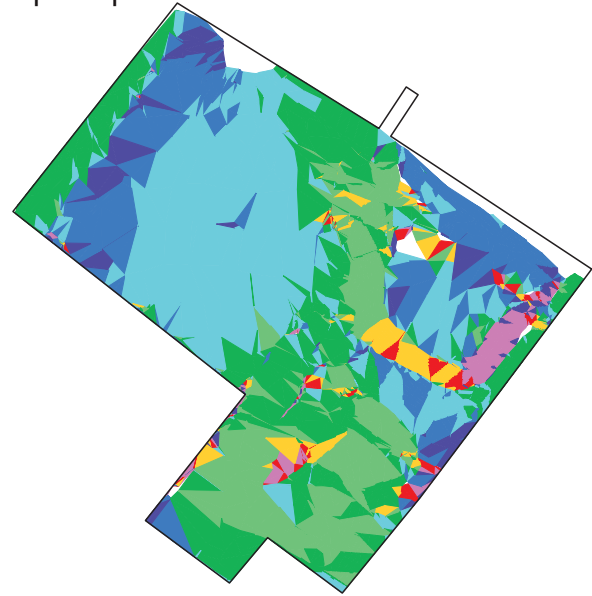
Readington silt loam (ReB) – Found on the majority of the site. The soil is 3% to 8% in slope and makes up 83.8% of the site. The soil is moderately deep with 18 to 36 inches to the water table and is moderately well drained with low runoff. The depth to the bedrock is 40 to 60 inches and the depth to the fragipan is 20 to 36 inches.

Reaville silt loam (RhB) – Found along the southern edge of the Nolen property. The soil is 3% to 8% in slope and makes up 4% of the site. The soil is moderately shallow with 6 to 36 inches to the water table and is moderately well drained with very high runoff. The depth to the bedrock is 20 to 40 inches.

slope percentage



slope aspect

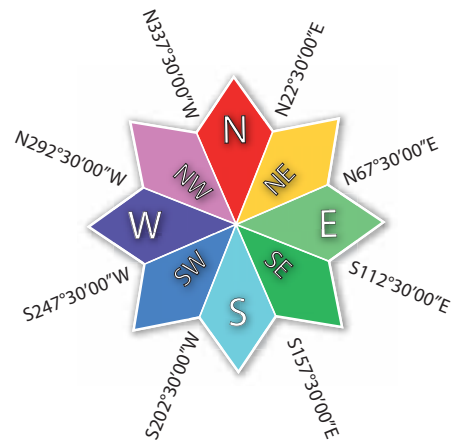


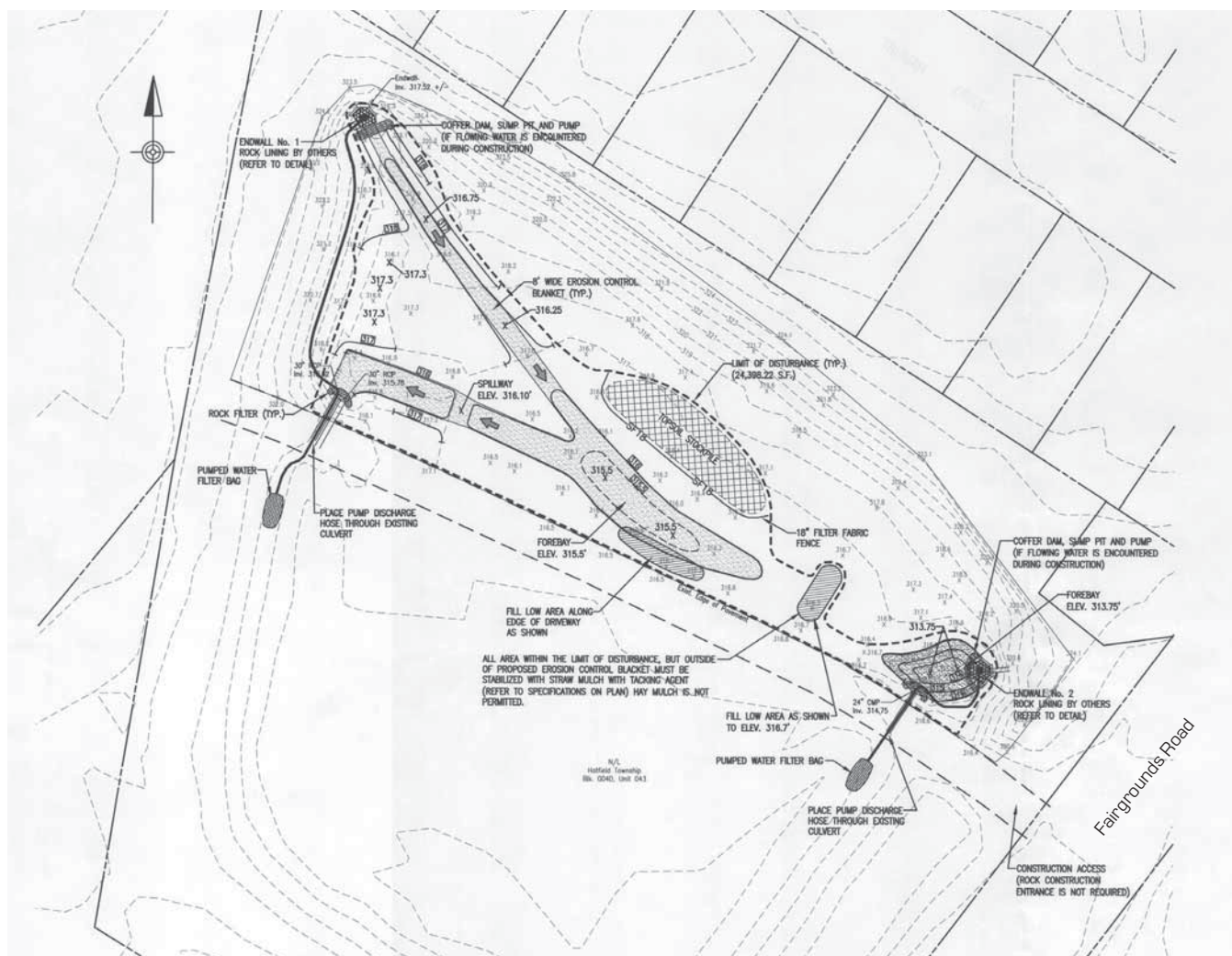
Topography

The topography at Clemens Park is primarily flat, with the exception of the basin side slopes and the front yard of the Nolen Property. This provides for a recreation facility well suited for active recreation fields.

The maximum elevation in the park is 339 feet above sea level, located in the northern corner of the site. The low point of the site is located to the south on the Nolen property and is 307 feet above sea level. The steepest slopes are found in the basin and exceed 25% in some areas.

The direction of slope faces, or slope aspect, impacts plant material, animal habitat and user experience. Slopes facing west provide opportunities for sunset views.





Grading and Reseeding in the basin in 2013 (completed by CKS Engineers) - not to scale

Hydrology

Clemens Park is located in the Perkiomen Creek watershed, which feeds the Schuylkill River watershed and ultimately the Delaware River watershed. Water flow on the site drains primarily from the north to the south. The recreation fields sheet flow primarily south towards the adjacent Clemens Food Group agricultural parcel and the Nolen property. Some water drains into a swale along the northern boundary of the Nolen property and drains to the basin. Water on the Nolen parcel sheet flows southeast towards Fairgrounds Road. Only a small portion of the recreation fields and a portion of the parking lot flow into the stormwater

basin. The stormwater basin is primarily fed from the development north of the park.

The Nolen property has three wells on-site. Two wells are located in the residence structure and one is located just east of the barn structure. Of the two wells in the residence, one is capped and the other is still used as a water source for the residence. The well adjacent to the barn has not been utilized in years, but has a natural water seep. Seep water drains toward Fairgrounds Road where it flows into a storm inlet adjacent to the driveway. This natural seep creates unique opportunities for Stormwater BMPs, environmental education, and enhanced Park features.



Basin Assessment

The stormwater basin located along the eastern property boundary of the Park is approximately 2.86 acres in size, and 11 feet deep at the low point. The top elevation of the basin's berm is 322, and the low point within the basin is 311. The entrance drive of the Park runs through the center of the basin. The basin was implemented during construction of the residential development north of the park. Water flows into the basin from two culverts, one from the development and one from Fairgrounds Road. Water flows out of the basin at the southern end via a culvert.

The basin is significantly oversized. CKS Engineers (the Township Engineer) completed a preliminary stormwater assessment of the basin to determine the approximate capacity required for the 100 year storm. Based on calculations, it was estimated that the existing basin requires approximately 257,219 cubic feet of storage for the peak flow of a 100 year storm. It is recommended that any redesign of the basin account for 260,000 cubic feet of capacity.

A complete stormwater assessment by analyzing the run-off values of adjacent lands feeding the basin was not completed for this study. Rather, the capacity of the 100 year storm was determined by selecting the lowest elevation along the perimeter of the basin. This is the low point along the entrance drive, which functions as an emergency spillway for the basin. The capacity at this elevation is 257,219 cubic feet, or 5.9 acre-feet.

In 2013 the basin was reseeded with an Ernst seed mix and some minor grading was completed. This effort to naturalize the basin addressed some MS4 requirements for the Township in this watershed.

Stormwater Infrastructure

A system of underground stormwater infrastructure exists at Clemens Park and its environs. Stormwater

from the development north of the park is piped between houses on a 30 foot wide parcel of land owned by the Township to the basin where it outfalls into the basin from a culvert. There is a manhole along this pipe run. Stormwater infrastructure along the west side of Fairgrounds Road north of the Park also feeds the basin.

At the southern end of the basin, water outflows through a culvert to an underground stormwater system in Fairgrounds Road. Here the infrastructure flows south towards the Clemens Food Group facility where it discharges into a large detention basin and eventually a piped stream that continues south. The seep on the Nolen property drains to a stormwater inlet adjacent to the driveway where it flows to an underground stormwater system that flows into the stormwater infrastructure in Fairgrounds Road.

Vegetation

The vegetation found at Clemens Park is primarily lawn with some areas of thicker vegetation and wetland meadow species in the basin. The northern boundary of the Park has a thin buffer of plantings along the rear property lines of adjacent houses. A line of trees also separates the basin from the Nolen parcel.

The parking lot has some perimeter trees. Along Fairgrounds Road there are street trees spaced approximately 40' on-center. The trail connection from the Park to Clemens Road is tree lined with trees approximately 50' on-center, but on alternating sides of the trail. The rest of the park has sporadic trees and shrubs.

Areas void of vegetation include the asphalt multi-use trail, the entrance road and parking, the Nolen property driveway, the cricket pitch, the softball infield, and the various structures found throughout the Park.

Wildlife

Much of Clemens Park has very little wildlife value or potential, with the exception of the basin. The grass fields provide minor habitat for small mammals and insects. The sporadic trees provide some nesting opportunities for birds. The region is home to many larger bird and mammal species, such as hawks and deer.

The stormwater basin offers habitat for small mammals, insects, reptiles, and amphibians. It was noted during the public involvement process that frog species have been found in and around the basin. The opportunity exists to enhance the ecology of the basin and provide for a more diverse wildlife habitat.

A Pennsylvania Natural Diversity Index (PNDI) was conducted for the site. PNDI records indicate that there is no potential threatened or endangered species that would be impacted by development within the Park. No further review was required. The PNDI receipt is found in the appendix of this report.

Existing Programming

Programming at Clemens Park is currently limited to scheduling organizational use of the active recreation fields. Other organizations have requested additional field time, which cannot be currently provided for at the Park. Park programming is full from March to December. Maintenance occurs at the Park once a week, when no programming is scheduled.

Additional programming should be considered. This Park master plan, including the acquisition of the Nolen property, presents opportunities to design for additional active recreation fields that would provide more programming opportunities for sports organizations. The Township should also look at other programming catered towards different user and age groups. Future program ideas are provided for in the recommendation section of this report.



Nolen residence (picture by Ray Masser)



Nolen residence (picture by Ray Masser)



Structural addition to Nolen residence



Wash house



Nolen residence from Fairgrounds Road



Privy (picture by Ray Masser)



Post-frame barn



Post-frame barn

Evaluation of Existing Buildings

Frens and Frens Restoration Architects conducted an assessment of the existing structures on the Nolen property to determine the feasibility of any adaptive reuse that would serve as a contributing element to the redesigned Park. These structures include a farm house, post-frame barn, wash house, privy and chicken house.

If these structures are retained, the general recommendation for the farm house and barn is to not convert them for public use but keep them as a single-family residence and barn / storage facility, respectively. Changing their uses to public use would trigger full compliance with the building code for assemblies, making accessibility and construction compliance in these older structures difficult, costly and inefficient. As the feasibility for recreational uses in these facilities is limited and cost-prohibitive, concepts plans were developed with and without the residence in place. The full draft assessment can be found in the Appendix of this report.

Opportunities and Constraints

Clemens Park offers many opportunities to maintain and improve upon the existing facilities and operations at the Park, as well as constraints that will limit development and programming in areas:

Acquisition of the Nolen Property

Opportunities. The acquisition of the Nolen property adds an additional 5 acres to the Park for a total of 17 acres. This offers opportunities to expand and add Park programs. A large flat area at the rear of the residence offers active recreation field potential. The property frontage along Fairgrounds Road presents an opportunity for a new vehicular and pedestrian access to the site that does not traverse the existing basin.



Nolen Residence

Existing Facilities and Field Layout

The natural seep on the property from an old well provides an opportunity to create a stormwater BMP and / or an attractive Park feature. The existing multi-use trail that connects south to Clemens Road runs along the northwestern property line and provides additional connectivity opportunities.

Constraints. The Nolen property includes structures that date back to the late 1800s and early 1900s. The structures currently and best serve as a residence. The adaptive reuse of the buildings for parks and recreation is very limited. This is due to the small rooms that make ADA accessibility conversion difficult and costly. The structures would also not qualify for restoration grants. Without a recreational or community related use or program for the structures, they become a liability for the Township to improve and maintain.

Existing Facilities and Field Layout

Opportunities. The existing facilities at the Park are heavily used and programmed. The cricket pitch offers a unique recreational facility that draws users from across the region. The large flat playing fields and the

addition of the Nolen property offer opportunities to rethink field layout and maximize active recreational use of the Park.

Constraints. The use of Clemens Park by multiple sports organizations at one time is limited with its current field layout. The size of the Park, even with the addition of the Nolen property, limits the number of recreation facilities that can be added to the Park. The current orientation of the softball field also has to be shifted so the line between home plate and the pitcher's mound has proper solar orientation. Home plate to second base must be north – northeast so that the batter is protected from looking into the sun.

Stormwater Basin

Opportunities. The existing stormwater basin offers opportunities to enhance ecology on the site and provide improved stormwater BMPs. According to stormwater volume calculations, the basin is oversized. This provides an opportunity to rework the interior of the basin and provide additional Park amenities while still meeting stormwater requirements.



Stormwater Basin



Connectivity

Hatfield Township is a MS4 community and the basin at Clemens Park is part of the Township's MS4 requirements. By redesigning the basin, additional stormwater BMPs could be incorporated that would assist the Township in meeting their mandated and costly MS4 requirements.

Constraints. The existing stormwater infrastructure creates invert elevation constraints. Culverts must be placed above the 100 year storm elevation of any proposed improvements in the basin to avoid water back-up in the pipes.

Connectivity

Opportunities. There are many opportunities at Clemens Park to improve trail and vehicular connectivity. Vehicular connectivity can be improved with a new Park entrance through the Nolen property. This provides a better ingress and egress of the Park.

The framework is in place for improved trail connectivity. A 30' wide piece of Park land connects north to Truman Drive. Currently a stormwater pipe runs through this strip of land and feeds the stormwater basin. The

opportunity exists to create a trail connection here to provide easy Park pedestrian access for residents in the development north of the Park. The existing trail connection to Clemens Road provides opportunities to link to the Township trail system.

An existing sidewalk runs along part of Fairgrounds Road. This sidewalk could be continued south to Clemens Road to provide additional connections for pedestrians. A pedestrian crossing along Fairgrounds Road would provide pedestrians with a safe crossing. A utility line runs along Alderfer's Auction and connects to the Pennfield Middle School. A formalized trail connection here would link the Park and School.

Constraints. The thin parcel of land that connects north to Truman Drive is very close to residents. Privacy needs to be considered when designing this connection and other trail connections. Buffering with plant materials and a fence could help to provide proper privacy.



CHAPTER

3

RECOMMENDATIONS AND DESIGN GUIDELINES

Anticipated Level of Use

John S. Clemens Memorial Park will need to serve Hatfield Township residents as both an active and passive recreation facility. The Park currently receives a high level of use, which is anticipated to continue and increase as Park development proposed in this master plan occurs. Improvements will seek to fulfill the recreation needs of user groups of all ages and abilities.

Concept 1



Concept 2



Preliminary Concept Plans

The public involvement process generated a community consensus of ideas and themes. These were developed into four concept plans and presented to the committee and public. The following were the primary facilities that were considered and presented in the concept plans:

- New vehicular entrance
- Trail connection to Truman Drive
- Baseball / softball fields
- Basketball court
- Cricket field
- Multi-purpose field
- Parking
- Pavilions
- Playground / Tot Lot
- Pump track
- Soccer fields
- Splash plaza
- Stormwater BMPs / Changes to the existing stormwater basin area

Concept Plan 1

Concept Plan 1 focused on maximizing active recreation facilities within the park. This plan included: two baseball / softball fields, a cricket pitch, a basketball court, three multi-purpose fields, a playground and tot lot. A pavilion was located in the center of the primary sports area. Parking was located in a single lot at the entrance to the Park. The lot held upwards of 150 cars and was tiered to accommodate the change in grade. An expanded trail system ran the perimeter of the park as well as weaving through areas of interest, including the enhanced stormwater management area.

The stormwater management strategy in Concept Plan 1 included a permanent wet pond and infiltration basin along Fairgrounds Road. Water entered the pond from an existing stormwater outfall and drained into a forebay to slow water flow and remove sediments.

Water from the pond flowed into an infiltration basin for further purification before flowing into the existing stormwater drainage system.

Concept Plan 2

Concept Plan 2 included: a baseball / softball field, a cricket pitch, two basketball courts, two multi-purpose fields, and a BMX pump track. Near the entrance to the park was an open play field for various activities, including sports and picnicking. Along the western edge of the park was a pump track. This location minimized conflict between pedestrians and cyclist activities. Central to the park was a splash plaza with pedestrian access around the outer edges. This plaza was directly adjacent to the park's playground. Directly north of the splash plaza was the pavilion. The pavilion and splash plaza served as a focal point for the entrance road to the park.

This vehicular access turns right to the existing parking lot. Additional parking was added for a total of over 140 parking spaces. Few changes were made to the existing trail system but additional trails created a perimeter loop trail for the park. The existing residence structure was kept in this concept. This assumes that the Township would fund improvements to make the structure ADA compliant, to budget for additional maintenance obligations, and to have established a feasible program for the space.

Rather than creating a new stormwater management system, Concept Plan 2 utilized the existing basin as stormwater management, including the inflow from the natural spring and Truman Drive, with outflow continuing down to the existing stormwater drainage system. Due to the size of the existing basin, additional trails were limited to the eastern edge, which helped separate the stormwater basin from the residential area.

Concept 3



Concept 4



Concept Plan 3

Concept Plan 3 aimed to minimize the environmental impact on the site while still incorporating desired facilities. Only two formal sports facilities were included: one baseball / softball field and one cricket pitch. There were three multi-purpose fields, with two located in the northern portion of the park and one to the far west side on the newly acquired park land. Besides the multi-purpose field on the new park land, there was a park pavilion and a playground for children of all ages.

There was a second pavilion in the northeast corner of the park, designed primarily for those using the sports fields. Parking included the existing parking lot, which has roughly 71 spaces, as well as a new tiered parking area at the entrance to the park which has approximately 150 spaces. In addition to the increased parking, the trail system was increased to create direct access to all of the key park areas.

The stormwater management system associated with Concept Plan 3 was the most intricate and included various stages of water flow through the three step pools.

Concept Plan 4

Concept Plan 4 was created after the Public Meeting #2 where the first three concepts were presented. The primary reason for this plan was to incorporate key organizational elements in which the public expressed interest. Concept Plan 4 incorporated many of the similar facilities as Concept Plan 3 including one baseball / softball field and one cricket pitch as well as three multi-purpose fields primarily used for soccer. The other key element included in this Concept was the open play field at the front of the park that can be used as a passive recreational space.

This Plan incorporated more pavilions than the others, with a total of five. One served as a bathroom facility and pavilion. Nearby to the bathroom / pavilion was the centrally located playground and splash plaza. The largest change to this Concept was the parking layout. A small parking lot was found near the entrance to the park and had a capacity of roughly 50 vehicles. The second lot was located along the western edge of the park and had a capacity of roughly 100 vehicles. Concept 4 echoes the stormwater basin approach from Concept 3.

Each of the stormwater management systems can be implemented interchangeably with the Concept Plans. The Concept Plans and included stormwater management plans are shown together in no particular order or priority.



Master Plan

Overall

The proposed master plan for John S. Clemens Memorial Park incorporates the most needed and highest priority elements formulated during the public and committee meetings and artfully marries them to the site. A balance between active recreation and passive recreation was sought to create a Park facility that will meet the needs of the greater community. The proposed improvements are described herein:

184^{total}
parking spaces

0.90^{miles}
trails

8,500^{square foot}
playground



active vs. passive recreation

3
total
multi-purpose fields

261,327
cubic feet
approximate capacity of infiltration step pools

2
total
softball fields

0.66
acre
permanent wet pond

1
total
cricket field

0.80
acre
native meadow

1
total
splash pad

3
total
pavilions



new park entrance

New Park Entrance

The master plan explores a new park entrance along the Nolen property and an expanded parking area. The current parking lot has approximately 71 parking spaces. The proposed parking would accommodate over 180 parking spaces. The trail system at the park would also significantly increase. The current loop system around the park is 0.37 miles. The proposed trail system is 0.90 miles with a loop trail system of 0.65 miles. These trails connect with the existing trail to Clemens Road, to the residential development north, and to existing and proposed sidewalks along Fairgrounds Road.

The new Park entrance is located across from Alderfer's Auction. Adequate site lines are provided at this location and a pedestrian crossing is proposed across Fairgrounds Road. This allows pedestrian

access to Alderfer's Auction, where overflow parking for the Park has occurred in the past. This crossing also provides an opportunity to connect with the school district property. A utility easement runs along the edge of Alderfer's Auction and connects to Pennfield Middle School. The Township should consider formalizing this connection with a multi-use trail.

The entrance road runs up a slight slope into the Park. Off of the entrance road to the south is a 56 car parking lot. A buffer, consisting of an earthen berm with screening plant materials, is recommended along the property boundary with the private residence to the south. Between the parking lot and Fairgrounds Road, a native plants meadow is proposed that will create an attractive entrance to the Park while providing ecological and stormwater BMP benefits.

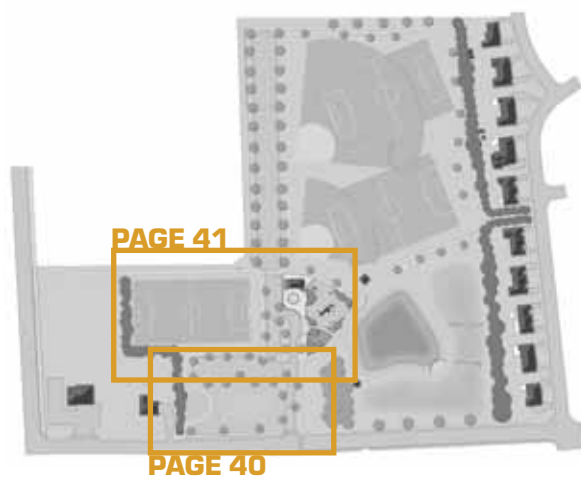


central plaza and playground

Activity Core

The activity core of the Park is located along the entrance drive. A formalized pedestrian drop-off area is proposed at a new Park plaza. The plaza includes a water spray play area, a pavilion, approximately an 8,500 square foot playground and tot lot, and bench seating. ADA parking spaces are provided, and a raised pedestrian crossing provides a safe trail crossing. South of the entrance drive is a 165 foot by 300 foot sports play field.

The existing natural spring seep is located adjacent to the proposed playground and tot lot. An improved well at this location is recommended to help maintain water levels in the proposed wet pond (discussed later in this chapter) and to irrigate the sports fields.





active recreation fields

Recreation Fields

Improvements at the recreation fields include the reorientation of the softball fields (to proper solar orientation) and a new parking lot that would replace the existing lot along the northern property boundary. This lot shows parking for approximately 128 cars (for a total of over 180). The parking runs along the southern property boundary. The existing trail at this location is located off-site. A 10' proposed trail is relocated on-site and positioned 5' from the property line and 5' from the proposed parking lot. This provides easy trail access for users that drive to the Park, good access to the sports fields, and the ability to watch field sports while parked in the lot (a concern expressed several times at public meetings).

The new field layout provides: a large softball field, a small softball field, two multi-purpose fields, and

a cricket field. Programming for the main fields will have to be carefully managed since the fields overlap. Both softball fields can be used at once, or both multi-purpose fields, or the cricket pitch, or one multi-purpose field and the small softball field.

Stormwater Basin Enhancements

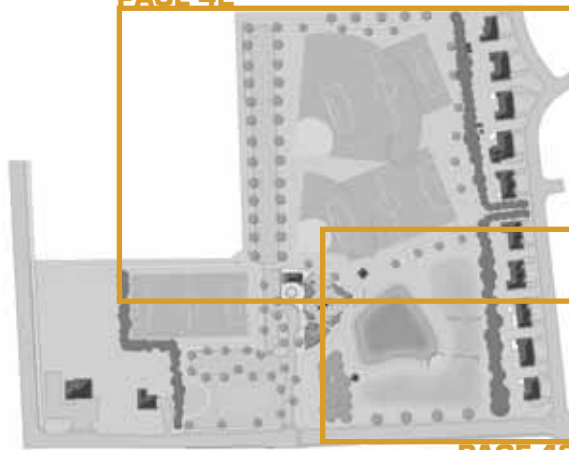
Improvements within the stormwater basin will address some of the township's MS4 requirements for this watershed while providing an ecologically rich and visually attractive Park feature. Step pools are proposed for a portion of the basin. These stormwater BMP features would help to collect sediments and reduce overall sediment discharge from the site. The Township would have to periodically remove sediments from the pools to retain the overall function. The capacity of the step pools will meet the current volume requirements for the 100 year storm.



A 0.66 acre wet pond is proposed for a portion of the existing basin. This provides opportunities for fishing, beautiful water views, and could be used for sports field irrigation. A bubbler should be installed in the pond to aerate the water and slow growth of algae. The natural spring seep on the former Nolen property can be directed into the pond. Most storm water runoff from the upper portions of the park will be directed into the step pools and flow into the existing stormwater system.

Trails, pavilions and overlooks are proposed around the wet pond and stormwater basins. Native wetland plant species should be utilized within the basin to expand plant and animal biodiversity and natural habitats.

PAGE 42



PAGE 43

Design Elements

The following are descriptions of proposed park elements found in the master plan:

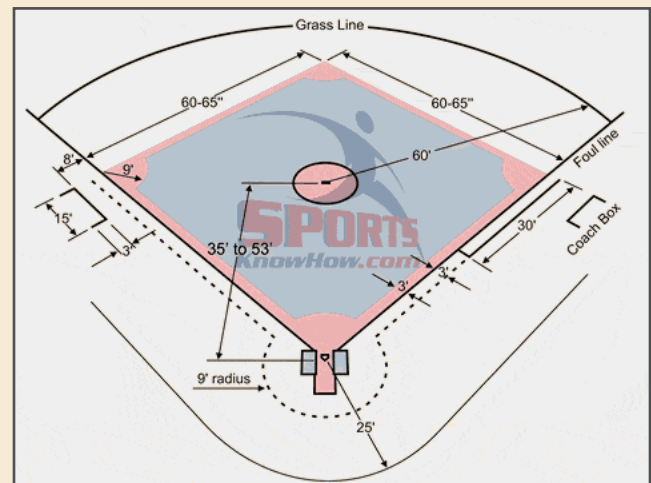
Sports fields

Multi-purpose fields - Multi-purpose fields are sized at 300 feet by 200 feet each. An additional 20 foot flat area on all sides of the field creates a safety zone and could accommodate bleacher seating. Overall dimensions are 340 feet by 240 feet. This size field provides for a range of sport fields including soccer, rugby, and field hockey. The Township should work with local sports organizations to determine the best program of use for the fields.

Softball Field - Two different sized softball fields are provided in Clemens Park Master Plan. The larger field has outfield dimensions of 300 feet along the foul line and 350 feet to center field. An additional 20 feet is provided beyond the field as a safety zone. No fence will be provided in the outfield since it would conflict with other sports fields. Behind home plate a backstop is provided. A second softball / baseball field is proposed next to the central plaza. The outfield is 200 feet, which will limit the level of play for the field. A backstop is also shown behind home plate. Benches should be provided at both fields along the first base and third base infields.

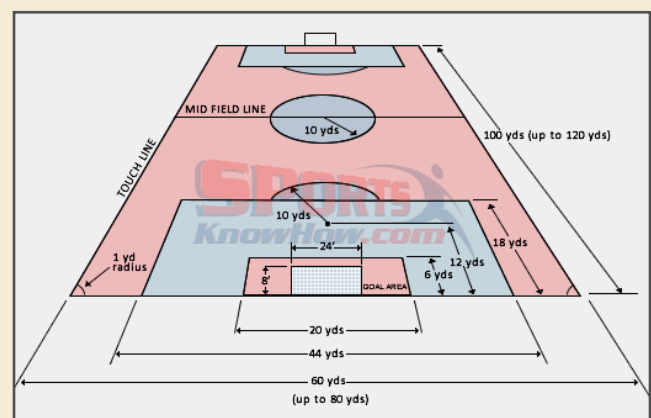
Additional information about dimensions of softball / baseball fields can be found at: <http://www.littleleague.org/leagueofficers/fieldspecs.htm>

softball dimensions



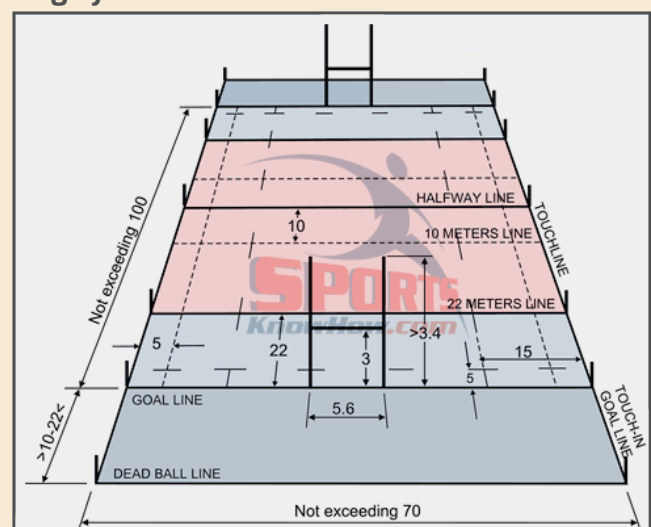
sportsknowhow.com

soccer dimensions



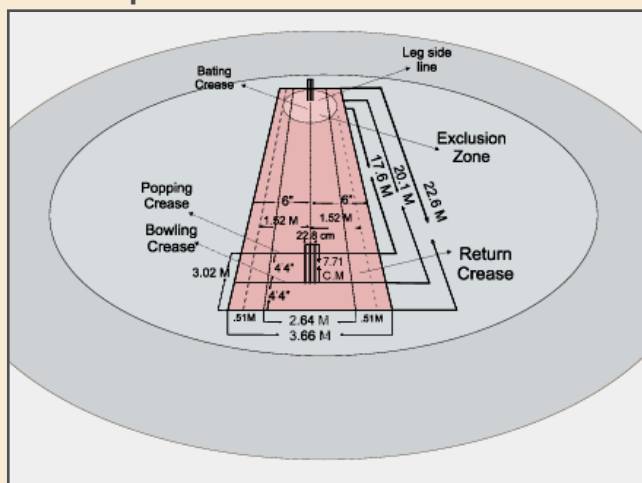
sportsknowhow.com

rugby dimensions



sportsknowhow.com

cricket pitch dimensions



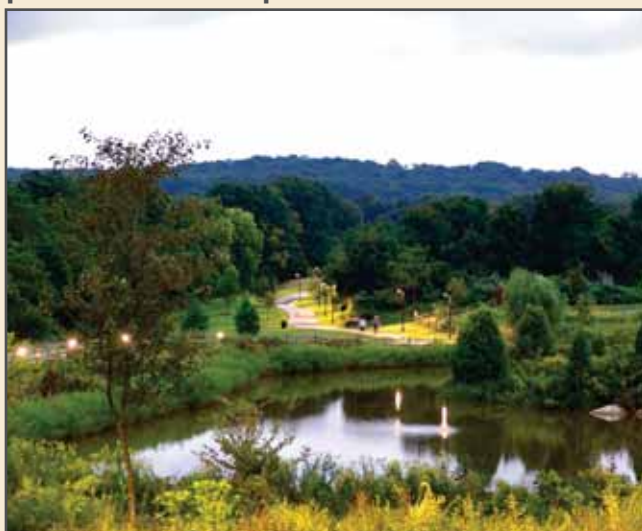
sportsknowhow.com

permanent wet pond



wilson farm park - wayne, pa

permanent wet pond



wilson farm park - wayne, pa

Cricket - The cricket field is proposed in the center of the recreation fields. The dimensions of the center pitch are 10 feet in width and 66 feet in length. The outer boundary of the field of play is somewhat loosely defined in cricket. A minimum field size is 450 feet long and 390 feet wide. The master plan field meets this dimension.

Additional information can be found at: <https://www.sportscourtdimensions.com/cricket/>

Manmade Pond

The proposed pond at John S. Clemens Memorial Park is approximately 28,000 square feet. The pond serves as an attractive park feature, stormwater BMP, recreational fishing amenity, and irrigation source for the Park's sports fields. Ponds and lakes are not uncommon at public parks throughout Pennsylvania. Water circulation in and out of the pond is essential to ensure pond health. Stormwater run-off from the recreational fields and impervious surfaces can be directed to the pond and the adjacent steps pools to provide stormwater BMP benefits. The natural spring seep and proposed well will provide water for the pond even during dry months. The pond will be designed with an emergency overflow that will drain into the step pool area.

Irrigation will be provided for the recreation fields using the pond water. Sports field compaction can lead to impact injuries for athletes. Irrigation can prevent sports injury caused by minimizing field compaction. Irrigation also protects the Township's investment in the Park's athletic fields.

Step Pools

The proposed step pools help the Township meet mandated MS4 requirements while providing an attractive wet area and ecological feature. The stormwater storage capacity of the step pools will meet or exceed the capacity requirements of the 100 year storm. The stepping feature is created from rocks that dam and slow water flows to allow sediments to settle out before the water flows into the next step pool. A waterfall feature is created between step pools, especially during larger rain storm events. Periodic clean-out of sediments in the step pools is required.

The step pools area will meet or exceed the storage area needed for a large storm event as well as providing an infiltration benefit. The step pools will be fed by stormwater runoff via the two existing culverts, one from the neighborhood development to the north and one from Fairgrounds Road. The invert elevations of the pipes will need to be adjusted to provide for adequate flow into the basin and the necessary storage capacity to meet the 100 year storm.

Playground

The creation of a playground is a high priority of the community. An 8,500 square foot playground area is proposed near the center of the Park. The large footprint provides enough area to implement a range of playground structures for children of various ages. Three typical age groups are toddlers (6 months to 2 years), pre-school age (2 to 5 years) and school age (5 to 12 years). Playground design and selection of structures is specific to each age group.

Playgrounds require a safety surface to minimize injury. Typical surface options include rubber matting, poured-in-place rubber surface, engineered wood fiber mulch, and rubber mulch. Proper drainage

infiltration step pools



nature based playground



inclusive playground



spray plaza



sister cities park - philadelphia, pa



martin luther king park - norristown, pa

must be installed under these surfaces that collects and removes stormwater. Site furnishings such as benches, tables and trash receptacles, should be positioned around the playground, but outside of safety fall zones of play equipment.

All playground areas should be fully accessible to children of all abilities. Nature-based playgrounds are also becoming more popular at public parks. These facilities use natural features such as boulders, landform and tree trunks, in combination with manufactured equipment, to create unique play environments that challenge children to use their imaginations and athletic skills.

Spray Plaza

A spray plaza is proposed in the park plaza as a central feature of the Park. Unlike the spray ground and water castle at Hatfield Aquatic Center, the proposed spray plaza is a much smaller water feature that provides for play, will be an attractive fountain feature and will serve as a small civic plaza.

The spray fountain includes a series of small jets that shoot water in the air. Water drains to an inlet and recirculates through a filtered system. Lighting effects can be added.



accessibility diagram

ADA Accessibility

Improvements at John S. Clemens Memorial Park must be in compliance with current ADA accessibility standards. The most recent version of the standards are found at: <http://www.ada.gov>. Additional guidelines have also been developed for outdoor recreation facilities. These can be found at: <http://www.access-board.gov/guidelines-and-standards/recreation-facilities>.

The plan above shows the location of ADA routes and the required number of ADA parking spaces (6 spaces). At least 50% of the park bench locations must have a handicapped accessible paving area next to the bench. Athletic fields have accessible routes from handicapped parking to field spectator areas. The playground must be accessible.

Trail Facilities

Three trail types are proposed as implementation options for John S. Clemens Memorial Park.

Asphalt Surfaces - Asphalt surfaces provide for the widest variety of trail users including bicyclist, walkers, joggers, wheelchair users, and in-line skaters. Porous asphalt can also be used in situations where stormwater infiltration or a pervious surface is required. Porous asphalt should not be used in flood prone areas where silt will clog the voids in the pavement. Porous pavement also requires additional maintenance in the form of vacuuming out voids to remove sediments. Asphalt paths should be 8 to 10 feet wide and will support access for township maintenance vehicles.



stone dust trail



stamped concrete



asphalt trail

trail type examples

Concrete Surfaces - Concrete is the most durable material for trail surfaces and the most costly. These are suggested in the Park plaza and at various nodes throughout the Park. Stamped and /or colored concrete provides opportunities for more decorative hardscape in areas.

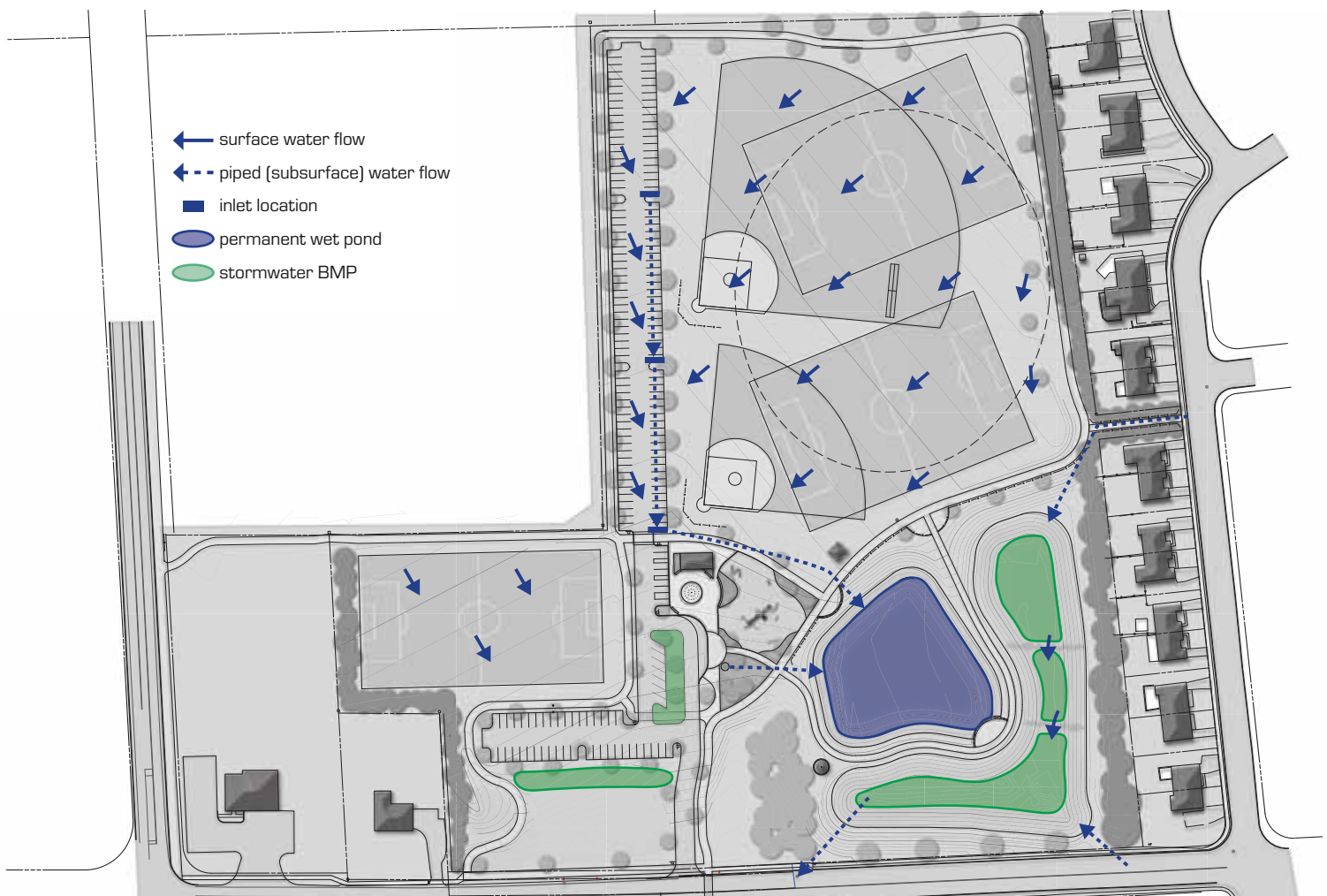
Compacted Aggregate Surfaces - Compacted aggregate or stone dust can accommodate all trail user types with the exception of in-line skaters and could be implemented at John S. Clemens Memorial Park. Initial installation costs for this trail surface are lower than asphalt or concrete. However, long term maintenance costs increase due to this surface's susceptibility to erosion, especially if not properly installed with swales and under drains. Crushed limestone or sandstone or "Trail Surface Aggregate (TSA) Mix" are typical aggregates used for this surface. A compacted aggregate surface can also serve

as a base material for an asphalt surface if trail use increases or funds become available for a surfacing upgrade. Compacted aggregate surfaces should be avoided in flood prone areas or on slopes over 5%.

Sources:

Guide For Development of Bicycle Facilities, American Association of State Highway and Transportation Officials (AASHTO), 2012;

Pennsylvania Trail Design & Development Principles, Guidelines for Sustainable, Non-motorized Trails, Pennsylvania Department of Conservation and Natural Resources (DCNR), 2013



hydrology diagram

Vehicular Circulation and Parking

Vehicular drive aisles and parking have to be designed to Township standards per the Hatfield Township Subdivision and Land Development Ordinance. Accordingly, parking stalls are shown at 9 feet by 18 feet and drive aisles are shown at 24 feet wide for two-way circulation.

A drop-off area is provided at the central park plaza. Here one-way circulation is created and a 12 foot wide drop-off lane is shown. ADA parking is provided at the central plaza, but could be implemented in other areas of the parking lot, if grading permits. This determination will be finalized during design and engineering.

Stormwater Best Management Practices

Stormwater Best Management Practices (BMPs) are important to implement throughout the Park to improve water quality. Areas where these improvements are recommended are near impervious areas, drainage swales, and next to recreational fields. Additional feasibility and stormwater quantity studies need to be completed during the design and engineering phase of implementation of these features.

The Pennsylvania Stormwater BMP Manual provides analysis, design, and implementation information for Best Management Practices. The link to the 2006 manual is: <http://pecpa.org/wp-content/uploads/Stormwater-BMP-Manual.pdf>

apex series by Forms +
Surfaceseverett series by
Keystone Ridge Designs

pavilion and restroom - Exeter Township, PA

site furnishing examples

Ecological Improvements

Improvements to the ecology of the site has countless benefits including stormwater BMPs, lower maintenance costs, increased animal and plant biodiversity, and improved user experiences. The native meadow at the front entrance to the Park and the enhancements made to the stormwater basin provide these features and benefits.

Site Furnishings

Site furnishings include: benches, tables, trash receptacles, grills, signage, and dog waste stations. Low level lighting along some of the park trails and safety lights at driveway and street intersections should be provided to allow safe passage for visitors leaving the park at dusk. Pavilions and restrooms are recommended structures for John S. Clemens

Memorial Park. These provide users with areas to rest and gather, while providing the Township with the ability to rent out pavilions for family reunions and similar events.

Restrooms are a highly desired Park facility that could be implemented in stages. Initially porta-potties could be installed at the park. As funding becomes available, permanent structures can be installed. These could include typical bathroom structures that link to sewer systems or composting toilets. Composting toilets require no sewer connection. Hatfield Township already has a maintenance system in place for restroom facilities that include automatic electronic locking systems.

Some examples of site furnishings are shown above. The Township should consider implementing a uniform style / family throughout the Park.

Programming

The proposed improvements for the Park will allow existing programming to be maintained while additional programming is added. The increased overall use of the Park has the potential to create new stakeholders or stewards of the park. The Township should work with the local community to determine the best programs.

Recreational Field Programming

Currently the programming at Clemens Park is strictly sports organizational use of the recreation fields. This programming should continue and additional organizational groups should be encouraged to utilize the Park's facilities. The Township should stay in communication with sports organizations to determine the demand for certain field types.

Year Round Programs and Events

Clemens Park currently lacks a year round program of events. There are many different opportunities available that utilize existing and proposed Park features to establish year round programs catered to all user groups. Specific programs should be determined by the Township and appeal to area residents. Examples might be:

- Community tree plantings (spring)
- Earth Day clean-ups (spring)
- Playground programs (summer)
- Sports Camps (summer)
- Seasonal festivals (year round)
- Sunset Yoga (spring, summer, fall)
- Stargazing (year round)
- Holiday tree lighting festival (winter)

Environmental Education

Interpretive signage and education programs can inform Park users of site features and preferred environmental practices to sustainably maintain the

park. Signage should be placed at rain gardens, meadow areas, and the stormwater basin. Educational programs can engage the community with hands-on demonstrations about stormwater management and practices utilized to maintain and enhance water quality.

Safety

Various measures are proposed throughout the Park to ensure the safety and well-being of all Park users.

Minimize Pedestrian and Vehicle Conflicts

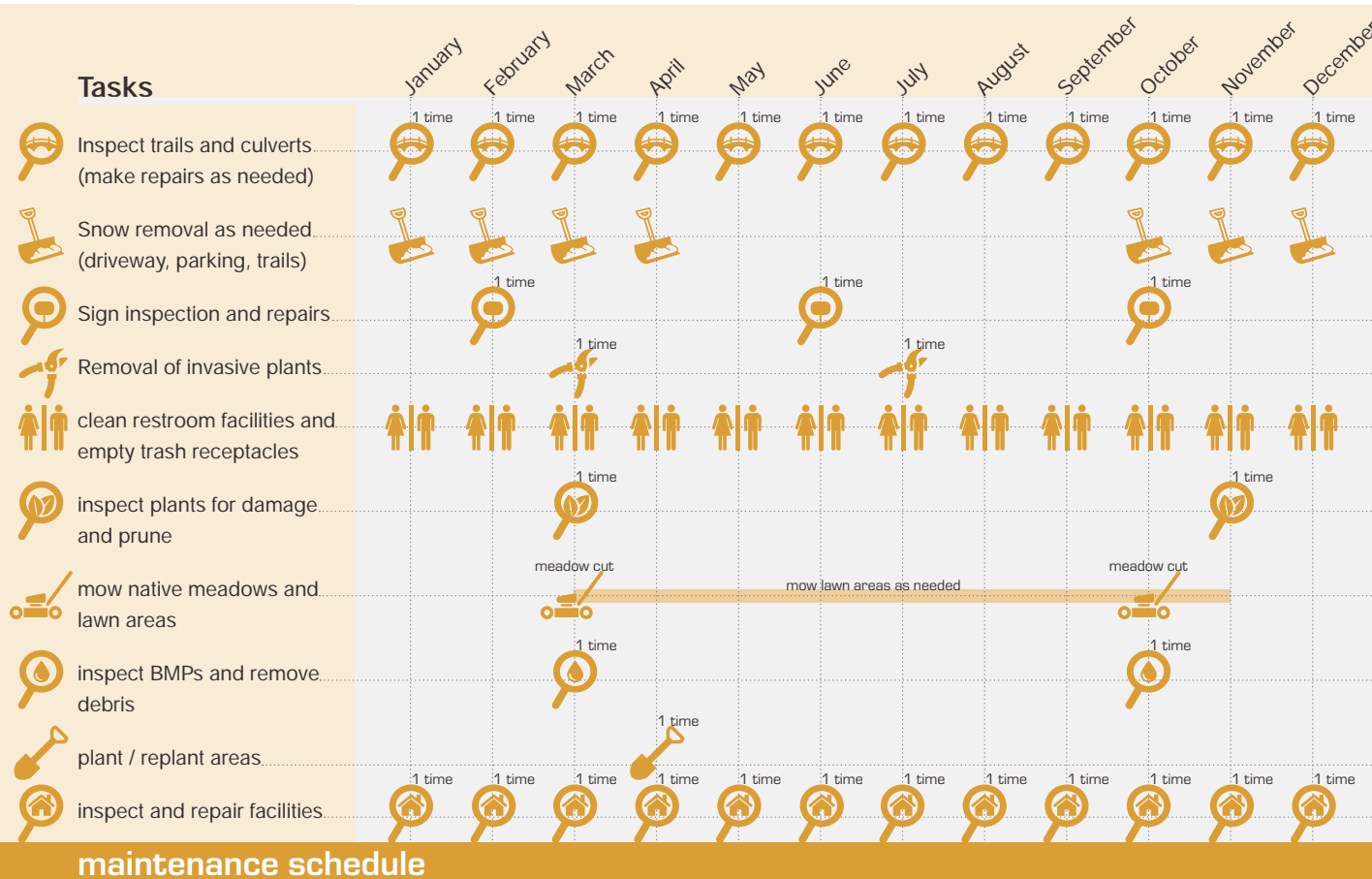
Pedestrian and vehicular crossings and conflicts should be limited wherever possible. Four pedestrian / vehicle crossings will occur in the Park.

A tabled crosswalk is proposed adjacent to the central plaza where a trail crosses a parking lot drive aisle. This feature stresses that pedestrians have the right of way. The tabled crosswalk also functions as a speed table to slow traffic.

Trails should cross vehicular routes at intersections where cars are stopped and desired sight lines are provided. Stop signs should be provided at interior driveway intersections to slow traffic and provide safe pedestrian movement. Crosswalks and signage provide both pedestrians and motorists with road markings and signs that dictate pedestrian crossing areas. A slow and safe speed limit, typically 10 miles per hour, is recommended and signs should be posted throughout the Park.

Stormwater Basin

Safety measures are incorporated into the design of the stormwater basin and wet pond. The side slopes of the wet pond are proposed at 6 feet horizontal to 1 foot vertical (6:1) and should not be steeper than 5 feet horizontal to 1 foot vertical (5:1) in any portion of the pond. The side slopes of the step pools are proposed at 5:1. Pedestrian overlooks of the basin



and wet pond, where side slopes are steep, should have fencing around the basin and pond side of the plaza. A fence is proposed adjacent to all slopes in excess of 4 feet horizontal to 1 foot vertical (4:1).

Site Maintenance

Maintenance Recommendations and Responsibilities

Maintenance at John S. Clemens Memorial Park is already well provided. According to the online public opinion survey, 65% of respondents felt that Clemens Park was well to very well maintained. The proposed master plan does add additional maintenance responsibilities for Hatfield Township. These should be accounted for prior to the implementation of capital improvements.

Trails should be regularly maintained to provide a safe user environment. Field maintenance and mowing should be kept to a minimum by allowing for more naturalized areas. Where mowing is required, it should be done on a regular basis. Naturalized meadows should be mowed once or twice a year. Maintenance of structures and removal of trash is required. Structures should also be locked at night to deter vandalism. Periodic repairs may be necessary to maintain the quality of facilities at John S. Clemens Memorial Park.

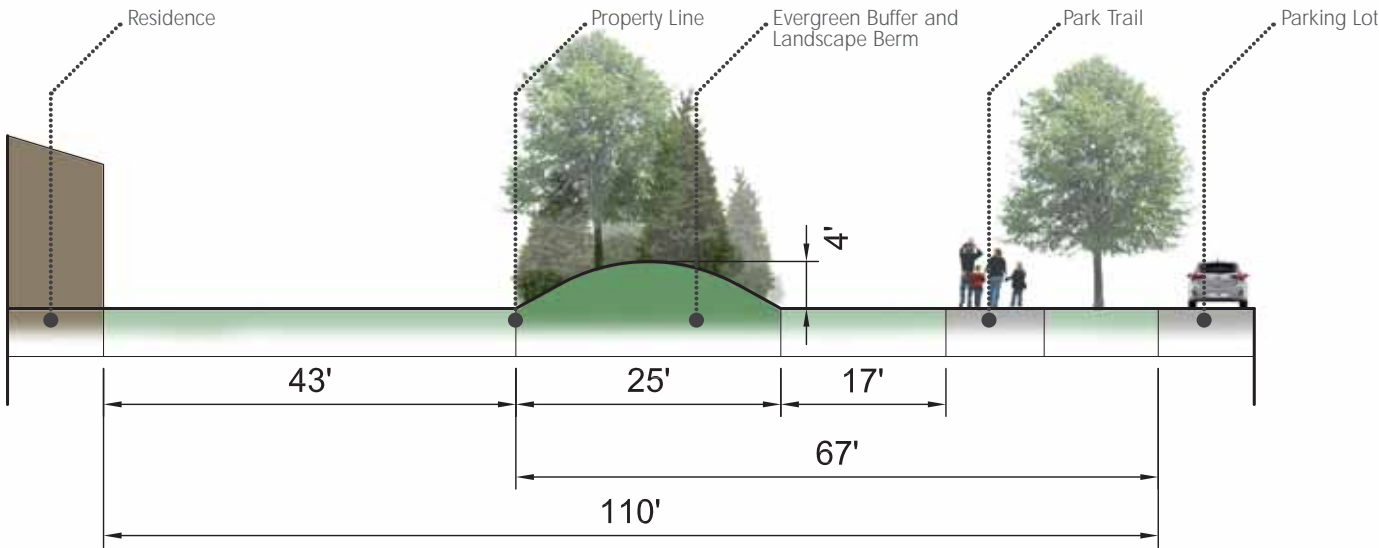
Please refer to the maintenance chart above for an overview of the typical maintenance tasks that can be expected for the park.

Landscape Buffer Sections

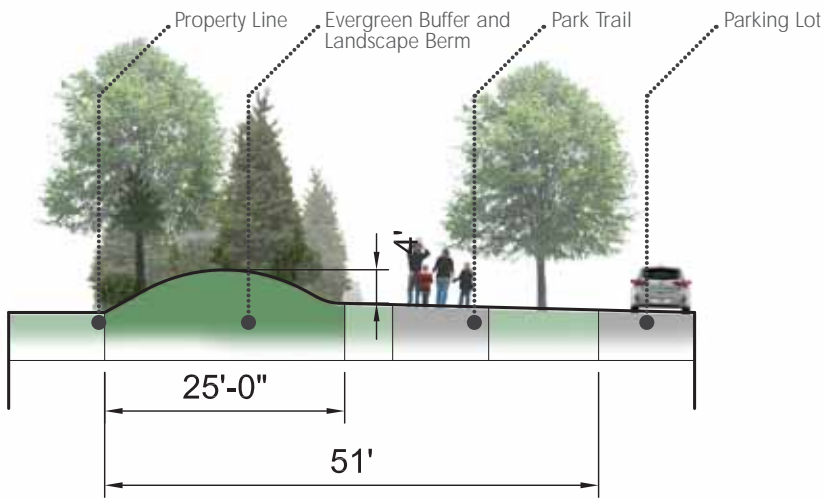
Buffers can be provided along property lines to provide adjacent residents with privacy. These can include vegetation, an earthen berm, a fence, or a combination of these buffers. An example of a vegetated earthen berm is provided below.



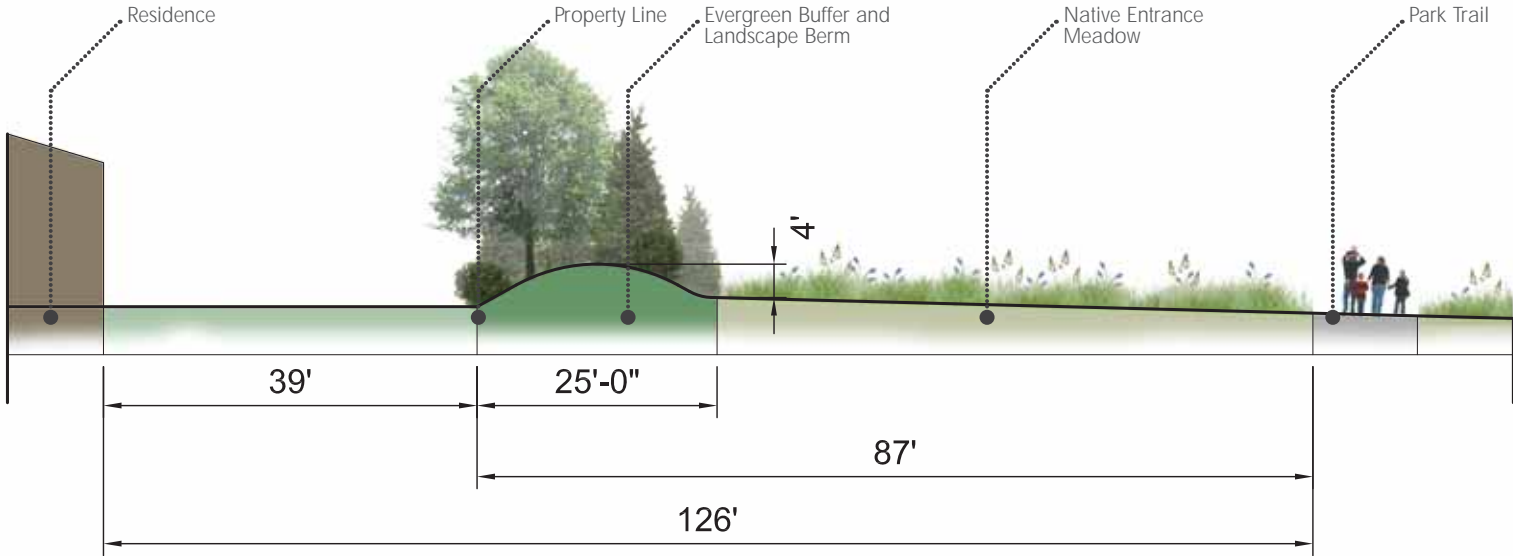
Section 1: Adjacent Residence to Parking Lot
scale: 1:20



Section 2: Park Boundary to Parking Lot
scale: 1:20



Section 3: Adjacent Residence to Park Trail
scale: 1:20

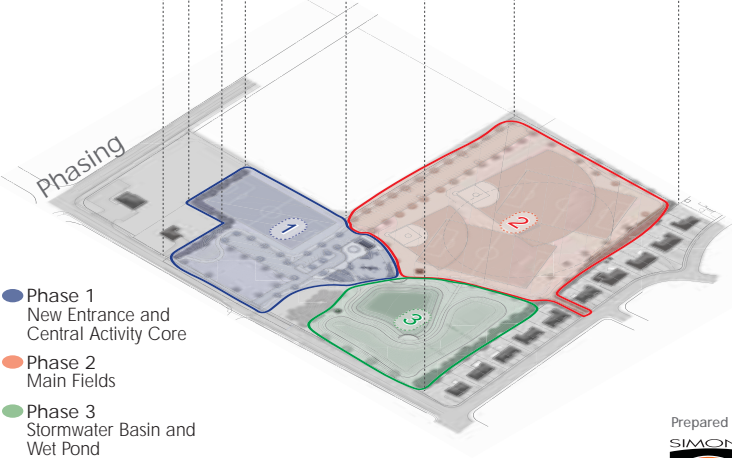
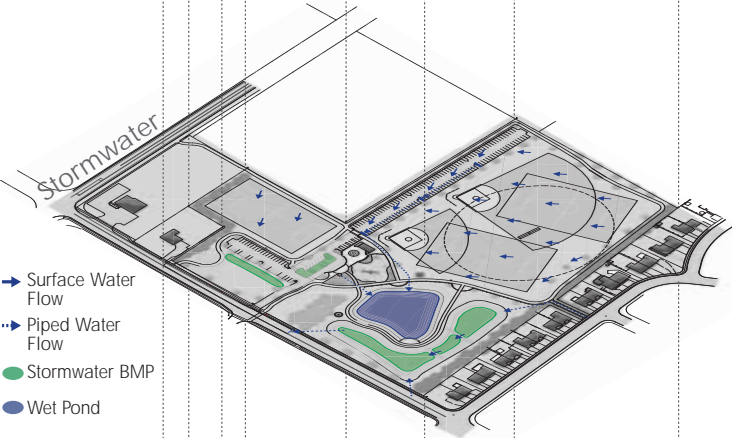
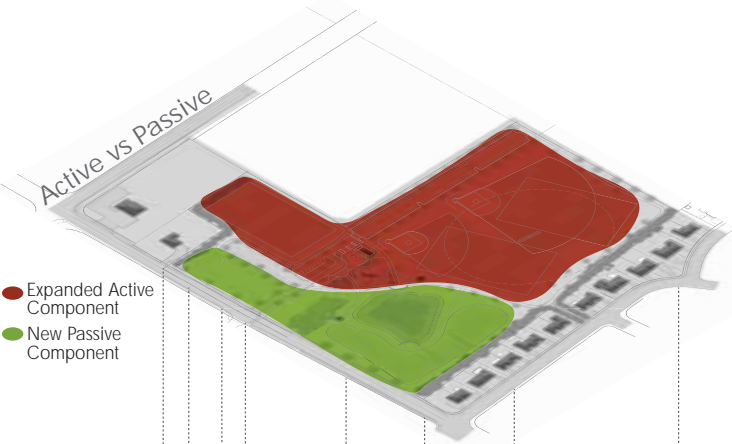


Park Illustration



John S. Clemens Memorial Park
Site Development Drawing
Hatfield Township, PA

December 2017



Prepared by:
SIMONE
LANDSCAPE ARCHITECTURE
COLLINS

Legend

- Road
- Asphalt Trail
- Concrete Walkways
- Water
- Maintained Lawn
- Naturalized Meadow
- Wet Meadow / Stormwater BMP
- Recreational Field
- Planted Area
- Playground
- Structure
- Shade Trees
- Evergreen Buffer

17.04 acre site





CHAPTER

4

IMPLEMENTATION

Project Phasing

Improvements to Clemens Park will most likely occur in phases, based on available funding. The timing and scope of the phases will be determined by the amount of future funding available and the Township's success with grant applications over the next seven or more years. The phasing plan for the park is included to suggest potential strategies for implementation.



Phase 1 includes the new park entrance from Fairgrounds Road, construction of the 56-space parking lot off the entrance driveway, installation of a buffer along the private residence, implementation of a native meadow between the parking lot and road, installation of the new central plaza and drop-off. The central plaza includes a water spray play area / fountain, a pavilion, a playground, and a tot lot.

Phase 2 includes site work to remove the existing 71-space parking lot and construct of the 128-space lot along the southern property border. Other improvements include a tabled cross-walk, the design of the new field layout consisting of a large and small softball field, two multi-purpose fields and a cricket field, and the formalization of a trail connection to the Park from Truman Drive.

Phase 3 involves improvements within the stormwater basin including the step pools, wet pond, stormwater infrastructure, trails and overlooks.

Cost Estimates of Capital Improvements

A detailed cost estimate of proposed capital improvements is provided in the Appendix of this report. A breakdown in phasing cost is shown on the facing page. Unit costs were established based on construction costs of similar projects and reflect State prevailing wage rates that are required for construction projects that utilize public funds.

Phase 1 Estimated Costs of Development	
Work Item	Total Cost
<i>1.0 Demolition and Site Preparation</i>	\$ 52,016
<i>1.1 Southeast Parking Area, 57 Spaces, and Crosswalk</i>	\$ 150,938
<i>1.2 Asphalt Trail, 10' Wide</i>	\$ 79,729
<i>1.3 Multi-Purpose Field (Size =165 x300)</i>	\$ 78,148
<i>1.4 Entrance Plaza Area</i>	\$ 267,916
<i>1.5 Playground Area</i>	\$ 252,530
<i>1.6 Well Area</i>	\$ 58,728
<i>1.7 Native Meadow</i>	\$ 43,458
<i>1.8 Vegetated Buffer</i>	\$ 22,078
<i>1.9 Site Amenities</i>	\$ 16,000
Phase 1	\$ 1,021,541
Mobilization (3%)	\$ 30,646
Construction Surveying (2%)	\$ 20,431
Erosion and Sedimentation Control (2%)	\$ 20,431
Construction Contingency (10%)	\$ 102,154
Design and Engineering (12%)	\$ 122,585
Total Estimated Project Costs - PHASE 1	\$ 1,317,787
Phase 2 Estimated Costs of Development	
<i>2.0 Demolition and Site Preparation</i>	\$ 121,475
<i>2.1 Linear Parking Area, 128 Spaces, and Crosswalk</i>	\$ 177,157
<i>2.2 Asphalt Trail, 10' Wide</i>	\$ 145,697
<i>2.3 Recreation Fields</i>	\$ 362,591
<i>2.4 Pavilion</i>	\$ 22,051
<i>2.5 Site Amenities</i>	\$ 20,000
Phase 2	\$ 848,970
Mobilization (3%)	\$ 25,469
Construction Surveying (2%)	\$ 16,979
Erosion and Sedimentation Control (2%)	\$ 16,979
Construction Contingency (10%)	\$ 84,897
Design and Engineering (12%)	\$ 101,876
Total Estimated Project Costs - PHASE 2	\$ 1,095,171
Phase 3 Estimated Costs of Development	
<i>3.0 Demolition and Site Preparation</i>	\$ 126,357
<i>3.1 Asphalt Trail, 8' Wide</i>	\$ 22,176
<i>3.2 Infiltration Basin</i>	\$ 65,826
<i>3.3 Wet Pond</i>	\$ 169,364
<i>3.4 Overlooks, Stamped Concrete</i>	\$ 76,824
<i>3.5 Pavilion</i>	\$ 22,051
<i>3.6 Site Amenities</i>	\$ 20,000
Phase 3	\$ 502,598
Mobilization (3%)	\$ 15,078
Construction Surveying (2%)	\$ 10,052
Erosion and Sedimentation Control (2%)	\$ 10,052
Construction Contingency (10%)	\$ 50,260
Design and Engineering (12%)	\$ 60,312
Total Estimated Project Costs - PHASE 3	\$ 648,351
Total Costs of Development	\$ 3,061,310

Construction Practices

Safe and environmentally sensitive construction practices for improvements should be observed. The Township will need to obtain a National Pollutant Discharge Elimination System (NPDES) permit for improvements. An open conversation with the Montgomery County Conservation District is encouraged during the design and engineering phase to understand Conservation District concerns and policies. This will relate to the entire project but especially for phase 3 work that involves the stormwater management basin that the Township uses to satisfy MS4 requirements.

The master plan recommends that design and engineering for all phases of development be implemented as part of phase 1 improvements. This allows the Township to meet the requirements of the NPDES permits while also making MS4 related improvements. Total design and engineering of the entire park during phase 1 will also facilitate success with future grants since the project will be “shovel-ready”, meaning ready for construction once funds are procured.

Potential Partners

Throughout the master plan process, various partners and stewards were identified that may assist with implementation, maintenance, programming, and funding of Park improvements. These are listed below:



Funding Sources

Pennsylvania Department of Conservation and Natural Resources (PA DCNR) - Community

Community Conservation Partnership Program (C2P2)

The Community Recreation and Conservation Program through the PA DCNR Community Conservation Partnership Program (C2P2) provides funding to municipalities and authorized nonprofit organizations for recreation, park, trail and conservation projects. These include planning for feasibility studies, trail studies, conservation plans, master site development plans, and comprehensive recreation park and open space and greenway plans. In addition to planning efforts, the program provides funding for land acquisition for active or passive parks, trails and conservation purposes, and construction and rehabilitation of parks, trails, and recreation facilities. Projects will receive additional consideration for using “green” technology or practices. Most of these projects require a 50% match, which can include a combination of cash and/or non-cash values. The first step is to contact the DCNR regional advisor.

Grant applications for the C2P2 program are accepted annually—usually in April. More information can be found at: <http://www.dcnr.state.pa.us/brc/grants/grantpolicies/index.htm>



Department of Community and Economic Development (DCED)

Commonwealth Financing Agency (CFA) - Greenways, Trails and Recreation Program (GTRP)

The Department of Community and Economic Development (DCED) Greenways, Trails and Recreation Program (GTRP) is a program that helps fund for planning, acquisition, development, rehabilitation and repair of greenways, recreational trails, open space, parks and beautification projects. Grant applications cannot exceed \$250,000 and require a 15% matching funds. Applications are due on May 31st for consideration in the Fall.

More information can be found at: <http://www.newpa.com/programs/greenways-trails-and-recreation-program-gtrp/>

Watershed Restoration and Protection Program (WRPP)

DCED Watershed Restoration and Protection Program is a funding program to restore, and maintain restored stream reaches impaired by the uncontrolled discharge of nonpoint source polluted runoff. Funds may be used for construction, improvement, expansion, repair, maintenance or rehabilitation of new or existing watershed protection BMPs; stream bank bio-engineering; and design services. Grant applications cannot exceed \$300,000 and require a 15% matching funds. Applications are due in May for consideration in the Fall.

More information can be found at: <http://community.newpa.com/programs/watershed-restoration-protection-program-wrpp/>

PennVEST (Pennsylvania Infrastructure Investment Authority)

Pennvest oversees the administration and finance of the Clean Water State Revolving Fund (CWSRF) and the Drinking Water State Revolving Fund (DWSRF) for the state of Pennsylvania. The CWSRF program provides funding to projects throughout Pennsylvania for the construction and maintenance of wastewater treatment facilities, stormwater management projects, nonpoint source pollution controls, and watershed and estuary management. The program offers low interest loans with flexible terms to assist a variety of borrowers that include local governments, municipalities, and privately owned entities and to establish partnerships to leverage other funding sources.

More information can be found at: <http://www.pennvest.pa.gov/Pages/default.aspx#.Vcux3WfbJ9A>

PECO Green Region Grant

Green Region grants are funded by PECO and administered by Natural Lands Trust. The grants can be used with other funding sources to cover a wide variety of planning and direct expenses associated with developing and implementing open space programs, including consulting fees, surveys, environmental assessments, habitat improvement, and capital improvements for passive recreation. Funding is available to municipalities in amounts up to \$10,000 and may cover up to 50% of the project cost. Grant deadlines are in the Fall.

More information can be found at: https://www.peco.com/SafetyCommunity/Community/Pages/Environment_OLD.aspx

Montco 2040 Implementation Grant

As part of the implementation of the new Montgomery County Comprehensive Plan, Montco 2040: A Shared Vision, a grant program has been established to allow municipalities to make targeted physical improvements that work to achieve goals of the Plan. The maximum amount awarded is \$200,000 (although typical maximum awards are closer to \$100,000.00) and the program requires a 20% local match. Projects must address a stated goal within one of the three themes of the Plan: Connected Communities, Sustainable Places and Vibrant Economies and awarded funds may only be applied to physical improvements. Funding themes change slightly each year. The next round of funding is anticipated for 2018. Funds must be expended within 2 years of award.

More information can be found at: <http://www.montcopa.org/2453/Montco-2040-Implementation-Grant-Program>.

Environmental Education

The Pennsylvania Environmental Education Grants Program awards funding to schools, nonprofit groups and county conservation districts to develop new or expanded current environmental education programming. The funds are administered through the Pennsylvania Department of Environmental Protection for projects ranging from creative, hands-on lessons for students and teacher training programs to ecological education for community residents. Educational Resources, including exhibits, educational signage, and demonstration projects, also qualify for funding. Grant applications cannot exceed \$3,000 and require no match, however it is recommended. Applications are due in December and awarded in April.

More information can be found at: <http://www.dep.pa.gov/citizens/environmentaleducation/grants/pages/default.aspx>



Legislative Funding

State and federal elected officials can sometimes include items into legislation for worthy projects in their districts. A conversation between county and municipal officials and legislators is the way to begin this process. This type of funding should be targeted toward capital improvement projects.

Private Foundations

There may be regional corporations and foundations that support public works such as park development. Competition for these funds is usually brisk, but opportunities should be researched. Funding is often to non-profit organizations.

Foundations and institutions represent another potential source of funding for education-related site improvements and programming. Grants are available to support student field trips, provide teacher training in science, and provide other educational opportunities. Education tied to research can increase the pool of potential funds. The science community and research institutions are the logical starting points for solicitation foundation funds.

Schools and Local Organizations

Local schools and sports organizations may also be of assistance in several ways. These groups might get involved with club, fundraising events, and park cleanup days. The school faculty might incorporate the Park, especially the improved stormwater basin and BMPs, into various curricula with students helping to develop and possibly maintain the Park as part of a classroom assignment or after school club. While the amount of funds raised may be relatively small, this process builds constituents and support that is critical to the long-term success of the Park.



CHAPTER 5

APPENDIX

Public Involvement

Committee Meeting Minutes 1 - 4
Public Meeting Minutes 1 - 4
Key Person Interviews
Board of Commissioners Meeting Minutes
Online Public Opinion Survey Summary

2. Draft Plan Public Comments

DCNR Comments
DCNR Comment Response Letter
Public Comments

3. Background Data

Agreement of Sale
Background Mapping
Site Survey - Completed by CKS Engineers
Preliminary Stormwater Assessment - Completed by
CKS Engineers

4. Clemens Park PNDI

5. Clemens Park Building Assessment by Frens and Frens Restoration Architects

6. Preliminary Proposed Infiltration Basin Calculations

7. Capital Improvement Cost Estimates

JOHN S. CLEMENS MEMORIAL PARK MASTER SITE DEVELOPMENT PLAN

