APPENDIX A: MANSION HISTORY

The History and Architecture of Oakbourne

In 1882, a wealthy Philadelphia lawyer named James Charles Smith and his wife, Heloise Drexel Smith, purchased 143 acres of land on the west side of what is now South Concord Road in Westtown Township.

Mr. and Mrs. John Hulme, a Philadelphia industrialist, originally owned the estate, which they had named Belmont. Their property included a 2½ story Italianate grey granite farmhouse, the outline of which can be seen today from the front of Oakbourne Mansion. It was five bays wide and had a center entry door and five garret windows along the top half-story.

By 1884, Mr. and Mrs. Smith had renamed their homestead Oakbourne, after the many oak trees on the property. They also enlarged and renovated the farmhouse into a High Victorian/Queen Anne Revival-style mansion. This style is characterized by the use of multiple materials and textures to produce elaborate and asymmetrical ornamentation. It is believed the architect of the new mansion was Thomas Roney Williamson (1852-1896) of West Chester. Among many other changes, his 1884 renovation included 18 rooms, a tall square observation deck with a peaked roof, and one of his signature architectural elements, a round mini-tower.

Today the existing original copper embellishments on the house have oxidized to a green verdigris. Above the door on the north side is a decorative copper letter "S" with smaller letters "JC" on the left and "HD" on the right. As a side note: Heloise Drexel Smith had 3 brothers - Anthony Joseph (who founded Drexel University), Joseph William, and Francis Anthony (whose daughter was the nun eventually canonized as St. Katherine Drexel (1858-1955) - the first canonized saint to have been born a United States citizen).

At the same time, a picturesque 65-foot tall water tower was built on one of the highest points of the estate in the same style as the renovated mansion. It housed a 1000-gallon twin tank water reservoir that supplied running water and fire protection for the home. The structure also provided a secondary function as a lookout from which to view the peaceful surrounding countryside. In 1995, the water tower was adopted as the official symbol for Westtown Township.

At the northern end of their property along the current Oakbourne Road, the Smiths established a 27-acre park among the trees, which included a summer house and a pond. The pond, as well as remnants of a stone wall and an entry gate, still exist there. The Smiths enjoyed raising such livestock as cows, horses, and chickens.

Mr. Smith passed away in 1893 and Mrs. Smith passed away in 1895. The Smiths had no living children. After her death Mrs. Smith willed the property to the Philadelphia Protestant Episcopal City Mission to be used as a retreat for sick and convalescing white women aged 21 and older. The mansion was named The James C. Smith Memorial Home and a trust fund was established to provide for its maintenance. The Home

usually housed 25-30 residents at any one time.

In 1896, the Smith Estate sold 96 acres to the Pennsylvania Epileptic Hospital and Colony Farm, which benefited both men and women. After advances and changes were made in the treatment of epilepsy, the Colony Farm Board changed its focus. From 1947 until 1965, it was known as Oakbourne Hospital and was a treatment center for emotionally disturbed children. This acreage has since been subdivided. Today, part of it is the location for Gaudenzia House (an addiction treatment facility), part is a portion of the Pleasant Grove neighborhood, and a third part has been returned to Oakbourne.

During the time it was used as a retreat for women, significant changes were made to the mansion. An early 20th century English Tudor-style wing was added on the south side and later a large meeting room was attached to the western end. The top of the observation deck was removed and was replaced by a flat roof. The large front porch was also removed. Inside, a small chapel was created adjacent to the center hall in 1917.

In 1971, the lack of funds forced The James C. Smith Memorial Home to close. In 1974, the Westtown Township Board of Supervisors voted to purchase the 47-acre property. The original plan was to tear down the mansion and accompanying structures, but an astute planning commissioner opposed the idea and was successful in saving the historic buildings. Portions of the 96 acres of the original estate that were sold in 1896 were either purchased by or donated to Westtown Township, thus creating the current 93-acre Oakbourne Park.

Today only Oakbourne Mansion's first floor is available to the public. Part of the second floor is used as full-time living quarters for a caretaker. The upper floors have not yet been restored. In addition to the Mansion, still existing on the property are the previously described water tower, a carriage house/garage, and the gate (tenant) house.

Bibliography:

A History of Westtown Township, Arthur E. James, 1973

PHMC Historic Resource Survey Form, Evaluator M. L. Wolf, Brandywine Conservancy, 1981

Newspaper Article, May, 1985

APPENDIX B: PARK STUDY COMMITTEE PARK EVALUATION SUMMARY

Oakbourne Park Committee Evaluation

Q1 How would you rate the image of Oakbourne Park on the following qualities?

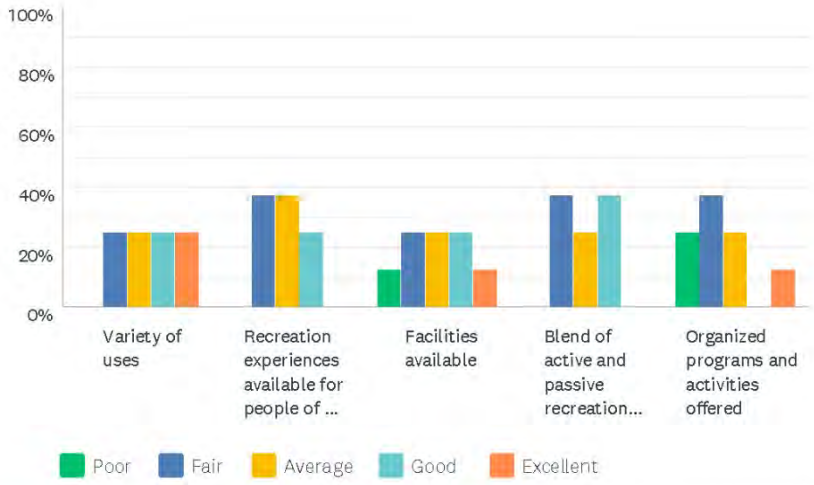
Answered: 8 Skipped: 0

	POOR	FAIR	AVERAGE	GOOD	EXCELLENT	TOTAL
Safety	0.00% 0	12.50% 1	37.50% 3	37.50% 3	12.50% 1	8
Cleanliness	12.50% 1	0.00% 0	12.50% 1	62.50% 5	12.50% 1	8
Comfortable place to be	0.00% 0	0.00% 0	37.50% 3	37.50% 3	25.00% 2	8
Attractiveness	0.00% 0	12.50% 1	37.50% 3	12.50% 1	37.50% 3	8

#	PLEASE COMMENT:	DATE
1	I've been using Oakbourne Park for decades and have always felt very comfortable and safe there. The park is clean except for the Porta potties; I very seldom see any litter. And, of course, the park is very attractive and unique!	7/10/2020 2:57 PM
2	Grounds (pavilion, open space, playground,...)and trails can be cleaned up some to make more appealing	7/10/2020 11:50 AM
3	Gorgeous park. Remember that this is an arboretum. Could use some additional ADA features.	7/9/2020 10:22 PM
4	Attractive but to a certain degree and certain audience. It needs a modern touch.	7/8/2020 12:38 AM
5	The mansion and water tower are just beautiful and they offer the park a very unique center piece. The problem is that they are not very visible from the road.	7/6/2020 12:24 PM
6	The disjointedness of the park is probably the aspect that makes it the least attractive.	7/6/2020 7:50 AM

Q2 How would you rate Oakbourne Park on its uses and activities?

Answered: 8 Skipped: 0



	POOR	FAIR	AVERAGE	GOOD	EXCELLENT	TOTAL
Variety of uses	0.00% 0	25.00% 2	25.00% 2	25.00% 2	25.00% 2	8
Recreation experiences available for people of all ages	0.00% 0	37.50% 3	37.50% 3	25.00% 2	0.00% 0	8
Facilities available	12.50% 1	25.00% 2	25.00% 2	25.00% 2	12.50% 1	8
Blend of active and passive recreation uses	0.00% 0	37.50% 3	25.00% 2	37.50% 3	0.00% 0	8
Organized programs and activities offered	25.00% 2	37.50% 3	25.00% 2	0.00% 0	12.50% 1	8

#	PLEASE COMMENT:	DATE
1	I am not a fan of the cookiecutter qualities of the "ideal" park presented at our initial session. Our park is unique and it should not be turned into a so-called "ideal" park like East Goshen which I do not find attractive for me personally.	7/10/2020 2:57 PM
2	Playground, parking, seat benches needs more upgrades, permanent bathrooms would be of value, Additional signage	7/10/2020 11:50 AM
3	More activities for adults and families, including educational activities, would be welcome.	7/9/2020 10:22 PM
4	Would love to see more recurring events/activities throughout warmer months	7/8/2020 12:38 AM
5	The park is under utilized. Today when I visited there were only 2 other cars in the parking lot in the midst of the covid crisis. At either East Goshen Park or the Ockehocking Preserve there would more than a dozen cars at various times during the day.	7/6/2020 12:24 PM
6	The park suffers from a dearth of available recreation experiences.	7/6/2020 7:50 AM

Q3 How would you rate the access to and within Oakbourne Park?

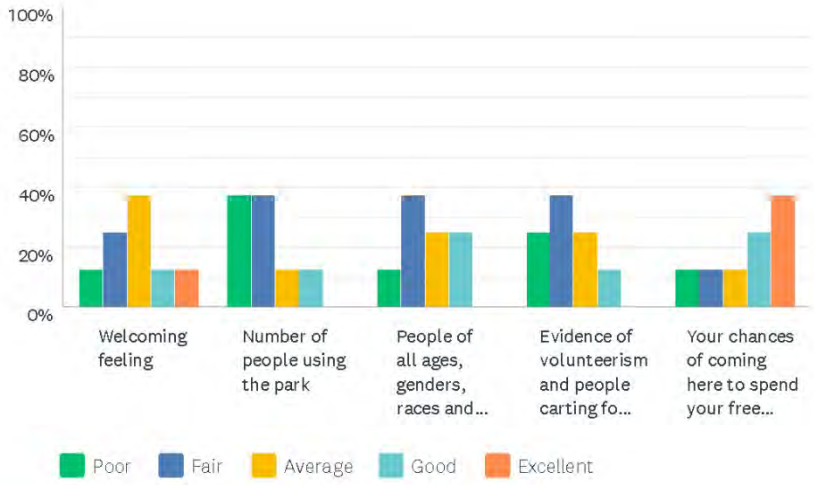
Answered: 8 Skipped: 0

	POOR	FAIR	AVERAGE	GOOD	EXCELLENT	TOTAL
Ease in walking here	37.50% 3	25.00% 2	37.50% 3	0.00% 0	0.00% 0	8
Ease in bicycling here	37.50% 3	12.50% 1	37.50% 3	12.50% 1	0.00% 0	8
Safe motorized access	0.00% 0	12.50% 1	50.00% 4	25.00% 2	12.50% 1	8
Getting around in the park on connected pathways	12.50% 1	12.50% 1	62.50% 5	12.50% 1	0.00% 0	8
Accessibility for people with physical challenges	25.00% 2	50.00% 4	25.00% 2	0.00% 0	0.00% 0	8

#	PLEASE COMMENT:	DATE
1	This is a suburban park and there are no sidewalks to provide easy walking access to the park. For the residents who live adjacent to or relatively close to the park, there are numerous access points, some requiring crossing somewhat busy roads.	7/10/2020 2:57 PM
2	Concord & Pleasant Grove roads are not the safest for entrance, and steep slopes make ADA challenging, need improved signage	7/10/2020 11:50 AM
3	I didn't note any ADA features	7/9/2020 10:22 PM
4	The trails are not well marked and there is only limited access to the park where the Oakbourne Park walking trail intersects local streets.	7/6/2020 12:24 PM
5	Even driving to the park is a bit dangerous, let alone walking or biking.	7/6/2020 7:50 AM

Q4 How would you rate Oakbourne Park on its sociability?

Answered: 8 Skipped: 0



	POOR	FAIR	AVERAGE	GOOD	EXCELLENT	TOTAL
Welcoming feeling	12.50% 1	25.00% 2	37.50% 3	12.50% 1	12.50% 1	8
Number of people using the park	37.50% 3	37.50% 3	12.50% 1	12.50% 1	0.00% 0	8
People of all ages, genders, races and cultures using the park	12.50% 1	37.50% 3	25.00% 2	25.00% 2	0.00% 0	8
Evidence of volunteerism and people carting for the park	25.00% 2	37.50% 3	25.00% 2	12.50% 1	0.00% 0	8
Your chances of coming here to spend your free time	12.50% 1	12.50% 1	12.50% 1	25.00% 2	37.50% 3	8

#	PLEASE COMMENT:	DATE
1	I visit this park on an almost daily basis. The number of people using the park can vary greatly from being crowded or relatively crowded to very few people. To me, the beauty of the park is sublime and welcoming, a feeling I personally do not get at other area parks. The Friends of Oakbourne is a non-profit volunteer group that has put in thousands of volunteer hours over the years. Also, boy and girl scouts as well as school groups have volunteered care at the park.	7/10/2020 2:57 PM
2	Would like to see more township residents utilizing park, volunteers for Friends of Oakbourne & Park Committee improving and getting more involved, increasing events will get more engaged and more future visits	7/10/2020 11:50 AM
3	I live within walking distance so obviously Continue to use the park a lot with my daughter and son.	7/8/2020 12:38 AM
4	Now that I have discovered the Oakbourne Park Walking Trail on the other side of S Concord I will use the park more often.	7/6/2020 12:24 PM
5	There are very few people who are at the park on any given day.	7/6/2020 7:50 AM
6	There are very few signs, but of the ones there - especially by the mansion- most of them are not welcoming, but forbidding.	7/3/2020 8:45 AM

Q5 What is the one change we can make that you think will have the most impact?

Answered: 8 Skipped: 0

#	RESPONSES	DATE
1	Improve and maintain the park's trails; make it easier and safer to access the park by walking and make it safer to cross S. Concord Road so that park patrons can easily and safely access the park and trails on both sides of S. Concord Road. In the park on the east side of S. Concord, add a new portion to the existing trail that will allow users to make a loop on that side of the park. This would involve construction of a north/south oriented trail that parallels S. Concord Road.	7/10/2020 2:57 PM
2	Topic - improve park use by township residents: Park & trail signage to make more user friendly along with more township events to provide more awareness of what park has to offer	7/10/2020 11:50 AM
3	Have the BOS appoint a Parks and Recreation department to manage and maintain Westtown's parks and events.	7/9/2020 10:22 PM
4	Tough question with this park as it needs, in my opinion, a great deal to be a great park. I would say improved facilities/access	7/8/2020 12:38 AM
5	Clean up the walking paths and create better signage for those paths.	7/6/2020 4:25 PM
6	The park needs better signage of all types & varieties to delineate different areas/uses of the park, to identify different varieties of trees & to mark trails.	7/6/2020 12:24 PM
7	Upgrading the playground, as a new, unique playground would draw a lot of young families.	7/6/2020 7:50 AM
8	Cleanliness and maintenance would be a start. The paths in the woods were not cleared of debris and trash cans were absent so trash was strewn around the grounds.	7/3/2020 8:45 AM

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APPENDIX C: COMMUNITY INPUT SURVEY

October 2020 – January 2021

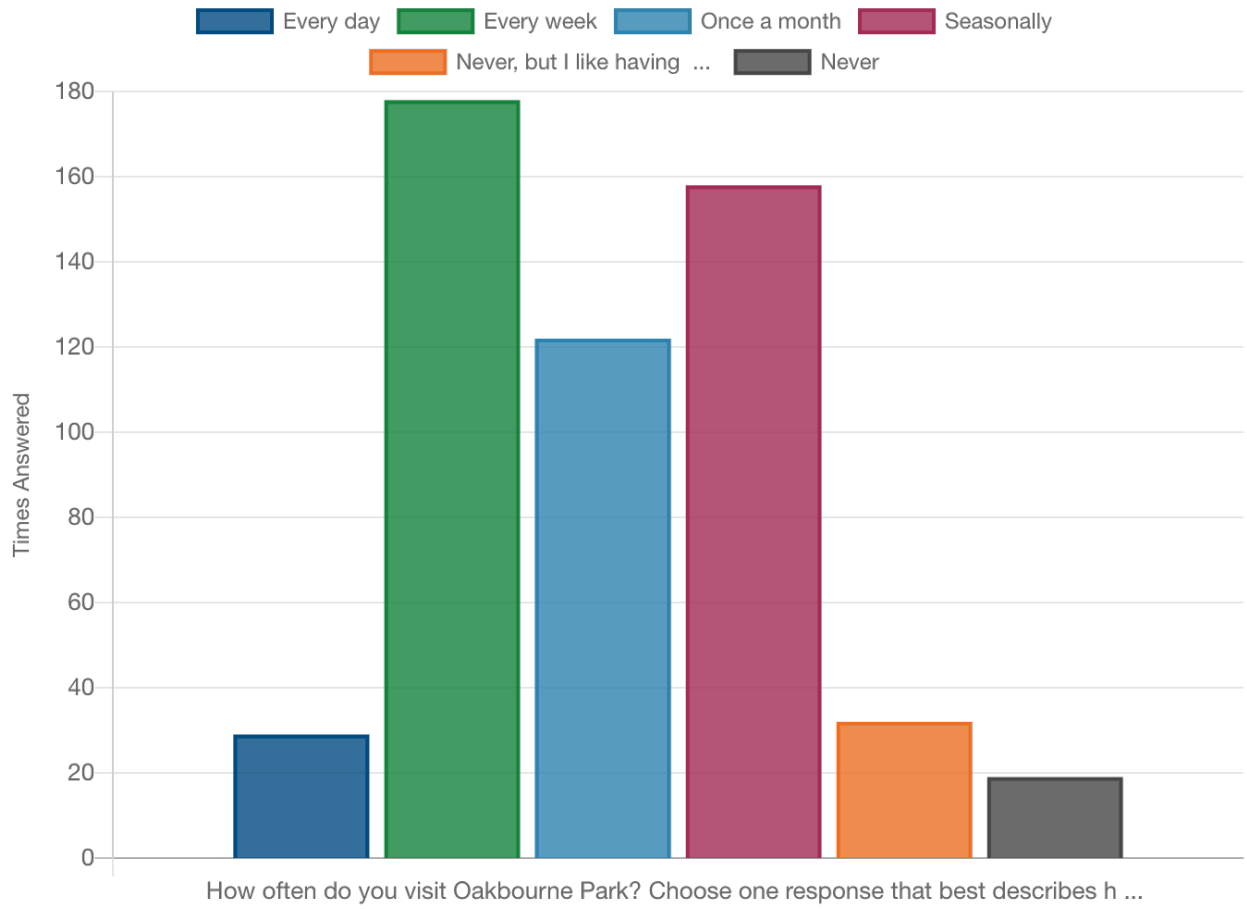
Detailed Responses to the Questions

The following charts present the answers to each question in the survey.

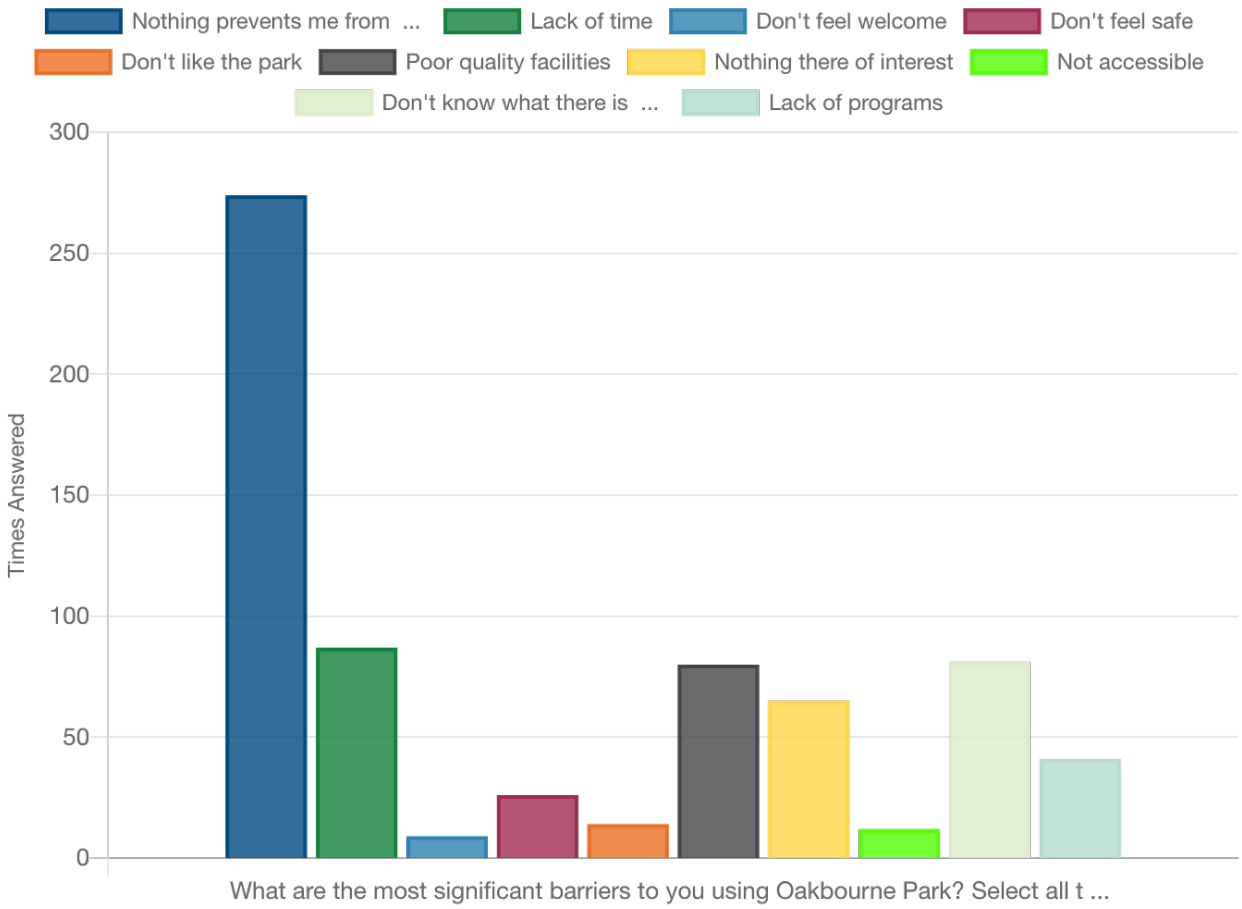
Comments

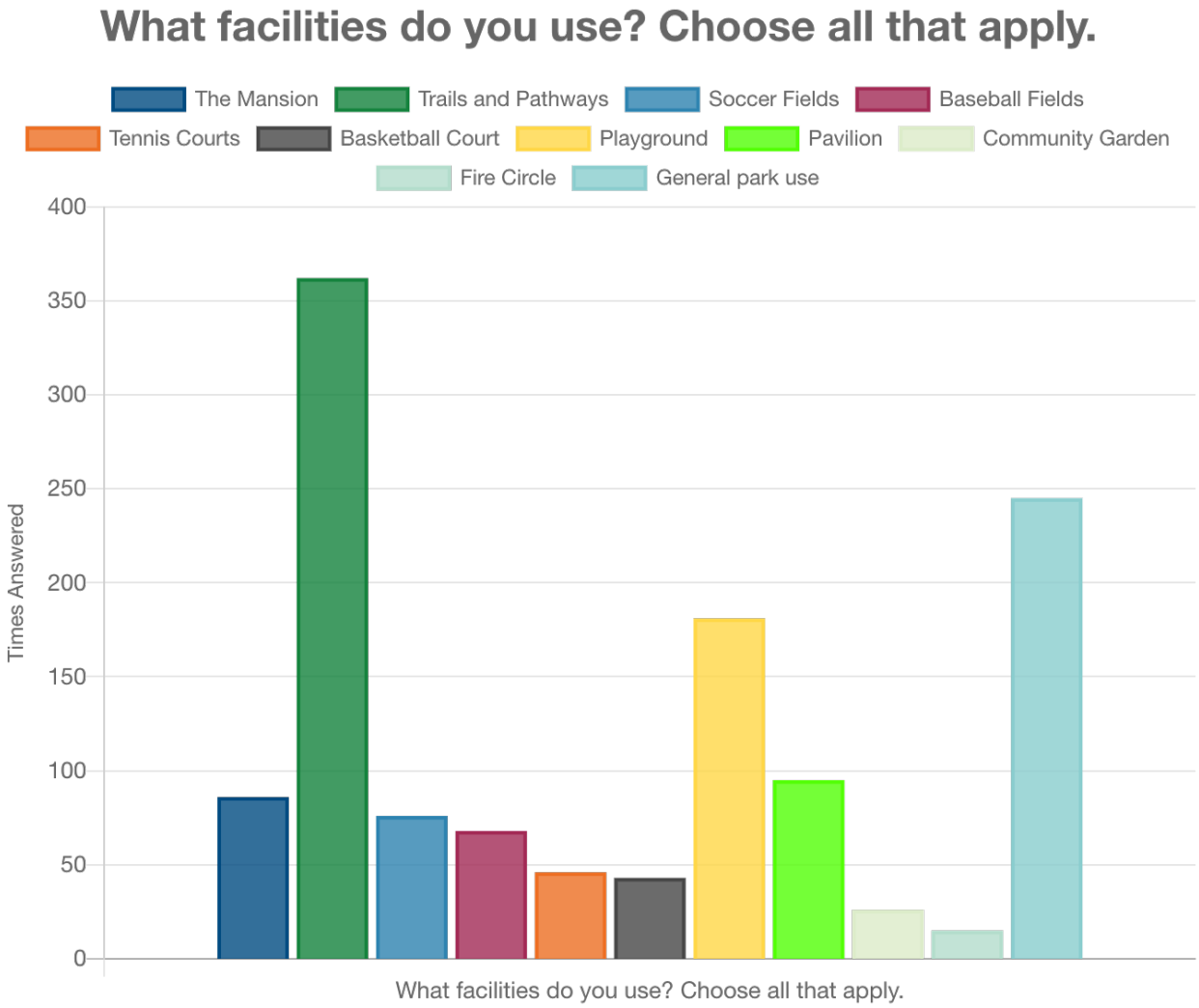
Respondents took the time to provide 303 comments. Most of these were about the installation of permanent restrooms. The Word Cloud before the comments illustrates the words most used in the comments.

How often do you visit Oakbourne Park? Choose one response that best describes how frequently you go there.

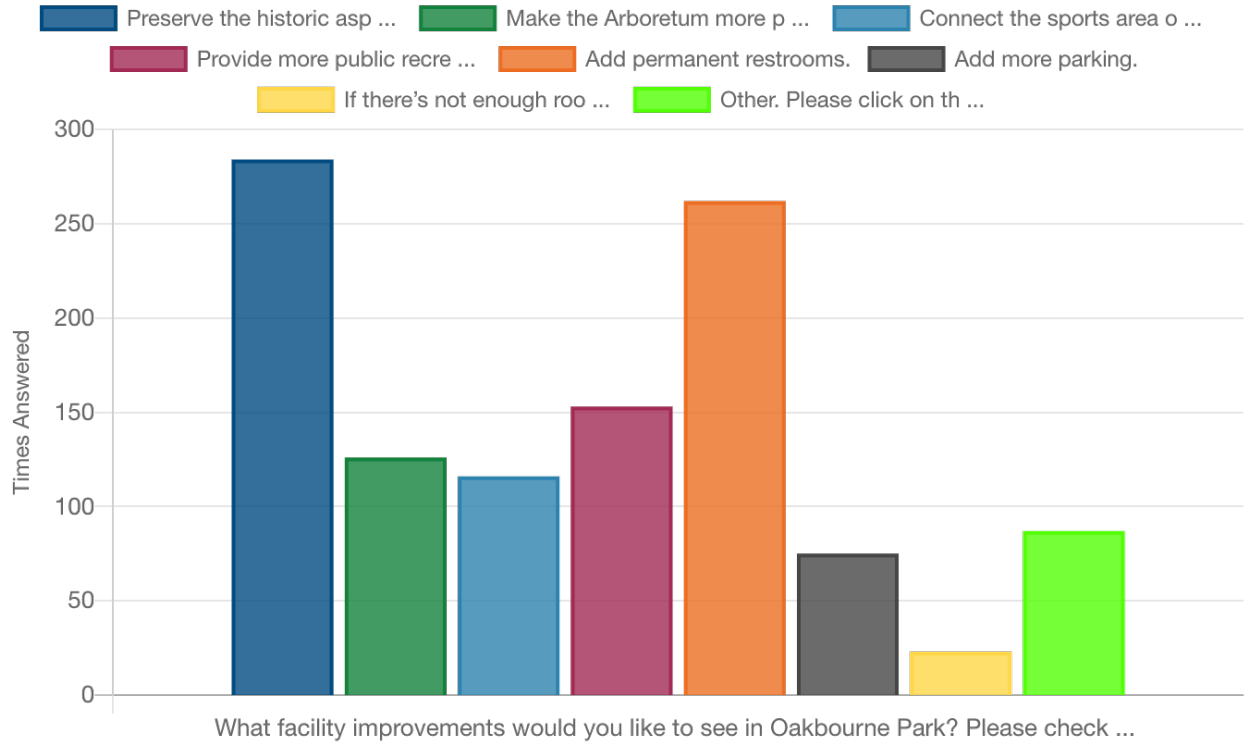


What are the most significant barriers to you using Oakbourne Park? Select all that apply.

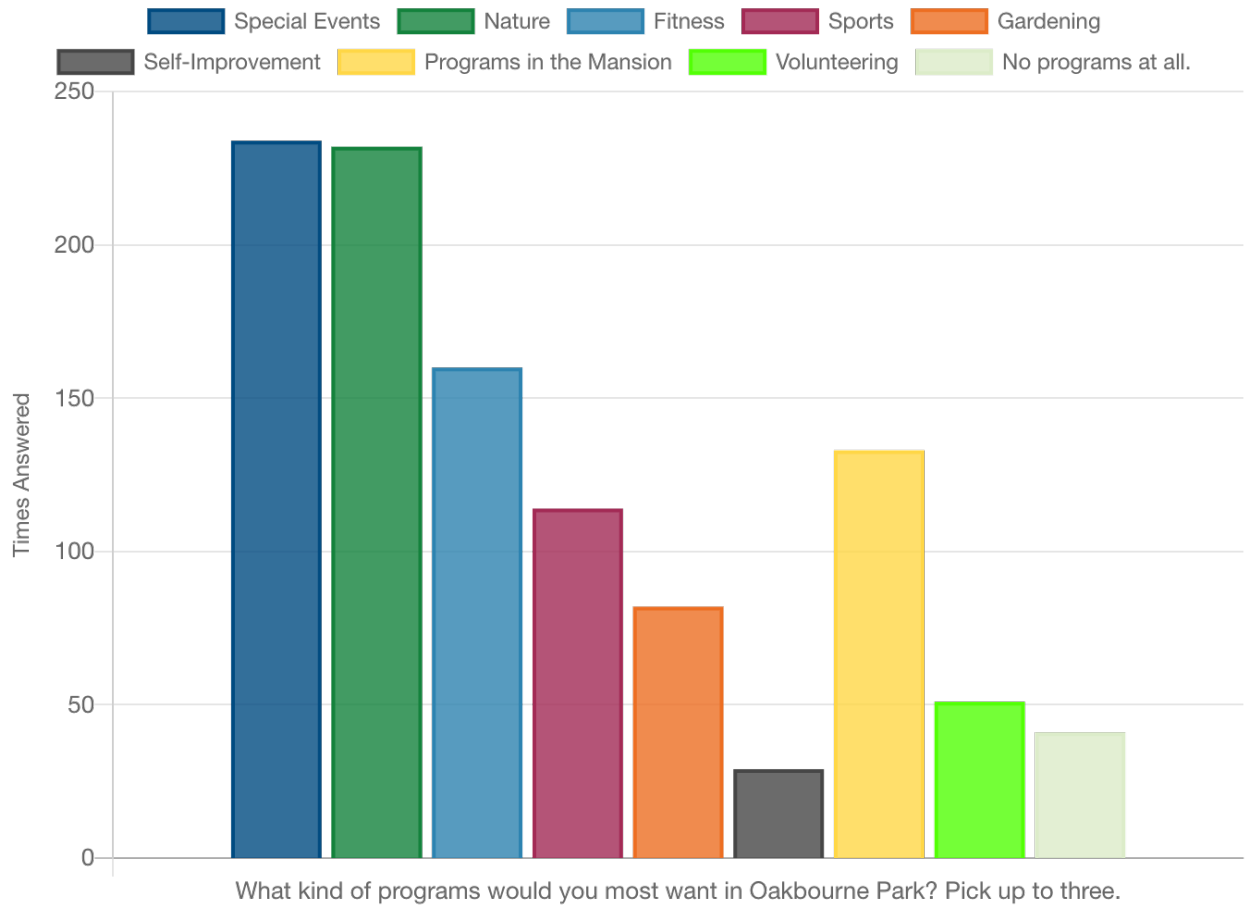



What facilities do you use? Choose all that apply.
The Mansion
Trails and Pathways
Soccer Fields
Baseball Fields
Tennis Courts
Basketball Court
Playground
Pavilion
Community Garden
Fire Circle
General park use
400
350
300
250
200
150
100
50
0
Times Answered
What facilities do you use? Choose all that apply.

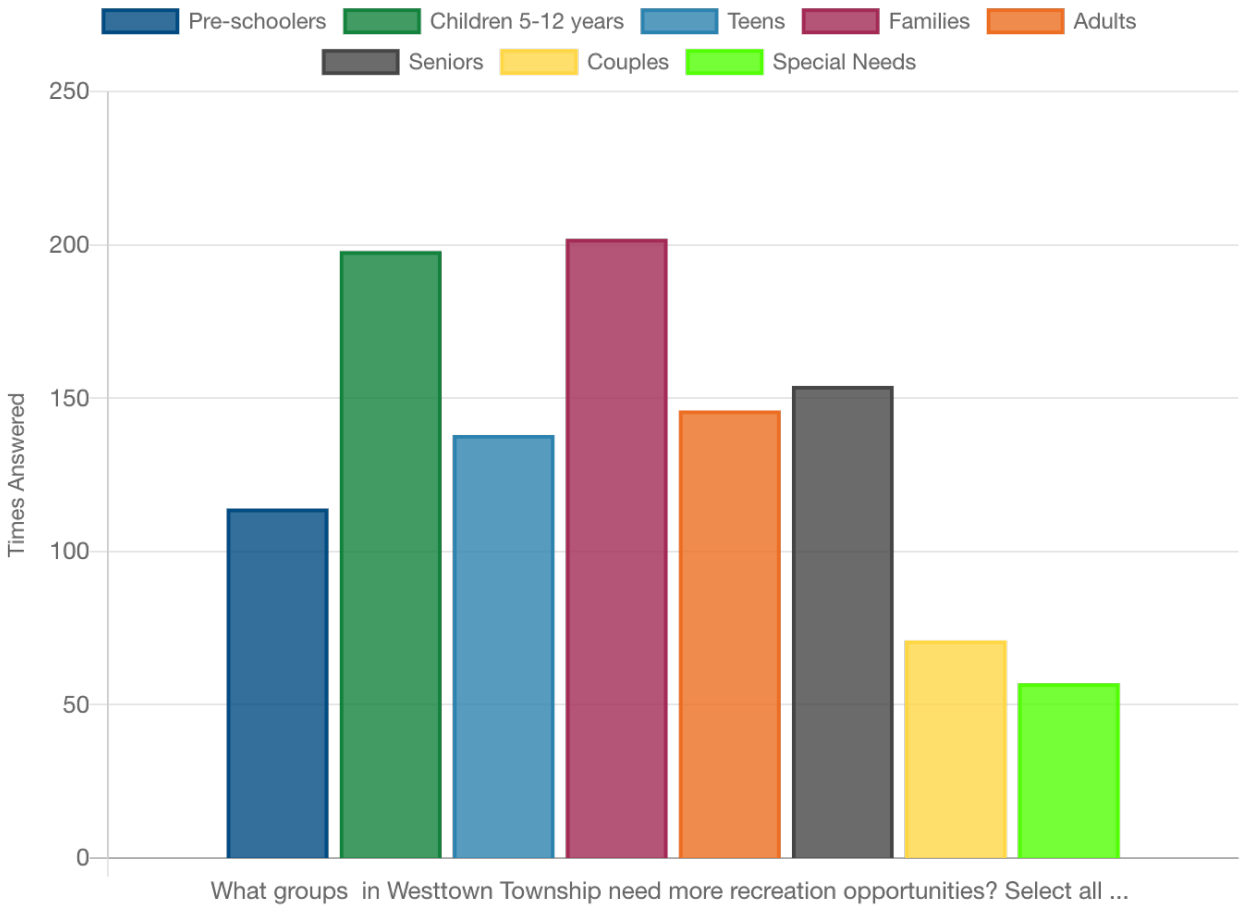
What facility improvements would you like to see in Oakbourne Park? Please check the improvements you would like to see made. If you'd like other improvements, please click on the white bubble in the blue bar above to type in your ideas.



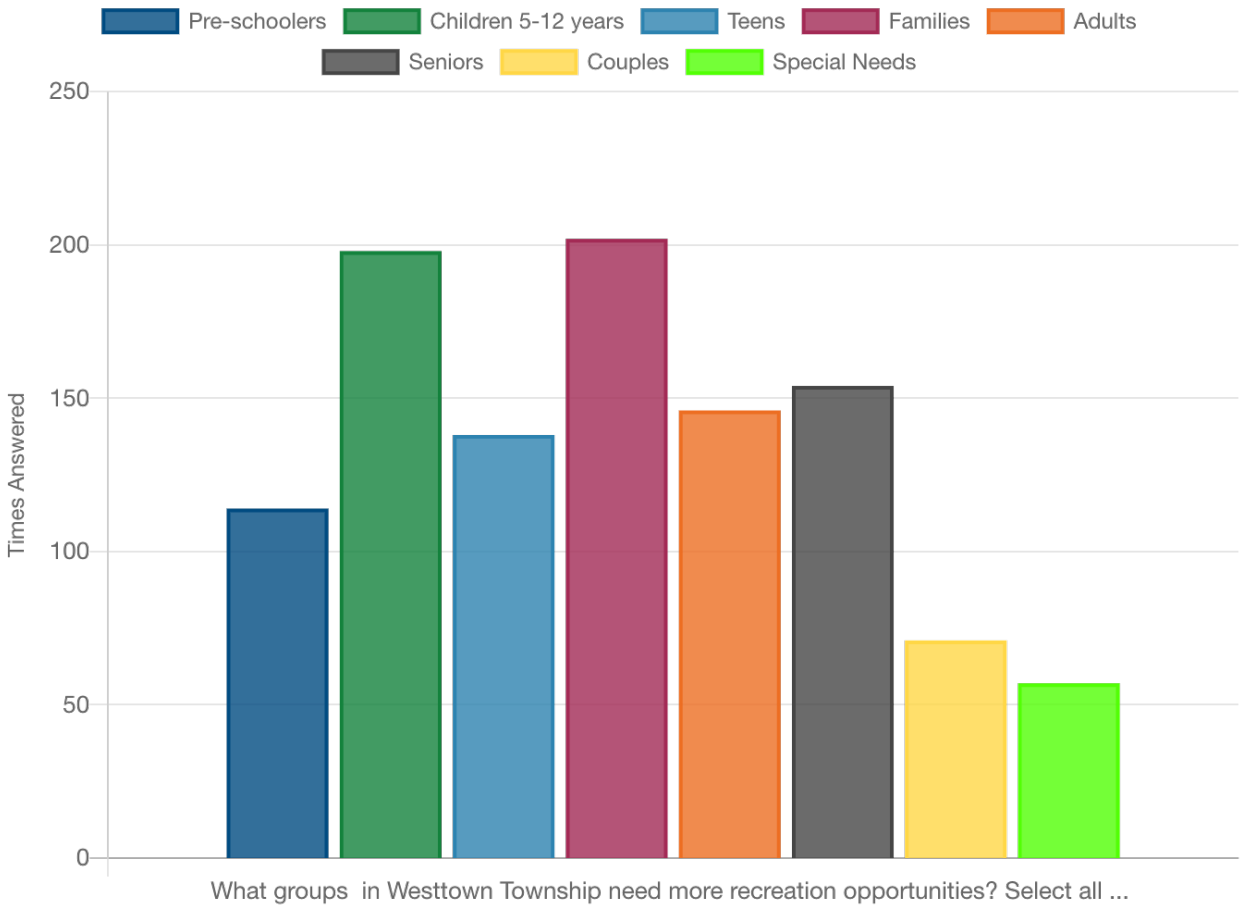
What kind of programs would you most want in Oakbourne Park? Pick up to three.

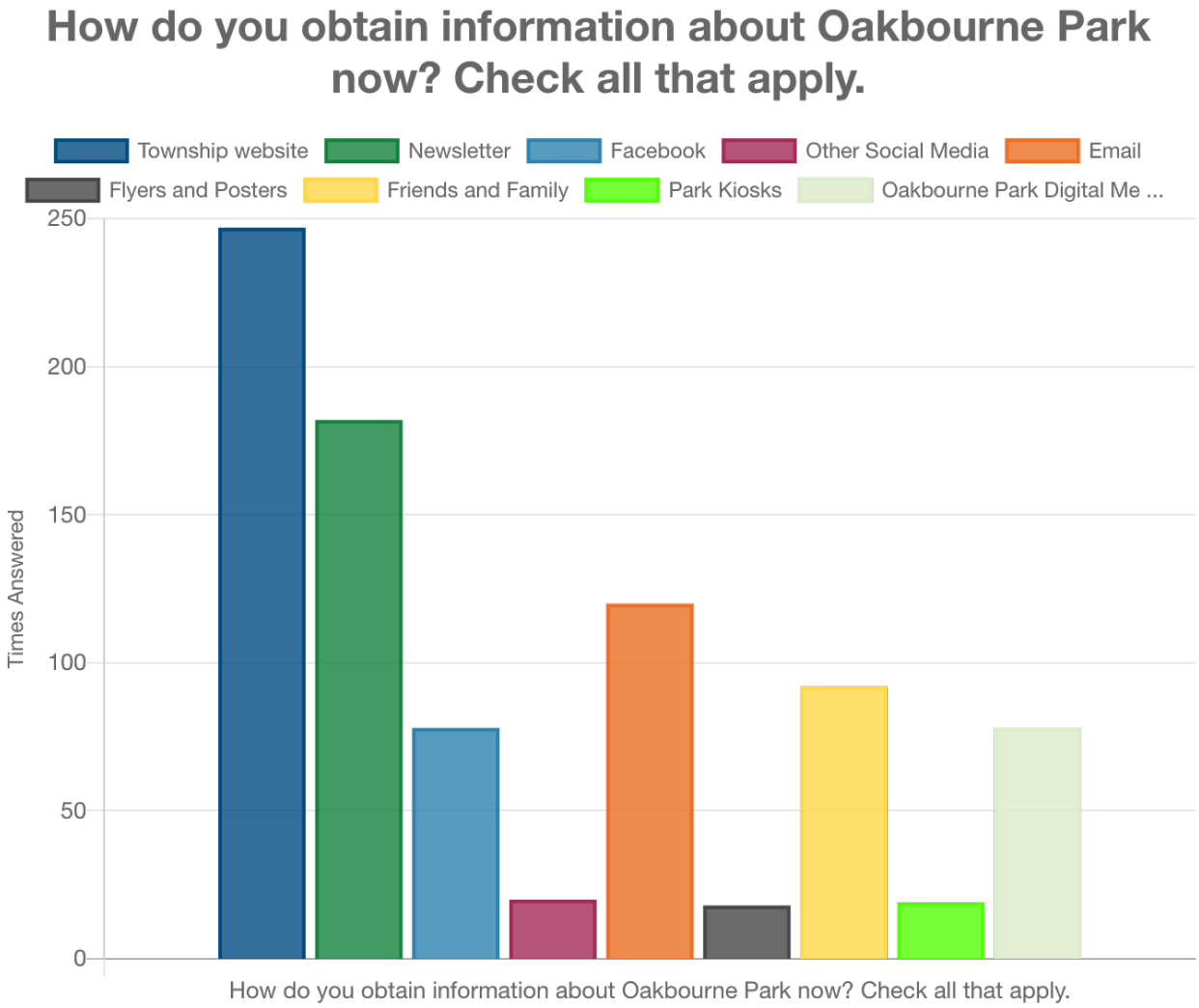


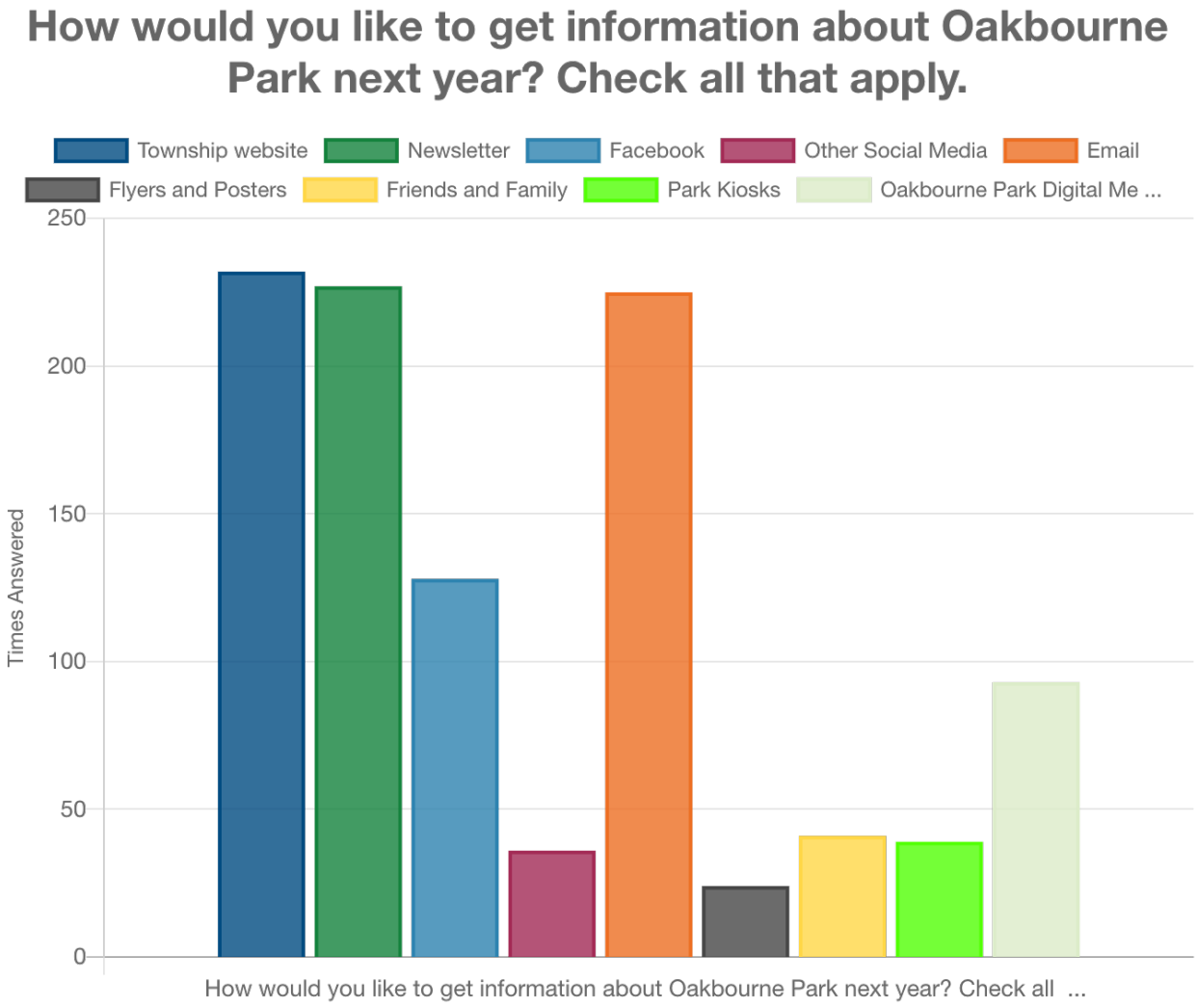
What groups in Westtown Township need more recreation opportunities? Select all that apply.



What groups in Westtown Township need more recreation opportunities? Select all that apply.




How do you obtain information about Oakbourne Park now? Check all that apply.
Township website
Newsletter
Facebook
Other Social Media
Email
Flyers and Posters
Friends and Family
Park Kiosks
Oakbourne Park Digital Me ...
250
200
150
100
50
0
Times Answered
How do you obtain information about Oakbourne Park now? Check all that apply.


How would you like to get information about Oakbourne Park next year? Check all that apply.
Township website
Newsletter
Facebook
Other Social Media
Email
Flyers and Posters
Friends and Family
Park Kiosks
Oakbourne Park Digital Me ...
250
200
150
100
50
0
Times Answered
How would you like to get information about Oakbourne Park next year? Check all ...


Is there anything missing at Oakbourne Park that you would like to have?
park benches
Better play ground
leash dog area
Volley ball court
Disc golf course
sidewalk
Splash play area
Bike paths
signage
pedestrians
trash receptacles
park map
Permanent restrooms
trash cans
Bathrooms
Dog park area
skate park
use
playground
benches
son
loop
kids
seniors w
perimeter
trails
pet waste
areas
scooter
Walking
public use
places
Dog park
trail
track
east Goshen
area
Restrooms
Zipline
People
crosswalk
Background
fountain
Better playground
street
performances
Hard surface path
Access points
Outdoor concerts
older kids
fitness stations
East Goshen Park
visitors
mansion
hiking trails
Nice walking path
Bathroom open
good tennis courts
Pickleball
better bathrooms
prominent spot
Clean bathrooms
pavilions

Comments

Inform the public about the history of the park
Having restroom facilities would definitely improve the use and allow people to spend more time at the park. Also the playground has a few sharp surfaces. My son needed stitches last year after visiting the playground and hitting his leg on a ladder.
Develop the pond area. Make a mite established path so we can push a stroller or fish. Make a more established path around mansion. It is difficult to navigate with stroller and kids in tow. Keep the kids programs in the summer! Water pad for kids to play in like sprinklers coming out of ground. Monthly byob dinner club at mansion or offering some type of summer nights picnic where you can decorate you table. Food truck events
Improve trails by adding signage, benches and wood chips to make the trails more enjoyable. Improve signage about the key areas park and rest room facilities.
The field set up with no playground near it seems disconnected. Other area parks seem to combine some of these aspects and it encourages spending more time there.
Better/another access fromPleasant Grove.
Provide a flashing light and better signage for paths on other side of Concord RD. Make the pond accessible. Have a path that is paved to allow easier access, Make REAL signage for the paths and a map along the route.
Updated playground equipment for 2-12 year olds NO MULCH Fire pole Rock climbing wall Zip line Sand pit, digging area Plenty of benches for parents to sit Easy close access to water fountains and bathrooms Splash pad Shaded areas
- Water fountains - Safer access to the park from Pleasant Grove Rd. for pedestrians and bicyclists - Consider a fitness/circuit trail - Upgrade picnic table area - Upgrade/expand basketball court
- Water fountains - Safer access to the park from Pleasant Grove Rd. for pedestrians and bicyclists - Consider a fitness/circuit trail - Upgrade picnic table area - Upgrade/expand basketball court
Make more attractions for children
We would love a playground for all ages of the community to come together. Family swings, more swings. Playgrounds for toddlers and up as they grow. Love the community garden and will look at getting involved there. Splash playgrounds are a welcome option in the summer months. Climbing domes or climbing walls for the older kids. Just ideas. We love being able to walk through the woods from our neighborhood to get to the park.
I'd like to see a bigger playground area with fun, bigger equipment for slightly older kids (my four year old still likes the playground but there isn't much for my seven year old). I'd also love a nicer pavilion (maybe multiple pavilions) with nicer picnic tables. They could be rented out for birthday parties in addition to be used generally by park goers. We used to live in Montgomery county and there will several parks with these accommodations, but none that I know of in west Chester.
I think that the park would benefit from an overhaul of all existing "attractions". For example- fix up the athletic fields, maybe turf soccer fields, better baseball fields, pickle ball, better basketball courts. Add restroom. Add a small playground on the desiderata if the athletic fields for younger siblings that are attending athletic events. And I would love to see the trails improved- better signage, more connections, some paved for families with strollers, etc.

A paved or gravel loop for walking, running etc.
Dog park Or at least enforce the leash law
If it ain't broke, don't fix it
The trails are good but need improvement. We like to walk the dog but some areas are either very muddy, overgrown, or hard to trek. I would also like some signs of what areas are part of the park. Some areas seem like private property but are actually part of the park.
improving current facilities and adding new recreational equipment for children
Add signs to the trails (length, trail name and map), add new trails, expand playground
Historical aspects to explain the mansion's past
Update the playground and pavilion. Improve signs and lighting.
Improve your he trails, distance markers, fix washout/muddy areas, connect to Cope Tract Path safely
Safely connect to Cope Tract, create a huge destination playground area like Manderach Park in MontCo.
Would LOVE a visible walking trail like East Goshen Park. I do not feel safe walking in the woods at Oakbourne Park.
Enhance the pond and the stream to make a natural play area for middle schoolers and young teens. Add a dirt bike path for teens with little bridges and small ramps.
Fix up and add small signs to the neighborhood access trails that connect the park to the surrounding neighborhoods. There are several access easements that have been overtaken by property owners not wanting the public utilizing these access points due to the proximity to their properties. Restore gate house and add historical markers describing the original estate functions. Restore stone wall and entry piers along Oakbourne Road.
Provide permanent restrooms at sports fields, restore Gate House, stone walls and entry piers along Oakbourne Road, upgrade trail signs to direct people to trail on the other side of the park (down toward the stream) and access signage at the remote access points in the neighboring areas. Fix up post and rail fencing around the park and add additional around the basketball court. Could also have a large fenced in dog park.
The only things that need improvement relative to the use they receive are (primarily) the basketball court and the tennis court. Bathrooms near the sport sections would be a nice addition
Full bathroom at the sports fields. Re pave the basketball court and tennis courts although the tennis courts could probably be better used as the site of the new bathrooms or parking
It would be wonderful to add lights to the tennis courts. There are no public tennis courts with lights in West Chester.
Lights at the tennis courts would be wondering. It is something that is not only missing at Oakbourne Park, but in West Chester in general!
More parking, more programs- fall movie nights, summer programming for kids, concerts,
Model rocket club. Yoga in the park
I think more people would garden if the Community Garden was bigger.
Replace stairs to baseball and soccer fields or regrade. Repairs to mansion. Bathrooms at both upper and lower levels. Real playground equipment ala east or west goshen. Paved parking for athletic fields.
Perhaps have an actual carnival come to the park to draw families. There has been a focus on small children programming, who Co is great, but facilities for older kids are poor. Tennis courts should be open to public, baseball and soccer fields should be more handicapped accessible, and there should be bathrooms. Also, it would be good to have concerts in the park, provide a venue for live music. And it has to be better advertised, no one reads those mailer things anymore.
A fenced off-leash dog area would be FANTASTIC!
I know this may seem like a great deal, but working together and hopefully including as many "new" neighbors as we can, this can be goal.
More maintenance on tennis courts and basketball courts
I would like to see something patriotic and historical done on the hill behind the basketball court (on E. Pleasant Grove Road.) Relocate the "Taylor" Monuments" in a nice arc near the tree line and facing the street with nice landscaping and a large flagpole w/ flag. A nice bronze plaque detailing the Taylor family importance to Westtown could be added. Plenty of parking is available for visitors and for celebratory events.

Our park is not able to sustain lots of traffic - right now there are sports programs that are bringing many many vehicles into the park and drivers are not following signage to drive certain directions and are driving way too fast on narrow park roads. Flag football is one of the sports causing these problems. This should be a natural wooded and trailed park - not a sports field park. Don't pave paradise and put up parking lots please!!

I would love to work on engaging a program that would get school age kids involved as the future " keepers" of the park.
I've also seen "senior" playgrounds, with different stations to help them exercise.

A bigger, more extensive playground area or even multiple playground areas would be wonderful. Repairs to tennis courts.... they're a mess. Maybe closer to fields and tennis courts. Tends to be too secluded where the current play area exists..... don't always feel safe.

Improve the paths.. add exercise tips along the paths..benches

I like the relatively modest development at Oakbourne
I would like to see the Community Yard Sale return and also movie nights

Would like the paths to be more easily identifiable. Some are obvious, others not so much for newer visitors. Also, when I was single I never felt as safe going down the paved path to get to the wooded area. It's tucked back and feels "creepier" than other parks. Signage re: patrols? Call out safety features of park? Cameras? Call box?

Disney themed events for families? Offer space for groups with special needs? Are there wheelchair friendly paths in the woods?

Dog adoption events? Dog therapy events for kids and adults w special needs?

Natural playground for kids to explore and use imagination

Walking to the field across the road needs a cross walk and a marked trail around the corn field.

A dog park area would be nice
It would be nice if the trails were extended and connected. On some spots they can get muddy
Tennis courts repaired/expanded.

Pave the upper stone parking lot and redefine the access drive to /from it.

Redefine the pond area and maintain it as a fishing destination for youth. Flatten the steep banks and dredge the muck and cattails. Perfect place for nature programs and exploration in the areas surrounding.

Rebuild the tennis and basketball courts and enhance the parking of the athletics area. I like the separation between the two areas, main park/sports area.

Make the playground users feel more comfortable during the day given the close proximity of the pavilion and its users.

Love the park! The only area we avoid are the walkways around the pond because it gets very muddy there.
We recently discovered the trails on the east side of Concord Rd., so maybe some signage for cars to slow down- trail crossing signage or roadway markings to indicate trail crossing on Concord Road near the continuation of the park by the Stonewall Farm driveway and where the other end of the trail crosses back(by the soccer field).

Change the cornfield to public access parkland.

Park needs gathering areas with seating, needs much improvement in signage, trails need improvement, access to pond and stream should improve.

General lower field

Improve the trails, especially some of the trails in the woods. Portions of these trails are significantly rutted and contain large tree roots. Connect trails in Cope Tract to form a loop and also to connect with trails in the main park (west side of Concord Road).

Improve the park by improving and maintaining what we already have. Do not overdevelop the park and destroy the beauty and quiet that permeates the existing park.

No more lights. Light pollution in the Township is getting worse. The sign and post light do not help.

I would love it if there was more use of the mansion to the public like the historic programs you've suggested. It would be so cool if there was a monthly tour or if you could schedule a personal one.

Get permanent bathrooms and maybe set up with signage a 5k xc loop.

It's a catch-22 because Oakbourne park has that "hidden gem" feel to it but I feel like there should be way more West Chester/Westtown events happening on the mansion grounds. I'm assuming the Township makes money on these events to be used to improve the park so we really need to promote better. Personally, I'd be interested in helping market/promote use of the mansion and have experience doing that if you're looking for someone. Tom Wittig tom.wittig.jr@gmail.com

Oakbourne is special and my family would like to see it stay that way. People who want big a playground, paved parking lots and trails, and bathrooms can find that at other nearby parks. Oakbourne is one of the few parks with good, basic amenities in a rural, natural setting. Don't ruin that. Upgrades are warranted on the athletic side, but leave the mansion area alone.

upgrade the walking trails

Improve the pond area to be more accessible....fishing friendly for children

The water tower is beautiful. Find a way to safely open it to the public

More picnic tables would be nice.

Park with plenty of parking, accessibility range of events and options,

Creating a unique wY for families to interacf with nauture would be neat! Like more plaques explaining what different types of plants, etc there are....plaques about the history of the mansion.

Fire circle activities for families, music events to bring people in etc

Better bathrooms, updated playground, less sports/big crowds... cars go very fast and gets congested.

Big groups from Gaudenzia smoking at playground

Horseshoes, frisbee golf, yoga classes, mansion tours, water tower tours
Concerts, children's shows. Halloween costume party for kids.Gardening classes. Coffee with the supervisors meeting.

We love Oakbourne as it is but if there's anyway to make more hiking trails we'd love that!

Enlarge the playground, handicap accessible as well and partially shaded

We live fairly close to the park. We can walk on a trail and get there in 15 mins, or we can take a 5 minute drive. The #1 reason we don't stay very long is because there are no bathrooms (or we don't know where they are). With 2 little kids (2 and 6) the bathroom is a necessity.

The playground is generally only geared toward elementary aged kids. Much of the play structure is difficult/unsafe for toddler or preschool aged children's use.

Restore it to the original landscaper's idea. Add permanent restrooms. Improve and mark the existing trails.

More playground equipment, zipline like east Goshen, Benches

No programs are needed. With organized sports (soccer, little league, etc), after school activities, scouting, etc., there is plenty for the children. If families, adults, seniors or others want to use the park, there is nothing stopping them.

Updated playground- isn't much to do there for kids. It's so convenient, but we typically go out of the township to the nicer playgrounds.

Go to West Goshen Park or East Goshen Park and copy them

A safe and improved playground (similar to east Goshen park), paved trails, and more community events

Adult oriented programs in the mansion would be great, such as lectures, food and wine events, book clubs, etc.

Add an amphitheater for concerts

Amphitheater
Fitness course
Trail signs with markers.
Offer more recreational sports and improve on site courts

A playground that can include more age range, zip line, pickle ball, things like East Goshen park

Disc golf and more sports fields, skate park.

Pickleball

Place for children of all ages can enjoy with their family

Major overhaul of the playground. I have to travel across town to East Goshen park or over to Thornbury park to spend a fulfilling afternoon with my kids. Check out their programs too!

Would love weekly live music in the summer, use for more holiday events/arts shows/beer/wine-tasting events, antique/historic events

Clear path signage, family bike path loop. The bike path doesn't need to be long. Kids in the area just need a safe place to ride.
Would like to see a kids play area that can be utilized for water/sand play that is able to alternate depending on season. Water play for spring/summer and switching over to sand for other seasons. Some unique but very targeted childrens play equipment would set it apart from other parks: https://www.richter-spielgeraete.de/en/playground-equipment/downloads/ https://www.richter-spielgeraete.de/fileadmin/content/ml/Spielgeraete/Downloads/en/Brochures/Short-brochure.pdf
I think it would be a great spot to have more community events. Obviously that was rough this year, but once Covid is over, I would love to see more family days, food truck festivals, etc.
The traffic in and out of the park is sometimes scary especially when an event is letting out and you are trying to get in. It feels that the road is only one way.
A more natural playground would be awesome. Outdoor classroom space. Nature and History lessons during the day for homeschoolers (there are lots in the area even pre-Covid)
The mansion and fountain are amazing! Make repairs / preserve theses beautiful structures! Teach about the history and if repaired, then (post pandemic) it could be rented for events to help defray cost.
IMprove the pond area. Pond needs to have solar filtering options, fountain.
Improve the restroom facility in the park.
Paving t he e stone parking lot
well kept trails for seniors. benches along trails
Dog park Walking trails
Yoga in the Park. This may not be feasible at Oakbourne, but paved bike/walking paths. It's a shame you can't walk to Oakbourne unless you access on Dogwood or Pleasant Grove because Concord is so narrow and dangerous. Also, do people even know about the hiking trail on the other side with the corn field? Better traffic flow from the back parking lot. I saw the new signs, but need more signage and arrows and maybe widen where the rocks are so two cars can get through.
Family and children's programs are great. Always enjoy the Winter Festival.
Would love to see a large park!
The trails- specificities across the street need better markings.
passive park space is important. not every space needs a pre-defined use.
Fix the upstairs of the mansion. Couple events like a monthly wine tasting, spotlight local chefs, local restaurants, etc. Local networking opportunities for business owners, entrepreneurs etc.
more biking trails paved and off road. Disc golf course. Kids fishing pond
RESURFACE THE TENNIS COURTS!!!!!!!!!!!!!!!
Make it more inviting (similar to Thornbury park or West Goshen park). We live on S Concord, but my kids prefer those parks. More family activities and events would be good too.
Amphitheater and fitness trail. Add fitness stops with equipment along the walking trail. Pave that trail. Amphitheater use for more public events.
Love movie nights. Maybe some family friendly live music.
Modest improvements to the basketball court. Maybe repave it (still leave the stone walls in place- its very cool). Possibly upgrade the backboards.Not manditory- but figured I'd make this observation.

Pickle ball.

Also install a 9 / 18 hole disc golf course around the perimeter of the park on mansion side. Our teenage son and his friends play a mock version of this where they use a hoola hoop and put it in places around the park.

Installing a 'real' course with the actual disc golf nets would move teenagers / adults around the grounds. Could be positioned in such a way there are no safety concerns. And its not an eyesore. Not too expensive. Check out Brandywine Creek state park for ideas

Better trail signage and markings. Label historical locations off of trails, e.g. location of gatehouse, pump house, etc. Lots of lost history out there.

It would be wonderful to have weekly walking groups meet at the park to use the trails, yoga classes in the arboretum for a small fee to cover the instructor. Gardening programs would be great. Recreational tennis lessons would be fantastic for my tween/teens.

Great place, basic upkeep

Fix up pond area to make it more accessible and useable. One area around the pond tend s to be soggy and muddy most of the time, so landscape to add fill dirt to raise the ground level. Possible renovate the now drained pond area that is located to the east of the existing pond. We have a wonderful and beautiful park and I would hate to see it further developed with sports fields, dog parks, disc golf course, etc.

Maybe get some local scout groups involved to plant some flowers or start a butterfly garden. Make separate walking and biking paths. Improve drainage around the pond so it's not so muddy. Add older kids playground area.

Trails with a map, tennis courts need improvement, teens use basketball court but there needs to be another section of fence so ball doesn't roll in street.

The basketball and tennis courts need an overhaul

Return of events like Halloween party, concerts, etc, add things like disc golf, spruce up things like the courts

I would love to see the tennis courts resurfaced and I'd like to see some additions to the park that maintain a more nature centered focused. Examples include disc golf and a dog park with limited accessories (just a semi-open fenced area would do)

Improved tennis courts, dog park, disc golf. I'd also love to see one HUGE trail that connects all parts of the park with well marked pedestrian crossing areas over Oakbourne Road (similar to how East Goshen and Applebrook park are connected over Paoli Pike).

Oakbourne Mansion is OK. But, I really don't get the obsession with it. The Mansion has dominated the needs of Oakbourne park since we moved ihere in 2000. The rest of the park has been neglected by the Park Commission to present because of spending on Oakbourne Mansion. There should be playgrounds, walking paths, better parking and some type of restrooms for the public. The baseball fields also need permanent restrooms.

Dangerous intersection at trail head at Oakbourne and S. Concord Roads makes walking or biking into park risky. Slow traffic there by making all way stop and add crosswalk for pedestrians.

Arrange guided tours with professionals through year — arborists, botanists, wildlife scientists, e.g. dusk owl walk, morning wildflower identification walk, history tour, story telling walk, gardening walk, evening star gazing/identification, etc.

The main circle driveway in front of the Mansion and historic water fountain should be become the main meeting areas of the park.
To help accentuate these areas, the driveway and fountain could both be lined with all-season flower beds/landscaping, outdoor benches, additional lighting, and LED bollards for safety at the driveway.

Create fenced dog park, where dogs can be off lease and people can walk or jog and get excerise at same time..these are very popular in Colorado and people are usually willing to pay for passes as a way to fund improvements

Create fenced dog park, where dogs can be off lease and people can walk or jog and get excerise at same time..these are very popular in Colorado and people are usually willing to pay for passes as a way to fund improvements

I would like to see a fenced in off leash area for dogs, possibly with walking paths for humans. I would be willing to pay/donate money to maintain this area

An off leash fenced in dog park.

Develop a well organized volunteer program so that people can assist with improvements to trails, events, garden and arboretum.

Outdoor activities for all ages. Especially children and seniors would be great.

Dont lose sight of the historical and simple nature of this park as compared to other recreational areas with more designated infrastructure.
Redo the Playground Area and make it larger. Add permanent Bathrooms. The basketball court needs to fixed and upgraded. Increase the Gardening area.
All trails should be upgraded, This includes Copes side and Mansion side. Fix current basketball courts and tennis court. Add additional basketball courts.
Dog park!
Before any decisions are made about Oakbourne Park, the township needs to take a good look at Larchbourne Park (yes, there are 3 parks in our township) and either give it the attention it needs or sell it. It is a disgrace and no one seems to care. If I lived in that lovely neighborhood, I would certainly be making some noise about its current condition. Bring the Mansion back to its "former glory". It is an incredible building and could benefit the township in so many more ways than it is.
A community center that offers township residents fitness classes, cooking classes, art classes, etc. Seasonal Farmers market, day camps for kids in the summer. Gardening classes. The mansion should be restored and rented as it is now for weddings and private events
We need a better and safe park, there is a lot of area to expand the playground.
Pickle all courts, tennis backboards and larger courts, trail improvements done professionally through the woods.
A lot of township money is spent on the Oakbourne mansion that nobody can use unless they pay. Turn the mansion and its care to private industry and let the township focus on the park surrounding the mansion. Start a planting campaign for the community at the park; perhaps planting trees in the large open spaces. The basketball court could use some love. Leave the unique stone wall!
Tai Che, yard exercises, wayside signage plan, trail map, improve south side bb, tennis, add to tennis courts and backboard, take the keys off the use of tennis courts, keep the larger area for picnicking, tables some benches chairs,
This town needs good walking trails, good sports fields (day/night, indoor/outdoor), snack bar to generate money and overall better facilities to make it a community gathering place and safe place for kids and families to use.
Usable tennis courts
Create a space for outdoor concerts example like Rose Tree Park maybe with fire pits, create a space for children for example a playground with a turf ground and a space that someone could rent out to generate income as well as hold classes for example a place like Haverford township community recreation & environmental center. That would be my wish list
Keep Oakbourne as a park. It should not be turned into a recreation center.
I use Thornbury Park it is a very nice simple place. I will try Oakbourne this week.
I don't use the park I go to Thornbury park. It is clean, simple and safe. The walking path is measured and simple to follow
More signage to learn about the gardens and trees. Additional maps for the trails and possibly some cameras for safety with
I already noted 3 moderate improvements, and would add a 4th —— bocce courts and league.
trail markings and map with distances, trash cans by the pond
Dog park
I would like more gardens like a small long wood gardens. It would be great to add a pond/lake and hold an annual fishing derby for kids supported by PA Fish & Game, they would stock it.
Mark the trails, lived here for almost 9 years and had no idea where the trails were.
more yard sale events; special seasonal events; trail marking/maps
Walking trails expanded in woods and field across oakbourne road
Paved paths and connecting sports fields with the oakbourne mansion. Also, improvement on the facilities already there like the batting cages, etc.
I love the events like the holiday party, Westtown Day, family movie nights. Maybe concerts outdoors would be fun.
Sports court improvements
Buy more park area like Crebilly farm
Connect it with trails through the township

Programs on gardening, landscaping and fitness would be beneficial.
none
The park needs to be more family and dog friendly. Better trails, mile markers, fitness areas, better playground for kids, restrooms. Connect the lower and upper parks.
Mark the trails more clearly.
More clearly marked trails would be great
Keep on Keeping on!
Everything seems disconnected at Oakbourne. The mansion should be utilized more for programs for the community. The sports areas need to be improved visually with permanent restrooms.
Love the park and everything is nice.
Dedicated Pickle Ball courts, roller hockey rink, morning or early evening yoga/pilates classes in a pavilion (when the weather is nice), dedicated mountain bike trails
I think the mansion and surrounding area should be made available for family and community events indluding weddings etc
Add a large dog park, separate areas for large and small dogs. Water and shade available, places for dog owners to sit.
Develop Self-Guided Tours of the Mansion and property around the Mansion. Stress the history and independence of the property. What was grown, how many people summered there, etc. Even forward to when it was a Senior Residence for Ladies.
I'd love the wooded trails to be overhauled. They're a little too "natural" and a muddy mess
Better/new trails. It would also be nice to have new gravel in the sports parking lot. It's a bit bumpy.
Add a loop walking path.
Walking path extended into the wooded area (assuming that it township property).
Improve the pond area and consider restoring a second pond area to the east of the existing pond. Add a walkway from the mansion front steps across the driveway and lawn circle in front of the mansion to the Clock Garden. Add more gardens around the mansion and water tower areas.
Change the nature of the playground to have more interesting and natural features, expand the playground area, more benches for parents and grandparents.
What are walking trails like? How long are they? How do they compare with Sandy Hollow. I've been to Oakbourne once or twice and the trail did not look appealing. How much money is the township spending on the mansion? Is it breaking even with rental fees? I would rather the money be used for open space funding. Like Crebilly!
Send a digital map of the park and it's facilities, especially walking/fitness trails.
Added or updated playground or sensory play for young kids (toddler age). Paved pathways throughout the entire park for better accessibility with stroller. Add drive in movies during pandemic to keep distance
Added or updated playground or sensory play for young kids (toddler age). Paved pathways throughout the entire park for better accessibility with stroller. Add drive in movies during pandemic to keep distance. Add cross walk across concord road for those walking over to the park. add flashing lights (cars fly down the road and it's unsafe to cross) similar to what East Goshen Park has on Paoli pike.
Would like to see it be a community center, offering programs for everyone. Fitness classes, tennis lessons etc. Safety stations along trails, outdoor lighting. A dog park area would be wonderful for meeting folks. Walking programs would be nice. A grand idea is having a community aquatic center, a lot of money up front but memberships as Westtown residents would make up for it over time. Food events at the park with Friday night food trucks, or more outdoor concerts.
Facility improvements: other—playground improvement. Nothing major, but maybe some more structures for climbing.
Love the trails..my 3 year old can spend an hour running around in them throughout the whole park! Maybe improve the playground a bit...add a tunnel slide, those are always big hits! Not sure how expensive this is, but rubberizing the playground would be nice vs the wood chips.
Checkout East Goshan Park, Concord Township Park, Thornberry Park, and West Goshan Park for potential improvements at our Oakbourne Park

Wider paved walkways and safe nature trails, family play areas for 5-12 year children, clean rest room facilities, indoor group activities like Bridge, Senior Club, Wine tasting, etc.
fenced area for dog park with dogs off-leash allowed would be heavily used! and maybe disk golf?
More trails, more trashcans, remove broken glass on trail. Some security measures, I was followed once when i was there by myself. More benches along the paved trail.
More benches and trash cans throughout, remove glass from trails, add security.
Post pandemic concerns and protocols, provide low cost classes - to include history, book clubs, arts discussions, etc. Target adults and seniors.
I don't have any ideas, but I don't think you need to do any major work there. Its always busy so -people are enjoying it as is. Bathrooms would be nice. But I would be afraid of people hanging out in there or drawing bigger crowds.
AEDs! People use this park for recreation and several sports. Kerr park in Downingtown has an AED that's easily accessible. There should be one on the field side and one on the pavilion side.
More community events - car shows, cook-offs, holiday fairs, etc.
Community pool. Spraypad/water play area for kids. Surfaced trails. Children's events in mansion (book readings, character appearances, cookie/cupcake decorating). Christmas tree lighting. Menorah lighting. Ski slope? Lazy river?
Keep the park a park. Do not add more athletic fields. We need open free space.
Maintain the beauty and historic significance of the Mansion and surrounding property. Restore the water tower to the level where people can go inside and experience the historic gem.
I would love it if the trails could be connected in a better way. The "Yellow Trail" is not the easiest to get to, although we love taking walks on that trail as well.
I'd love an off leash dog park
An off leash dog park
maintain walking trails within forested area and cornfield
Longer hours for yard sale days. More entertainment/music for Westtown Days. Bring back the music in the park like Beatles tribute band concerts outside. More of 'cars of Great Britain' type activities. Fall & Christmas activities. More benches in the pond area, an outhouse or two there.
If you are doing anything to the cornfield across the street, I would just like it to be a walking trail and not a sportsfield
Trails need to be cut and filled with the ability to walk on better. Many trail markers are hidden and access to the neighborhood is limited.
I actually love the low key vibe at Oakbourne. It's very peaceful and great for dog walkers and hikers.
More benches. Maybe some placards about the history of the property on and around the trails. An Oakbourne run of sorts. A food truck evening, including a beer truck, to bring in the younger families and couples who moved in from the city.
Would love the opportunity to see music there... Outdoors. Would love the basketball area fixed. Would love the tennis area open and avialable
I really like the pond, Can you fish there? Maybe a deck/dock would be nice, Additional walking paths with mile indicators (ie. a 3 mile loop)
Sometimes the newsletters/mailings are late and we learn about things after the time has passed. I like the digital sign at Oakbourne and it serves as a reminder to me to check out the Township's website for upcoming events. I think all information should be on the website for consistency, not some things on the website and some things on Facebook.
I don't know if you do this Have a picnic there for the township staff and families Also hold a township meeting there
I would not do anything. Preserve your budget due to economic uncertainties with COVID.
We visit the park because of the arboretum and feel of the pathways. We hope no major changes are made as that would change the feel of the environment.
paved parking area

Eliminate some invasive plant species and replace with native plants. Preserve Open space
Indoor community swimming pool
Improve the trail network and add a couple maps to educate visitors what is available. I feel the section across Concord road is under utilized space.
I think an annual 5k run is something that would be a great addition to the event line-up. I regularly trail run through the park and think there is ample amount of trail. We love the family oriented activities like the outdoor movies. And my kids will be playing sports soon, so those facilities would be great to maintain & improve. I also think the farm land across Concord Road should be purchased and used for park purposes.
Mark and map trails better!!
I just found the trails across the street. I've lived here for 35 years and I never knew they existed! It's absolutely beautiful. I'd love to see the trails better mapped and maintained for walkers/runners. The trails don't seem to connect.
I am interested in helping educate Westtown residents about 1.) the advantages of composting at home 2.) introducing concepts such as prairie garden designs which reduce moweable lawn acreage 3.) using native plants instead of exotic species in home gardens
More events scheduled would be nice.
Preserve trails and wooded areas. Keep natural
Keep trails and wooded areas natural and accessible
More trails in the lower section. Maybe a mountain biking loop.
See East Goshen Park
The Mansion can improve the back room used for events. We looked at having our daughters bridal shower at the mansion and would have loved to have done so. The back room is dated and had a smell to it. The front old rooms are beautiful but can't hold many people. You would be able to attract more people to hold events there and thus have more revenue if you just make some improvements to the Mansion.
We need to completely redo the two tennis courts that are there they were put in over 20 years ago thanks to Arnold Cleveland who requested for the time. It is time not only to completely resurface the 2 quarts that are there however we need to add two additional quarts. There are plenty of soccer fields. It would also be who've us to put in a nicer playground for children and Improve the basketball court
Would like to see more trails
Improve trails but do not pave
The mansion does not seem to be open to the public. I would prefer it to be accessible instead of only used for special events or when people rent it.
Again, I would like the wooded area paths to have more wood chips added. This hasn't been done for a while and would Ben helpful for running/walking.
More programs in the mansion
Keep the historic nature of the park. Don't over develop, at least around the mansion. I thought the movie night was a neat idea.
Vendor events at the Mansion, Borough restaurants invited to showcase their specialties inside the mansion, Food truck events at the park, Concerts at the mansion and on the grounds
Expand the existing playground
Better accessibility and use of the Cope Tract. Lose the electronic billboard. It's trashy and was a dated concept before it even went in.
structured dog park, subdivided for small and larger dogs respectively. With water source, doggie bags and waste cans. And in the open part of the park, dogs should be required to be leashed at all times. The fenced part of the dog park, as above, can be for free running.
More Pathways and a crosswalk across South Concord Road
Additional marked pathways
Making the interior more attractive by cleaning it up would attract more paying functions in the mansion, which can pay for upkeep of the park. It would be wonderful to see the park's trails improved and the park brought back to how the Smith family designed it.

Given the financial position and needs of the township I don't feel the township is being fiscally responsible. No more $$ for building improvements. Does not generate meaningful revenue if any at all. Spend on bringing township owned drainage basins up to code consistent with privately owned basins. No more waste on Oakbourne!!!!. .

Upgrade basketball courts; add pickle ball, dog park, improved walking/running/biking trails. Inside yoga classes, etc.

swimmo for township residents

Keep as is. Stop destroying the majestic views and open spaces.

Please do not develop the cornfield side of the park! Maintain the open historic feel of the park. Open spaces in the township must be kept and preserved.

I use the park daily on the cornfield side. It's a great place to enjoy nature and wildlife

Especially at this time we need a place for calmness. I live on James Drive and my property is adjacent to the park. This side of the park gets a lot more use, especially now, by families and kids playing and enjoying all the simplicities that nature brings. Why at this time would you want to take this away from our township.

As a very close neighbor to the park, I believe that developing it with the current plan is a big disservice to the community. The increase in traffic alone will make this very bothersome to the existing township residents who live NEAR the park. There will also be additional foot traffic coming into our street on Windy Knoll to access the proposed fields.

I feel that Oakbourne Park is a great place for families and recreation. I believe that any improvements should take place within the boundaries already set for the park. As a resident who resides near where potential improvements may be added, I would be extremely unhappy with such significant changes to my neighborhood - a reason we bought where we did; to raise our family in a private, quiet neighborhood on Windy Knoll Rd.

Utilize the space to it's potential. It's a well-loved park and visited by many. It is peaceful and full of nature. It provides sporting opportunities for all ages. We don't need to take more beautiful space in Westtown for parking lots. We live very close to the park and we are extremely close to the new building and expansion proposal. The neighbors who will be affected by such expansions are not happy to have what is currently a quiet place to raise our children turn into a public area!

I enjoy walking with my children on the paths across the main park are (where the field is). I noted safety as a concern.
1. Walking across the road with children as people speed can be concerning. A formal walkway should be offered.
2. Roundup is sprayed on park property. This is a carcinogen that has resulted in several lawsuits. This should not be used in public places, especially without signs or warning.
3. The park is not safe for those with accessibility needs. They are forced elsewhere.

The park property should no longer be farmed. That is public property and with the community growing rapidly the need for recreation is going up. I would like to see that area turned into a natural meadow with walking trails and points of interest.

A business plan needs to be established for the Mansion. It is unique and can be used in ways that benefit the public and generate revenue. That said, professionals should be managing it. It is crumbling.

Open up more of the mansion and offer more regular tours focusing on the history of the mansion and the grounds.

Have information readily available about the programs that are there. The only way I know is when I drive by and see the sign. Information about the vegetable garden in the summer, other programs etc. Signs on native plants. Programs to encourage planting native plants for attracting bees, butterflies and birds. Organic gardening. Seasonal Nature walks to learn about the gardens there.

Single track, one way, trail for mountain biking and / or dirt biking, waiver to be signed and on the record with the township

I would love to see a sort bike loop in wooded area below the parking lot

More tennis courts

Add solar lighting features
Water fountains
Expand community garden
Create a nature walk that highlights plant and animal life

Music in the park from May-October would be cool. Maybe virtual tours of the Mansion to generate interest in physical tours as well.
Highlight a social calendar in the Westtown Gazette and at the Amish Market

Leave the cornfields ALONE!! Don't need more car traffic and frisbee golf. Preserve open space!!!!

I'd prefer Oakbourne Park be passive; current active sports level is OK.

Community movie nights, craft fair, holiday fireworks
seems a lot of people walk to the park and we enter thru the path entrance down at the S. Concord / Oakbourne trail. There is not a paved path to get up to the park and walk. Even a nice paved path thru the wooded area would be nice for bikers or walkers. Seems like the wooded area could be more improved on.
Frisbee golf
Expand the walking area across the street
I would improve Oakbourne Mansion. Specifically the back room that can be used for banquets/events. If you do that you can get revenue from people renting it for bridal and baby showers, birthday parties, weddings, etc. I would also do a thorough cleaning of the front rooms of the mansion. Neither of these would require much money and would bring in money to the township. Leave the cornfield alone. We need to preserve the current park.
Just fix the stuff that is there. No additions. Oakbourne doesn't need to attract thousands of people from the area. Only the local residents
How about you guys fix the crappy road that runs parallel to Oakbourne park that has been absolute crap for 10-15 years. How about start with that before you think about your other terrible ideas on how to waste taxpayer money on unnecessary things. Keep oakbourne park as it is, maybe add a permanent bathroom and fix up the tennis/b-ball courts. And spend your time fixing things that ACTUALLY need to be fixed (oakbourne road)
Flower gardens like a very minature Longwood or Chanticleer. Some more evening events w lights Christmas lights stony parking area paved more use of the mansion for the general public Still never got to go up the water tower! trees and flowers labeled (the wisteria was beautiful) wildflower ramble the pond could be a gem to sit and reflect if cleaned up a better train leading towards the Oakbourne Rd bridge where my neighbors and I walk from Thank you!
I'd like to see more available to adults and seniors instead of just a movie night for kids or kid sports. Tai chi in the park? Adult crafting or edu. Socials combined with volunteering to help with the park. Festivals and events. We just don't get all of the use and enjoyment out of the park that we could.
I think the historical area of the park should not be overdeveloped and too active with sports and activities. It's a nice quiet place to go walk currently and I wouldn't want that to change
I am for minor improvements at the existing park but want to see the cornfields on the east side of the park to remain open space
Updated pavilion
Paved trails are important.
1) I would like to see more children's programs, especially for the pre-school (ages 0-4) age group. I'm thinking live music, sing alongs, story times, nature activities, etc. We have such a great park and facilities but it feels underutilized during the weekday daytimes. I would even pay a small fee for such programs. 2) Remove the digital message board! It goes against maintaining the rural feel of our township, is not environmentally conscious (electricity usage), & provides no added value.
Pond improvement
No new development!! Leave open space alone!
Leave as is and instead use funding for installing public sewer for residents that have been suggested numerous other times in the past.
Music in the park. Having music groups or just playing different types of music would bring more of the community to the park and they could see theopportunities that are available for nature lovers, children, and anyone who loves to be outside.
Can you please put a garbage can in the mansionparking lot next to the dog waste bag station? The tennis courts need work. More walking trails if possible.
Consider a regularly occuring farm market or quarterly food event where community members can stop by for shopping

Please just restore the buildings and landscaping to the original architect's and landscaper's design and replace the portable toilets with real restrooms with running water, plumbing fixtures, and waste management.
climbing aparatus, informational/historical signs about the park, trail markings, fitness pull up bars and/or workout area,
There is an arburedum? Where?
Would like to see better walking path surfaces and better defined paths
I like the car shows at the park but they're not well advertised by Township. Art and Craft Show. Connect to (not yet existing) bike paths. Musicwithin a needed Band Stage—Oakborne has natural slope that could be used for a natural amphitheater.
Marian the trails
Instead of making every park stellar, I'd prefer sidewalks all over Westtown and West Chester connecting different parks. We are so fortunate to have so many small parks in the area. As an aging adult, I'd like to walk everywhere.
Did so in earlier question. Thank you for asking.
Marked Trails
For my purposes I enjoy the park the way it is.However, I realize others may want enhancements. I know there's plans to expand across S. ConcordRd. but I don't know if that's a good idea. I enjoy the corn coming up in season and I think there's enough real estate to work with at it's current location. Furthermore, the up front and ongoing costs certainly won't reduce our tax burden.
Walking and running trails
Volleyball. Mini golf. Fountains. Food vendors for special events.
Outdoor gym equipment - pull-up bars, dip bars,step-ups. Volleyball nets Badminton nets Horseshoe pit
Keep it open and natural as possible. Plantings, etc. No need for "development". There are lots of 'developed' parks in neighboring communitiesthat we can use if needed.
I would love a softball field added.

APPENDIX D: APPLYING SUSTAINABILITY

Introduction

Sustainability and green design considerations have become increasingly important and applying these values to park design has become a standard. As defined by Creating Sustainable Community Parks: A Guide to Improving Quality of Life by Protecting Natural Resources, a sustainable community park is one where natural resources are protected, wildlife habitats are improved and human recreational uses and maintenance practices do not conflict with, but rather enhance, the surrounding environment. The Guidelines and Performance Benchmarks for Sustainable Sites Initiative, further defines sustainability as land practices "that meet the needs of the present without compromising the ability of future generations to meet their own needs." The green initiative allows for the park to become and maintain self- sufficiency, while reducing the amount of time and cost that must be required to maintain certain areas in both the long and short- terms.

A sustainable park produces the following benefits to a community: economic benefits by attracting users to the park and the surrounding areas where the park resides; **environmental benefits by reducing impacts to the environment and providing a safe area for wildlife; and health and safety benefits by giving the community an educational environment, allowing for active activities, and reducing crime, creating stronger/safer neighborhoods surrounding the park.**

Do No Harm

Make no changes to the site that will degrade the surrounding environment. Promote projects on sites where previous disturbance or development presents an opportunity to regenerate ecosystem services through sustainable design.

Precautionary Principle

Be cautious in making decisions that could create risk to human and environmental health. Some actions can cause irreversible damage. Examine a full range of alternatives including no action and be open to contributions from all affected parties.

Design with Nature and Culture

Create and implement designs that are responsive to economic, environmental, and cultural conditions with respect to the local, regional, and global context.

Use a Decision-Making Hierarchy of Preservation, Conservation and Regeneration

Maximize and mimic the benefits of ecosystem services by preserving existing environmental features, conserving resources in a sustainable manner, and regenerating lost or damaged ecosystem services.

Provide Regenerative Systems as Intergenerational Equity

Provide future generations with a sustainable environment supported by regenerative systems and endowed with regenerative resources.

Support a Living Process

Continuously re-evaluate assumptions and values and adapt to demographic and environmental change.

Use a Systems Thinking Approach

Understand and value the relationships in an ecosystem and use an approach that reflects and sustains ecosystem services; re-establish the integral and essential relationship between natural processes and human activity.

Use a Collaborative and Ethical Approach

Encourage direct and open communication among colleagues, clients, manufacturers, and users to link long-term sustainability with ethical responsibility.

Maintain Integrity in Leadership and Research

Implement transparent and participatory leadership, develop research with technical rigor and communicate new findings in a clear, consistent, and timely manner.

Green Design

The redevelopment of the park provides an opportunity to incorporate green design techniques. Integration of green design principals and techniques for future construction/ improvements is encouraged to minimize the impact of park development on the natural resources. Please see Appendix E for guidelines for incorporating green infrastructure in parks.

Foster Environmental Stewardship

In all aspects of land development and management, foster an ethic of environmental stewardship - an understanding that responsible management of healthy ecosystems improves the quality of life for present and future generations.

Taken from *"The Sustainable Sites Initiative, Guidelines and Performance Benchmarks"* American Society of Landscape Architects.

Best Management Practices

Development of the park as conceived in this master plan will involve earthwork and construction activities. Best Management Practices (BMPs) are encouraged throughout the construction process to protect the resources and stabilize them through creative design. Best Management Practices will promote a stable future for the site. Detailed Examples of Best Management Practices can be found in Pennsylvania Stormwater Best Management Practices Manual. Some basic examples are listed below for informational purposes and should be considered where applicable in the redevelopment of the park. Incorporation of these facilities will require site specific soils testing to determine infiltration rates and plan for incorporation of applicable BMPs.

Green Design Considerations

Consideration	Intent	Application
Erosion and sedimentation control	Reduce negative impact on air and water quality	Provide erosion control measures and best management practices (BMPs) during new construction activities. Eliminate impact to steep slope areas.
Reduce site disturbance	Limit development to appropriate sites to reduce the impact on the landscape and habitat.	Construct improvements within existing clearings or developed areas.

Consideration	Intent	Application
Stormwater management	Limit disruption and pollution of natural water courses, reduce increased runoff and promote infiltration.	Minimize crossings at water courses. Where crossings are necessary, provide measures for efficient passage of water. Utilize porous pavement to promote infiltration of stormwater runoff. Size parking areas to meet parking need and provide turf overflow parking for high use occurrences and special events.
Reduce heat islands	Minimize impact of microclimate.	Provide plantings in the large, expansive parking areas to break up the hard surface and promote infiltration. Dawn to dusk policy where appropriate.
Reduce light pollution	Improve night sky visibility and reduce impact on nocturnal environments.	Limit lighting within the park. Where night lighting is necessary for safety and security, provide shields or specify full cut-off fixtures and only specify the necessary lumens.
Innovative wastewater treatment	Reduce the generation of wastewater and potable water demand	Provide self-mulching or other environmentally friendly treatment alternatives.
Recycled building materials	Limit the use of consumptive building materials	Utilize recycled plastic and building materials in new construction.
Local materials and suppliers	Support the local economy and reduce the environmental impact resulting from transportation	Purchase products locally produced.
Maximize solar orientation	Reduce electric needs through proper building orientation.	Orient buildings to take advantage of natural light and heat.
Energy consumption	Minimize use of fossil fuels.	Install a ground source geothermal heat pump system for heating and cooling of buildings. Plant deciduous trees to cool buildings in the summer and allow solar access in winter. Layout and orient buildings and outdoor use areas to take advantage of cooling summer breezes. Connect park sites to regional trail systems so that non-motorized transportation modes can be used to access the site. Install solar powered amenities/features.
Promote water conservation	Reduce water use to lower burden on supply.	Select native and drought tolerant plants to reduce watering and maintenance demands. Mulch landscape areas to retain moisture and minimize the need to water plants.

Consideration	Intent	Application
Emphasize and promote recycling	Reduce the amount of new materials required and lower the demand for new materials to be produced.	Reuse existing buildings, materials, and infrastructure. Build with salvaged materials whenever available.
Participate in LEED system.	Employ the Leadership in Energy and Environmental Design (LEED) Green Building Rating System on site as the national standard for Green Design.	Use the LEED project checklist for all aspects of design from erosion & sedimentation control to green power and materials.
Constructed treatment wetlands	Remove a wide variety of pollutants such as suspended solids, nutrients, and organic pollutants.	Shallow water-filled basins planted with emergent plant vegetation. Place at stream/drainage-way outfall to water bodies.
Critical area planting	Stabilize slope, improve wildlife habitat, slow stormwater run-off.	Areas of erodible soils and/or steep slope and at the edge of the stream and perimeter of pond.
Filter strip	To trap sediment and convey run-off from paved surfaces to stormwater channels and reduce run-off velocity.	Adjacent to impervious surfaces and on gentle slopes with sheet flow. Adjacent to springs, streams, and ponds to filter sediment.
Grass swales	Run-off conveyance, pollution, and sediment filtering device and increased ground water infiltration.	Where natural drainage ways can be incorporated into the stormwater design in lieu of piped conveyance.
Level spreader	To reduce the erosion effects of concentrated run-off and promote infiltration.	Adjacent to paved surfaces and at pipe and channel discharge points.
Stream bank stabilization	Protect critical sections of a stream bank where standard vegetative practices are not feasible or offer insufficient protection.	Banks of springs, streams or swales that need to be stabilized due to unstable soil and steep banks.
Minimize site clearing	Minimize disruption to the site's natural systems and preserve the natural stabilizing and filtering vegetation of the site.	Where development is proposed.

DCNR Green Principles

Bureau of Recreation and Conservation Green Principles for Park Development and Sustainability

Principle #1: Maintain and Enhance Trees and Natural Landscaping

Natural landscapes provide vital undisturbed habitat for plant and animal species, some of which may be threatened or endangered. Projects of all types can preserve and enhance these habitats by incorporating natural landscaping which is the use of an aesthetic variety of primarily native plantings well adapted to the local climate and soil. Natural landscapes can provide a cost-effective alternative to conventional turf lawns. Preserving existing natural vegetation including valuable natural areas such as wetlands, grasslands, and woodlands is a fundamental purpose of natural landscaping.[2] Designing with a variety of native trees, shrubs, grasses, and wildflowers can help eliminate large areas of unnecessary turf lawn. Minimizing the amount of turf lawn while maximizing the natural landscape increases water infiltration rates, reduces the maintenance requirement of expensive lawn equipment, reduces noise and emission pollution, minimizes the use of pesticides and fertilizers, and requires little to no watering. While not maintenance free, a well-established natural landscape requires less money for ongoing maintenance than conventional landscapes. The following are some concepts to think about when designing natural landscapes:

Why Plant Native Vegetation?

Pennsylvania's native plants are those that were growing naturally in Pennsylvania prior to Europeans arriving. Pennsylvania has over 3,081 species of native trees, shrubs, flowers, and other forms of plants. Landscaping with native plants has several appealing factors.

Native plants are: [4]

- Adapted to Pennsylvania's soils and climate thus reducing the need for supplementary watering and other horticultural amendments.
- Native plants are an integral part of the larger biological community involving beneficial and pollinating insects, wildlife and ultimately, all of us.
- Offer food and shelter for many species all year long and are the foundation for a healthy, diverse habitat.
- Require less care and watering when established.
- Thrive with less fertilizer. (Most native plants will not need fertilizer once they are established. When fertilizers are used, they should be of the organic or "slow-release" varieties, should be used no more than once or twice a year, and should be used in as small a quantity as possible.[1])
- Provide carefree beauty that enhance any garden or landscape and create a special sense of place.
- Native plants growing in their home environment are naturally more resistant to diseases, pests, or physiological disorders.
- When planted along waterways, native plants protect ponds and streams by filtering pollutants and preventing erosion.

Maintenance over a 20-year span for a non- native turf grass landscape can cost almost seven times more than the cumulative costs of maintenance for a native prairie or wetland.

~U.S. EPA, 2007

Grass Maintenance:

Cool season turf grass, a staple of traditional parks, should be limited to human-use areas such as ball fields and picnic groves. Native cool season grasses, such as Canada and Virginia wildrye, should be used in place of non-native cool season grasses like Kentucky bluegrass and tall fescue. Warm season grasses can be used to establish a meadow to provide wildlife habitat or used as attractive landscaping. Native warm season grasses include big bluestem, little bluestem, and switchgrass.[1]

- Even if you keep some area in lawn, much can be done to lessen environmental impacts:[3]
- Reduce or eliminate the need for pesticides by practicing Integrated Pest Management. Use a mulching mower so that clippings can remain on the lawn and provide nutrients as they decompose.
- Where the lawn is small, use a non-powered reel mower. (Modern models of the reel mower are much easier to use than the older models.)
- Keep gas-powered mowers in efficient operating condition (well-tuned, sharp blades) and raise the cutting height to 3-3.5" during the hot summer months to keep the grass roots shaded and cooler, reducing weed growth, browning, and need for watering.
- If you don't use a mulching mower, compost excess grass clippings in your yard and later use it as a soil amendment around trees and shrubs.
- Learn to tolerate some weeds or a greater variety of plants in the lawn.
- Don't over-fertilize. A slow-release organic fertilizer applied once, in the fall, is usually sufficient.

Enhancing and protecting meadows that contain native grasses and wildflowers is a great way to attract wildlife and save on lawn maintenance equipment costs. Common meadow wildflowers include Black-eyed Susan, sunflower, aster, and goldenrod. Warm season grasses are prime habitat for grassland and ground-nesting birds; birds such as bobolink, Eastern meadowlark, and grasshopper sparrow require at least 25 acres of grassland for survival. However, other birds, such as goldfinch, field sparrow, Eastern bluebird, Eastern phoebe, and Eastern kingbird, do occupy smaller grasslands.[7]

Protect Existing Features:

Mature trees enhance air quality and reduce pollution, enhance water quality, and reduce erosion, and can reduce energy costs when properly planted around a building. When appropriate, design the site to protect existing trees. During excavation of the project site be sure the trees' root zones are protected. Therefore, it is recommended that any excavation occur outside the perimeter of the tree canopy.[5]

Topsoil is the most fertile portion of soil and the most valuable. "It requires 500 years under natural conditions to produce an inch of topsoil."[6] The natural fertility of topsoil promotes healthier grass and reduces the amount of fertilizer required to establish landscape plantings. Therefore, one of the most important steps during construction and planting projects is to retain as much existing topsoil as possible. The best option is to stockpile and reuse the topsoil instead of removing it from the site. Using the existing topsoil not only saves money, but also minimizes disturbance

that could encourage the growth of invasive plants.

Local and regional greenways are excellent and appropriate locations for natural landscaping. Many greenways contain rivers, streams, or other waterways.[2] In these locations, a variety of native trees, shrubs, grasses, and wildflowers planted in buffers adjacent to the stream provide wildlife habitat, bank stabilization, filter pollutant and sediment runoff, and create a healthy stream ecosystem for fish and stream invertebrates. To provide the maximum benefits, a buffer should be 100 feet or more on each side of the stream, although smaller buffers are better than nothing and will still provide some benefits.

Floodplains provide many important services and should be protected from development. Floodplains reduce flood velocities and flood peaks, reduce erosion potential and impacts, provide a broad area for streams to spread out and for temporary storage of floodwater, reduce sediment loads, filter nutrients, process organic and chemical wastes, and moderate water temperature.

Maintaining native vegetation in floodplains helps absorb and slow flood waters reducing the impact a flood may have on downstream communities.[8]

Undisturbed soil and vegetation provide important stormwater functions including water infiltration; nutrient, sediment, and pollutant adsorption; sediment and pollutant biofiltration; water storage and transmission; and pollutant decomposition. These functions are largely lost when development strips away native soil and vegetation and replaces it with minimal topsoil and sod.[11]

Plant Trees:

Maintaining and planting trees have many benefits. Trees reduce CO2 levels and increase oxygen, play an important role in stormwater management by reducing erosion and sediment runoff, improve water quality, help cool our planet by providing the service of carbon sequestration which happens when trees store carbon in their roots and trunks keeping it from entering the atmosphere, save energy when properly planted around a building, increase property values, and studies have shown that trees can significantly reduce stress levels and accelerate healing time.

Pennsylvania, through the Department of Conservation and Natural Resources (DCNR) the Bureau of Recreation and Conservation and the Bureau of Forestry has developed a Public Private Partnership, through regional collaboration, to address the loss of tree cover in Pennsylvania. This program, called TreeVitalize, has established goals to plant one million shade trees, restore forests along streams and water protection areas, build capacity for long term urban forest management, establish strong urban forestry partnerships in all 14 metro areas in Pennsylvania, and train 10,000 citizens to plant and care for trees, over a five-year period. To learn more about TreeVitalize and to find out how you can get involved visit: http:// www.treevitalize.net/.

Compost:

Leaves, grass clippings and other yard debris clog landfills, taking up 20-40% of landfill space. This so-called waste is actually a valuable natural resource that once decomposed, offers a nutrient rich organic matter that can be a source of mulch or can be added to soil as a natural fertilizer. Compost can also help soil retain some of its moisture content. Compost can be made on-site, or can be brought in from a municipal composting facility.[3] To learn more about composting visit: http://www.howtocompost.org/.

Invasive Plant Removal:

An invasive non-native plant is one that is not natural to the ecosystem under consideration, and when introduced cause or are likely to cause harm to the economy, to the environment, or to human health. Invasive plants can be trees, shrubs, vines, grasses, or flowers, and they can reproduce rapidly by roots, seeds, shoots, or all three.

Why Are Invasive Plants So Detrimental?

Natural predators and diseases can't compete when non-native plants are introduced. Most invasive plants are introduced from other continents, leaving behind in their native homeland natural controls like pests, diseases, and predators, which serve to keep these species in check. Due to this absence of natural controls, invasive plants reproduce rapidly and can form stands that exclude nearly all other plants. In the process, they damage natural areas, altering ecosystem processes and displacing desirable native plant species.

Plants like kudzu, purple loosestrife, and garlic mustard are displacing native plants and degrading habitat for native insects, birds, and animals.

Invasive plants endanger some rare and threatened native species of plants and animals, which are especially vulnerable because they occur in such small populations.

Invasive non-native plants often do not provide as much food and other habitat value as native plants do.

Invasive plants, even when grown in a cultivated yard, can spread, escape, and cause landscape maintenance weeding problems for years to come.

Some invasive plants release toxic chemicals that kill other plants.

Land managers who are faced with the daunting task of managing or controlling invasive species on natural lands rely on resources like the "Invasive Exotic Plant (IEP) Management Tutorial for Natural Lands Managers" in order to implement effective management, control and education programs: http://www.dcnr.state.pa.us/forestry/invasivetutorial/index.htm. This tutorial provides a "one-stop-shop" for natural resource managers who are interested in organizing on-the-ground efforts to prevent, manage and control IEPs.[9]

References:

[1] DCNR. Creating Sustainable Community Parks. A Guide to Improving Quality of Life by Protecting Natural Resources. http://www.dcnr.state.pa.us/brc/publications/

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http://www.epa.gov/reg3esd1/garden/what.htm

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http://www.abnativeplants.com/index.cfm/fuseaction/home.why/index.htm

[5] Santa Monica Green Building Program. Inventory, Mark and Protect Topsoil, Trees and Vegetation to be Retained. http://greenbuildings.santa-monica.org/construction/topsoiltree. html

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Natural Resource Conservation Service. Importance of Topsoil.

http://www.druby.net/joomla/images/pdf_docs/topsoil.pdf

[7] Natural Lands Trust. Meadows in Southeastern Pennsylvania.

http://www.natlands.org/uploads/document_28200794705. pdf

[8] Ohio Department of Natural Resources. Division of Water Fact Sheet. Natural Benefits of Floodplains.

http://www.dnr.state.oh.us/Portals/7/pubs/pdfs/fctsht50.pdf

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[10] Maryland Department of Natural Resources- Forestry. The Benefits of Urban Trees. Urban and Community Forestry: Improving Our Quality of Life.

http://www.dnr.state.md.us/Forests/Publications/urban.html

[11] Building Soil. Guidelines and Resources for Implementing Soil Quality and Depth BMP T5.13 2009 Edition.

http://www.soilsforsalmon.org/pdf/Soil_BMP_Manual.pdf

Additional Resources:

Arbor Day Foundation. The Value of Trees to a Community.

http://www.arborday.org/trees/benefits.cfm

Earnst Seed Company. http://www.ernstseed.com/seed_mixes.aspx

National Wildlife Federation. Create a Certified Wildlife Habitat.

http://www.nwf.org/backyard/

The University of Tennessee. A Landowner's Guide to Native Warm-Season Grasses in the Mid-South.

http://www.utextension.utk.edu/publications/pbfiles/PB1746.pdf

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http://www.epa.gov/greenscapes/ http://www.epa.gov/reg3esd1/garden/

Pennsylvania's Composting Home Page. Department of Environmental Protection.

http://www.depweb.state.pa.us/landrecwaste/cwp/view.asp?a=1338&q=469423

Pennsylvania Department of Conservation and Natural Resources. Landscaping with Native Plants in Pennsylvania.

http://www.dcnr.state.pa.us/forestry/wildplant/ native.aspx

iConserve Pennsylvania. Plant Natives.

http://www.iconservepa. org/plantnatives.html

The Natural Lawn & Garden: Growing Healthy Soils.

http://www.seattle.gov/UTIL/stellent/groups/public/@spu/@csb/documents/webcontent/growinghe_200311261701557.pdf

Bureau of Recreation and Conservation Green Principles for Park Development and Sustainability

Principle #2: Connect People to Nature

When designing a site for public use (whether a park, trail, greenway, playground, or community pool) there is a concept called "human well- being" that is addressed in the National "Sustainable Sites Initiative Standards and Guidelines Report"[1] and should be considered during development of the site plan. Listed below are several ideas taken directly from the Report.[1] The Department of Conservation and Natural Resources (DCNR) iConserve program also provides for the connection of human well-being to outdoor recreation, conservation, and stewardship. Learn more about iConservePA at: http://iconservepa. org/.

Provide Opportunities for Interaction with Nature

Provide a diverse landscape to support a broad range of users and activities; including spaces for physical activity, nature/discovery trails, access paths to streams, way-finding features, and "cues to care," which are design devices (such as mowed edges or low fences) that communicate that a naturalistic landscape welcomes users.

Design Spaces that Address Children's Needs

Provide pedestrian-only areas so children and youth can play without concern for traffic. Provide parks and open spaces that serve several residential areas, which give children a sense of place and belonging. Provide interesting landscape places (designed and naturalistic) that enable exploratory play. For example, boulders for climbing, streams for discovery, open meadows with trails, sensory gardens (where children can touch, smell, and even taste plants), and large trees and other natural features for hide-and-seek and unstructured games.

Provide Opportunities for Passive Experiences with Nature

Maintain all possible trees on-site. Optimize water views or provide fountains. Place and configure plantings that achieve other ecosystem services (such as rain gardens for infiltration and stormwater management) to provide visual amenities. Establish nature trails, and wildlife viewing areas.

Educate Site Users

Create demonstration gardens that allow visitors to observe biodiversity and learn how they can establish the same type of garden at their home. Protect wetlands and other natural areas and provide interpretive materials to education about the benefits provided by these features. Facilitate wildlife viewing and learning, by establishing bird boxes and observation areas with educational exhibits about the types of wildlife visitors might see. Provide interpretive materials or stations that inform about local ecosystems and their functions. Incorporate signs that explain how "no mow zones" are beneficial for humans and wildlife.

Provide Spaces for Social Interaction

Create small theme gardens (such as color, texture, smell, butterfly, etc.). Create "community greens" that can serve as outdoor meeting rooms, break, or study spaces, and spaces for organizational events and celebrations. Ensure that user spaces are safe and secure using Crime Prevention through Environmental Design (CPTED) principles (see www.cpted-watch.com for more information).

Support On-Site Food Production in Healthy Environments

Establish a Community Supported Agriculture (CSA) area for local residents to enjoy growing their own vegetables on a designated plot of land.

Consider Local Cultures/Communities and Their Needs

Identify local groups of potential users and provide amenities that address the needs or support the culture of local people.

Plant Trees

Trees are beneficial additions to any site. Planting trees should be considered during the planning and developing of all recreational sites. Trees have direct human benefits such as creating effective sound barriers that can muffle urban noise almost as effectively as stone walls; producing oxygen, absorbing, and locking away carbon dioxide, and cleaning the air by intercepting airborne particles, reducing heat, and absorbing such pollutants as carbon monoxide, sulfur dioxide, and nitrogen dioxide. Trees shade and cool reducing the need for air conditioning in the summer and break the force of winter winds, lowering heating costs in the winter. Trees fight soil erosion and reduce water runoff and sediment deposition after storms.

References:

[1] Sustainable Sites Initiative. Standards and Guidelines: Preliminary Report. November 1, 2007.

http://www.sustainablesites.org/report.html

Additional Resources:

Penn State University, College of Agricultural Sciences Cooperative Extension. From the Woods. Community Forests.

http://pubs.cas.psu.edu/FreePubs/pdfs/uh173.pdf Arbor Day Foundation. Nature Explore.
http://www.arborday.org/explore/classroom/index.cfm

Recreation Management. Nature and Nurture, Trends in Play Design.

http://www.recmanagement.com/feature_printphp?fid=200907fe02

Local Harvest. Community Supported Agriculture.

http://www.localharvest.org/csa/

Bureau of Recreation and Conservation Green Principles for Park Development and Sustainability

Principle #3: Manage Stormwater Naturally

Stormwater runoff occurs when excess water from rainfall and snow events flows across paved streets, parking lots, rooftops, and construction sites. This runoff can be a significant source of pollution and sedimentation ending up in our lakes, rivers, streams, and other water bodies.

The following are stormwater impacts of conventional development (including parks and recreation areas):

- Increased flooding
- Increased runoff volume
- Decreased evapotranspiration and groundwater recharge
- Increased frequency of runoff events
- Erosion and stream channel changes
- Decreased stream baseflow
- Impacted aquatic life
- Pollutant and temperature impacts to streams

Goals of natural stormwater management:

- Capture and detain stormwater runoff as close to the source as possible;
- Reduce the volume of stormwater entering the combined sewer system;
- Filter stormwater to remove pollutants before the runoff enters groundwater, streams, or wetlands;
- Use and promote methods that provide multiple environmental benefits; and
- Use techniques that are less costly than traditional piped solutions.

Consider the following on your site to prevent stormwater from becoming an issue.

Create and Enhance Riparian Buffers

Riparian buffers and riparian forest buffers are areas of vegetation alongside streams and other bodies of water that mitigate floods, recharge groundwater, prevent erosion and sedimentation of the stream, trap pollutants within plant roots, improve aquatic and terrestrial species habitat, and provide optimum food for stream communities. In these locations, native vegetation (ideally a variety of native trees, shrubs, grasses, and wildflowers) provides wildlife habitat, bank stabilization, and water quality benefits.[1] Although smaller buffers will still provide some benefits, to provide the maximum benefits a buffer should be a

minimum of 100 feet on each side of a perennial or intermittent stream, river, lake, pond, and reservoir. For those bodies of water designated as Exceptional Value or High-Quality waters, the minimum width should extend to 150 feet.[4] Below is a list of tips for managing buffers:[3]

- Provide some public access to the water but keep vegetation clearance to a minimum.
- Avoid work in streams, wetlands, or waterways whenever possible.
- Don't alter a stream bank or shoreline unless you're returning it to a natural state (banks should normally be sloping and covered with vegetation).
- Soil disturbance should not take place within the buffer by grading, stripping of topsoil, plowing, cultivating, or other practices.
- Motorized vehicles should not be stored or operated within the riparian forest buffer.
- Remove/manage invasive exotic species to keep them from spreading.
- Improve riparian buffers by planting native trees, shrubs and ground covers that are tolerant of wet or seasonally flooded sites.
- Avoid or minimize the use of pesticides and fertilizers near waterbodies.

Protect Wetlands and Critical Recharge Areas

Wetland functions include water quality improvement, floodwater storage, fish and wildlife habitat, aesthetics, and biological productivity.

Wetlands within and downstream of urban areas are particularly valuable, counteracting the greatly increased rate and volume of surface-water runoff from pavement and buildings. They also recharge groundwater and trap sediment, fertilizers, and pollutants. Construction and other forms of disturbance should be avoided in and near wetlands. A vegetated buffer should be maintained around wetlands wherever possible. Man-made wetlands cannot duplicate all the functions of a natural wetland, so it is critical that natural wetlands be protected whenever possible.[1]

Critical recharge areas are typically large contiguous areas of land that allow precipitation and other surface waters to infiltrate through the soil to recharge the groundwater. Without constant recharge, periods of drought could leave streams and wells dry, thus affecting available drinking water and wildlife habitat. Practicing green and sustainable initiatives (such as those outlined in this series of fact sheets) when developing in or near a wetland or critical recharge area can ensure that these features are preserved and remain fully functional.[1]

Design Natural Stormwater Management Systems

Natural stormwater management can be more cost-effective than traditional gray infrastructure of pipes and treatment facilities. There are many best management practices (BMPs) for natural stormwater management that minimize the impact of impermeable surfaces such as roads, rooftops, and parking lots. These BMPs can include designing narrower roads; permeable surfacing for roads, parking lots, trails, walkways, rain gardens and vegetative swales; and rainwater catchment systems for rooftops. The remaining runoff can be directed to native grass swales or rain gardens. Even just planting more native trees near impermeable surfaces can reduce the need for large, expensive stormwater management systems.[1]

Alternative Pavers

A technique for green parking utilizes alternative pavers that can range from medium to relatively high effectiveness in meeting stormwater quality goals. Alternative pavers are permeable or semi- permeable surfaces that can replace asphalt and concrete and can be used for driveways, parking lots and walkways. The different types of alternative pavers include gravel, cobbles, wood mulch, brick, grass pavers, turf blocks, natural stone, pervious concrete, and porous asphalt.[2]

Stormwater Wetlands

Stormwater wetlands (also called constructed wetlands) are structural practices similar to wet ponds that incorporate wetland plants in a shallow pool. As stormwater runoff flows through the wetland, pollutant removal is achieved by settling and biological uptake within the practice. Stormwater wetlands are fundamentally different from natural wetland systems. They are designed specifically for the purpose of treating stormwater runoff, and typically have less biodiversity than natural wetlands both in terms of plant and animal life.[2]

Common Stormwater BMPs

- Rain/recharge gardens/bioretention
- Vegetated filter strips
- Vegetated swales
- Porous pavement with infiltration beds
- French drains/dry wells
- Vegetated roofs
- Cisterns/rain barrels/capture reuse
- Constructed wetlands
- Riparian corridor restoration
- Revegetation/reforestation

Non-Structural Stormwater BMPs

- Protect sensitive/special value features
- Protect/enhance riparian areas
- Protect natural flow pathways
- Cluster uses at each site; build on the smallest area possible
- Minimize total disturbed area
- Minimize soil compaction
- Revegetate and reforest disturbed areas, using native species

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Bureau of Recreation and Conservation Green Principles for Park Development and Sustainability

Principle #4: Conserve Energy

The best way to save energy is not to spend it.

Renewable energy and energy efficiency mean less air pollution (including mercury, nitrogen oxides and carbon dioxide), less water consumption and less waste. It means less dependence on foreign oil and more self-sufficiency. It means less ground level ozone, less acid rain, and less particulate matter in the air. Ultimately, this means improved health. There are many opportunities to include renewable energy technology and energy efficiency techniques in site design. Please consider these different alternative energy sources and energy efficiency techniques to power your facilities as you move forward with your project planning and site design.

Accomplishing Energy Efficiency

The following are some techniques that can be incorporated in your site design to help save energy and money, and benefit the environment at the same time:[8]

- Include in your site planning a mandatory maintenance schedule for your building to:
  - Clean filters
  - Replace belts
  - Commission the building (give your building a "tune-up")
  - Achieve a certain percentage of energy consumption

- HVAC rehab
  - Use state-of-the art, high efficiency, heating, ventilation, and air conditioning (HVAC) and plumbing equipment, chillers, boilers, and water heaters, etc. Use variable speed drives on fan and pump motors. Use heat recovery ventilators and geothermal heat pump technology for up to 40% energy savings.
  - Programmable system to turn on during the day and off at night
  - Fan cycler/censor to replace or attach to heat pump

- Waterless urinals
- Censored faucets
- On-demand controls in shower houses (faucets, toilets, lighting, fans)
- Instantaneous water heaters
- Sky lights
- Light level meter or dimming system
- Reduce outdoor night-time light pollution by avoiding over- illumination of the site and use low cut-off exterior lighting fixtures which direct light downward.
- Use energy efficient T-8 and T-5 bulbs, high efficiency electronic ballasts, and lighting controls. Consider using indirect ambient lighting with workstation based direct task lighting to improve light quality, reduce glare and improve overall energy performance in general office areas. Incorporate sensors and controls and design circuits so that lighting along perimeter zones and offices can be switched off independently from other interior lights when daylighting is sufficient in perimeter areas.
- Use Energy Star certified energy efficient appliances, office equipment, lighting, and HVAC systems.

Solar

Solar technologies use the sun's energy to provide heat, light, hot water, electricity, and even cooling, for many different types of facilities. Solar power is probably the cleanest, most viable form of renewable energy available and it can be used in several forms to help power your facility. Many gardens use solar lights or solar garden water features.[2] A variety of technologies have been developed to harness solar energy. In Pennsylvania, these technologies include: Photovoltaic systems (produces electricity), solar hot water heating, and passive solar heating and daylighting.[6]

Wind

Wind is a clean, inexhaustible, indigenous energy resource that can generate electricity. Wind energy is one of the fastest-growing forms of electricity generation in the world.[1, 3] Pennsylvania has good wind resources in portions of the state. Municipalities and non-profit organizations can use small wind turbines for on-site energy generation.[7]

Geothermal Heat Pump

The ten feet of earth directly beneath the surface maintains a nearly constant temperature between 50° and 60°F (10°-16°C). Like a cave, this ground temperature is warmer than the air above it in the winter and cooler than the air in the summer. Pennsylvania has low to moderate temperature resources that can be tapped for direct heat or for geothermal heat pumps. Geothermal heat pumps take advantage of this resource to heat and cool buildings.[1]

Biomass and Biofuels

Biomass and biofuels provide an excellent opportunity to heat and power buildings. Heating options may include the installation of a wood chip heating system, wood pellet furnace or boiler systems, corn furnace, or simply using a biodiesel blended heating oil commonly referred to as a bio-heat product. Biofuels can be used to power small-scale workshop machinery and electricity generators as well as vehicles.[1]

Fuel Cells

Fuel cells are an option that local governments can consider when exploring alternative energy choices and distributed energy technologies. A fuel cell is a device that converts the chemical energy of a fuel into electricity with heat and water as the major by-products. There are several types of fuel cells and different fuels used for electricity generation.[1]

Using Plants to Reduce Heating and Cooling Needs

Plants can significantly reduce a building's energy needs; it is cooler in the shade of trees during the summer and warmer behind vegetation that block winter winds. The general rule is to plant deciduous trees (those that lose their leaves in winter) on the south and west sides of a building where the sun's rays are most direct and intense. These trees will provide shade during summer but permit the winter sun to provide warmth. Where there isn't room for trees, shrubs and vines can provide similar benefits. Extensive use of trees to shade buildings, streets, driveways, and other large, paved surfaces can even cool entire communities. To reduce winter heating costs, plant evergreen trees and shrubs as windbreaks. Most cold winds come from the north or west (though this can vary locally), so on those sides of the building plant a dense row of evergreens that maintain branches low to the ground. Where new construction is planned consider "green roofing" where roofs are specially designed to accommodate plants. Such roofs provide insulating value that further reduces heating and cooling needs and can be very long-lasting when properly maintained.[4, 5]

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Bureau of Recreation and Conservation Green Principles for Park Development and Sustainability

Principle #5: Integrate Green Design and Construction

The ideal "green" project preserves and restores habitat that is vital for sustaining life. The site and all structures on the site become net producers and exporters of resources, materials, energy, and water rather than being net consumers. In other words, a green building is one whose construction and lifetime of operation assure the healthiest possible environment while representing the most efficient and least disruptive use of land, water, energy, and resources. The optimum design solution is one that effectively emulates all of the natural systems and conditions of the pre-developed site – after development is complete.[1]

Green infrastructure means restoring floodplains to their naturally functioning system instead of building taller levees. It means planting trees, preserving open space, and installing features like rain gardens, grass swales and green roofs, rather than

enlarging sewers or building costly new treatment plants. It means retrofitting buildings and homes with water-efficient plumbing and rainwater capture systems instead of constructing an expensive water supply dam.

Green Design Can Save Money

While many green materials and technologies do cost more, it has been demonstrated that many green strategies and technologies actually cost the same and some even cost less than traditional "not-so-green" technologies. Often the key to a cost-effective green building and site design lies within the interrelationships and associated cost and performance trade- offs that exist between different building systems. For example, the use of high-performance windows and window frames increases the initial building costs, however the resulting reduction in the size and cost of the buildings heating and cooling system more than offsets the added cost of the better glazing system. The result is a building that has a comparable or perhaps even a lower first cost, a higher comfort level, lower energy use, and lower energy bills and operating cost for the life of the building.[1]
Leadership in Energy & Environmental Design (LEED) Green Building Rating System™.

A voluntary, consensus-based standard to support and certify successful green building design, construction, and operations. LEED is transforming the marketplace by providing a nationally recognized certification system to promote integrated, whole-building design practices in the building industry.[2]

For a project to become LEED certified, it is required that the project follows energy efficiency, environmentally conscious methods, as defined by the LEED Green Building Rating System, Version 3, 2009, in the following areas:

By blending the right mix of green technologies that cost less with green technologies that cost the same or slightly more, it is possible to have a very green building project that costs the same as a conventional one.

Vegetative Green Roofs

A green roof, or rooftop garden, is a vegetative layer grown on a rooftop. Green roofs have a layer of living plants on top of the structure and the waterproofing elements.

Why are vegetative green roofs such a good idea? [4]

They reduce roof stormwater runoff. In some cases, this can help reduce the size of stormwater pipes, and the amount of stormwater that needs to be treated by municipal water treatment. They also filter pollutants from rainfall.

Green roofs also protect the roof membrane from sunlight, which breaks down the roofing material. Having even a couple inches of soil helps to greatly extend the life of the roof, and a longer lifespan means les material ends up in landfills from reproofing buildings after the membranes have failed.

They reduce energy use: Green roofs absorb heat and act as insulators for buildings, reducing energy needed to provide cooling and heating.

A green roof is also a source of oxygen and provides a habitat for some birds and insects. They reduce air pollution and greenhouse gas emissions: by lowering air conditioning demand, green roofs can decrease the production of associated air pollution and greenhouse gas emissions. Vegetation can also remove air pollutants and greenhouse gas emissions through dry deposition and carbon sequestration and storage.

A Few Techniques to Consider:[3]

Optimize building orientation, massing, shape, design, and interior colors and finishes. By maximizing the use of controlled natural day lighting artificial lighting energy use will be significantly reduced. Provide shades or daylight controls where needed.

Use **high performance low-e glazing**. Consider insulated double glazing, triple glazing or double pane glazing with a suspended low-e film. Selective coatings offer optimal light transmittance while providing minimal solar gain and minimal heat transmission. Window frames, sashes and curtain wall systems should also be designed for optimum energy performance including the use of multiple thermal breaks to help reduce energy use.

Avoid the use of HCFC and Halon based refrigeration, cooling and fire suppression systems. Optimize the use of natural ventilation and where practical use evaporative cooling, waste heat and/or solar regenerated desiccant dehumidification or absorption cooling. Identify and use sources of waste energy.

Identify ways to **use high-recycled content materials** in the building structure and finishes. Consider everything from blended concrete using fly ash, slag, recycled concrete aggregate, or other admixtures to recycled content materials such as structural steel, ceiling and floor tiles, carpeting, carpet padding, sheathing, and gypsum wallboard. Consider remanufactured office furniture and office partition systems, chairs and furniture with recycled content or parts.

Explore the use of **bio-based materials and finishes** such as various types of agriboard (sheathing and/or insulation board made from agricultural waste and byproducts, including straw, wheat, barley, soy, sunflower shells, peanut shells, and other materials). Some structural insulated panels are now made from bio-based materials. Use lumber and wood products from certified forests where the forest is managed, and lumber is harvested using sustainable practices. Use resource efficient engineered wood products in lieu of full dimension lumber which comes from older growth forests.

Evaluate all products and systems used for their **ability to be recycled** when they reach the end of their useful life. Preference should be given to products and systems that facilitate easy, non-energy intensive separation and recycling with minimal contamination by foreign debris.

Recognize that **transportation** becomes part of a product or building materials embodied energy. Where practical, specify and use locally harvested, mined and manufactured materials and products to support the regional economy and to reduce transportation, energy use and emissions.

Develop a **strict waste-management practice** to divert construction wastes from reaching the landfill. Use materials and resources found on the site in the site design and construction.

For a project to become LEED certified, it is required that the project follows energy efficiency, environmentally conscious methods, as defined by the LEED Green Building Rating System, Version 3, 2009, in the following areas:

- Sustainable Sites
- Water Efficiency
- Energy & Atmospheric
- Materials & Resources
- Indoor Environmental Quality
- Innovation in Design
- Regional Priority

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APPENDIX E: GREEN INFRASTRUCTURE IN PARKS

Green infrastructure in parks is established first by building partnerships between park and stormwater agencies to utilize park land for green infrastructure. Green infrastructure in parks will lead to opportunities to enhance stormwater management capacity, park improvements, and funding for the park. The main goals of green infrastructure in parks are to promote and enhance overall environmental, economic, and social benefits.

How Green Infrastructure Can Enhance Parks

- **Recreation Value** – creating or enhancing amenities and environmental quality.
- **Park Appeal** – Combines function of runoff management with design to apply native plantings, creates strategic topographic function, interest, and layout for amenities.
- **Enhance Social and Environmental Equity** – addresses environmental justice by combining parks and green infrastructure to create benefits for the entire community by improving environment, quality of life, and providing access to public amenities.
- **Reduces Maintenance** – stormwater utility funds for improved drainage, reduce erosion, and eliminate standing water.
- **Improves Drainage** – provides options to mitigate drainage and flooding problems.
- **Education** – provides opportunities to educate public with interpretive signage about the importance and types of measures that reduce stormwater pollution at various level and applications.
- **Economic Benefits** – can be installed to earn stormwater utility credits, maintenance funding, or have BMPs managed by an outside party depending on types and approaches take by the local municipality.
- **Water Quality** – stormwater volume and pollutant reductions which can help meet municipality regulatory requirements.
- **Environmental Benefits** – improves urban heat island effects and overall environmental and ecosystem quality with the incorporation of green space and native perennial, shrub, and tree plantings attracting wildlife.

Combining Parks and Green Infrastructure

Green Infrastructure serves parks by utilizing open areas for absorption and park infrastructure areas built or retrofitted to treat stormwater or drain to enhanced pervious surfaces including parking lots, visitor centers, playing fields, paved trails, walkways, and roads, wetlands, and drainage systems.

Common Questions / Concerns

Why choose green infrastructure over traditional gray infrastructure?

Benefits of choosing green infrastructure include:

- Attractiveness, effectiveness, and multifunctional capacity
- Habitat for beneficial wildlife / pollinators
- Ability to reduce maintenance and eliminate mosquito breeding habitat
- Can incorporate existing park features / natural and man-made
- Potential to reduce infrastructure costs

Will it attract nuisance wildlife and pests such as mosquitos?

If designed and maintained correctly it will not:

- Implement a mix of plants to attract beneficial wildlife.
- Select green infrastructure elements that eliminate standing water that could serve as mosquito breeding habitat, and design facilities to drain in 72 hours and / or ensure permanent pools don't become stagnant.
- Nuisance wildlife can occur in all parks, but good design and management practices such as eliminating food sources and providing securely covered trash receptacles can reduce or eliminate problems.
- Inspect practices regularly to remedy any problems.

Will stormwater features be unattractive or unsafe?

Not if green infrastructure is used:

- Green infrastructure practices are typically integrated into the landscape and rely mainly on soils, vegetation, and infiltration to reduce runoff.
- Traditional stormwater management creates detention basins and wet ponds that are often unsightly and need fences to keep out the public.
- Green infrastructure features can be designed with aesthetics in mind and can even incorporate benches, art, or sculptural designs.

How to maintain public safety and limit liability?

If possible, design features to infiltrate runoff:

- Design stormwater elements that minimize the risk potential for park users such as eliminating trip hazards, adding crushed stone paths, or designing boardwalks or viewing platforms.
- Create water feature areas with the public in mind promoting informed design, clear sight lines, and natural features such as wetland fringes can reduce or eliminate hazards.
- Limit access to gently sloping bank areas around water features by adding natural screens and barriers, and allow public access where it can be controlled or monitored by park staff.

What are the funding and maintenance needs?

Funding:

- Stormwater utilities often have program funding that can be used to construct and maintain stormwater features in parks.
- In some cases, stormwater management agencies may provide direct funding to parks to operate and maintain stormwater management features that the stormwater utility builds in the park or areas adjacent to the park.
- Depending on the jurisdiction, costs can be shared across agencies.
- Grants might be available from the state or other granting organizations, such as nongovernmental agencies that have an interest in enhancing the park and the community in general. Examples of such funds include community revitalization, smart growth, or watershed restoration funds.
- A wider range of grants could be available because of the multifunctional nature of such projects that may have park enhancement, as well as watershed, and neighborhood improvement grants.

Funding Maintenance:

- If the community has a stormwater utility, money can be set aside for green infrastructure maintenance.
- If both parks agencies and stormwater agencies receive general funds, a maintenance budget can be negotiated and allocated according to each agency's responsibilities.
- When deciding to engage in creative management arrangements such as these, be sure that funds are budgeted before the project is constructed and that long-term operation and maintenance needs are incorporated into the continuing operating budget. This will help ensure that adequate funds are allocated to the agency responsible for the maintenance burden.

Maintenance Duties:

- If funds are allocated to supplement the existing park maintenance activities, park maintenance staff or contractors managed by the park can perform the necessary maintenance.
- Most green infrastructure practices can be maintained by landscape professionals who have received some supplemental training specific to the stormwater practices being implemented.
- In other cases, the stormwater agency might want to either directly manage maintenance or oversee maintenance to ensure proper functioning of the stormwater management practices.
- Maintenance responsibilities can also be divided between the park maintenance staff and staff trained or managed by the stormwater utility, depending on the practices employed. For example, maintenance of bioretention facilities typically can be taken care of by the regular landscape crews as long as they understand what to mow and weed and how to identify problems. More difficult maintenance activities, such as the use of vacuum sweepers for permeable pavements or the maintenance of water features, could be performed by the stormwater utility.
- Ideally, the details, responsibilities, and funding allocations should be worked out in a memorandum of understanding (MOU) or other such agreement between agencies (see page 18).
- Most vegetative practices like rain gardens are maintained like any landscaping - weeding, pruning, digging, and removing trash.
- Rainwater harvesting practices require simple cleaning of gutters and downspouts.
- Permeable pavement is low maintenance but can benefit from occasional vacuum sweeping.

Process for Implementing Green Infrastructure

1. **Identify and Engage Partners** – determine interest and funding opportunities

    a. Government Agencies – local, transportation departments, school districts, community colleges and technical schools, public health agencies, planning agencies, sustainability agencies

    b. Community Partners – Neighborhood and community associations, business improvement districts, watershed groups, friends of parks, urban forestry advocates, local businesses, and garden clubs

2. **Build Relationships** – work with partners to identify common mutually beneficial goals

3. **Leverage Funding Opportunities** – funds can be utilized from partnerships with departments such as water providers, stormwater utilities, and watershed and environmental groups

4. **Identify Green Infrastructure Opportunities** – strategically plan for location(s) of green infrastructure in park that will maximize benefits

    a. Capture runoff, target hard surfaces, take advantage of areas with infiltration potential, and protect riparian areas and floodplains

5. **Plan for Maintenance** – define roles and responsibilities, perform maintenance and repairs

    a. Create a memorandum of understanding (MOU) to define role and responsibilities of the agencies, ensure optimal performance of park/green infrastructure facility, engage community service organizations, and recognize potential for green jobs

6. **Undertake High-Visibility a Pilot Projects** – Consider selection one or more high-visibility pilot sites to gain support from community to implement more green practices

    a. Opportunities to advertise the purpose and benefits of the projects, highlight community partnerships, donors, and volunteers involved in the application of the project.

Useful Resources

- City Parks, Clean Water: Making Great Places Using Green Infrastructure Trust for Public Lands 2016
- Tools, Strategies and Lessons Learned from EPA Green Infrastructure Technical Assistance Projects USEPA 2015
- How Cities Use Parks
- for Green Infrastructure American Planning Association, City Parks Forum
- Green Jobs in Your Community USEPA
- Green Infrastructure Opportunities that Arise During Municipal Operations USEPA 2015
- Greenforce Initiative Jobs for the Future 2016

ACTION	BENEFIT TO PARKS
Convert turf areas with high maintenance requirements to bioretention areas or other naturalized areas	Reduces maintenance and other costs associated with the management of turf
Install cisterns or rain barrels to collect roof runoff for irrigation	Reduces potable or recycled water use
Install permeable pavement or pavers	Reduces runoff, pavement maintenance, and use of deicers
Amend soils to improve infiltration	Eliminates standing water and mosquito breeding habitat
Install bioretention in underutilized perimeter areas	Reduces runoff and flooding and beautifies low use landscaped areas
Include educational signage describing BMPs and stormwater impacts	Creates opportunities for environmental education
Install green roofs	Increases lifespan of roof, lowers energy cost, and manages stormwater
Remove unnecessary impervious surfaces	Reduces runoff and decreases erosion

These green infrastructure actions can help park agencies meet one or more of the following goals and priorities, including:

- Enhancing park aesthetics with natural drainage.
- Providing recreational opportunities in underserved communities.
- Meeting the demand for better park features.
- Improving drainage in low-lying areas.
- Reducing Landscaping and facility maintenance
- Improving the quality of compacted urban soils.
- Providing habitat for ecological diversity.
- Sharing costs among agencies.
- Providing ideal locations for green stormwater management.

This summary was adapted from:

Green Infrastructure in Parks: A Guide to Collaboration, Funding and Community Engagement

U.S. EPA, Office of Water – June 2017

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APPENDIX F: STORMWATER MANAGEMENT

Site Stormwater

Despite these regulations, municipalities must provide additional measures to further protect watersheds and also provide protection from off-site development activities that may affect downstream watersheds, natural resources, and property. The ACT 167 ordinance in conjunction with the Stormwater Management Ordinance and MS-4 requirements of Westtown Township provide a comprehensive program for the management of stormwater runoff and provide reasonable regulation of development and construction activities which have the potential of causing accelerated erosion and the protection of the waters of the Commonwealth.

Municipalities must be vigilant in the enforcement of these regulations, and in conjunction with county, state, and federal agencies, ensure that the entire watershed is protected through the use of reasonable practices, consistent design guidelines, enforcement authority, and the distribution of the financial burden to ensure that all stakeholders play an important role in the protection of natural resources.

Trail improvements for parks are primarily considered linear projects and typically result in minimal earth disturbances and a minor increase in impervious area in relation to the overall project sites. However, in accordance with municipal requirements, projects that propose an increase in impervious area beyond 5,000 square feet require management of stormwater runoff to prevent degradation of receiving waters.

Due to the increase in stormwater runoff rate and volume from the proposed impervious areas, runoff from linear projects is best mitigated by means of non-structural stormwater management Best Management Practices (BMPs) such as vegetative filter strips, vegetative plantings, installation of amended soils, impervious area disconnection, and retentive grading. For areas of higher amounts of runoff, small scale stormwater management facilities can be used to promote infiltration and improve water quality such as infiltration trenches/swales and rain gardens, provided that on-site soil conditions are suitable for such facilities.

Trail segments are located in a variety of soil conditions including areas adjacent to wet ponds, wetlands, wooded areas, steep slopes, and other natural resources limiting the available locations to provide structural stormwater infiltration or detention facilities. With consideration of these limitations, it is recommended that the consultant work closely with the municipality in the layout of the trail system and utilize creative stormwater management solutions that complement the surrounding topography and reduce concentrated flow areas by providing non-structural BMPs wherever possible. The approach should include an analysis of High Priority Avoidance Areas such as ponds and wetlands, incorporate Low Impact Development (LID) and BMP techniques, and implement non-structural BMPs with a focus on vegetation, impervious area disconnection, evapotranspiration, and water quality improvements. In addition, the long-term maintenance of such facilities should be a priority in considering the types of measures to be implemented into the project, as access to these areas may be limited due to the site features previously described.

Selected vegetative BMPs should primarily be low maintenance seed types such as Native Species, Wildflowers, Warm Season Meadow, with avoidance of turf where possible. This approach will minimize the amount and extents of mowing, reducing long term costs, while maximizing the water quality benefit and aesthetic appeal of the park. Where turf is necessary, amended soils could be utilized to nourish the proposed vegetation, permit runoff filtration, and provide void ratio/holding capacity to allow runoff to be evapo-transpirated by plant up-take. Regardless of the approach, underlying soil conditions and surrounding natural resources should be considered in the design.

Where larger impervious surfaces are proposed such as roof or paved areas, runoff should be managed at the source to improve water quality and reduce runoff velocities leaving the immediate area in a non-concentrated fashion. Such improvements could incorporate rain-barrels, roof disconnection, low impact energy dissipaters, perimeter planted/stoned areas, or other features that complement the natural characteristics of the surrounding area and avoid larger structural stormwater management facilities wherever possible.

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APPENDIX G: PENNSYLVANIA NATURAL DIVERSITY INVENTORY (PNDI) REPORT

Introduction

The Pennsylvania Natural Diversity Inventory Environmental Review Tool (PNDI ER Tool) enables the public to perform online PNDI searches for potential impacts to threatened, endangered, special concern species and special concern resources in PA. Anyone including property owners, consultants, project planners and PA DEP or PA CCD staff can access the tool for PNDI project screening.

The PNDI ER Tool is used prior to submitting permit applications to DEP or during any project pre-planning phases. The user performs the search online using the ER Tool, prints the results from the search (called "PNDI Environmental Review Receipt") and follows the instructions on the receipt. For more information about the receipt results and what they mean, please visit the PNDI Receipt page.

In order to adequately provide for the protection of special concern species and resources while also reducing the number of false hits when conducting PNDI searches, it is important that the correct project area and type is entered into the PNDI ER Tool. If you believe you have entered the information incorrectly, please rerun the search.

Large Projects

Some projects are too large to be drawn in the PNDI Environmental Review Tool and are therefore called "Large Projects." To find out if your project is a Large Project, please visit the Large Project Information Page.

Early Coordination

Because the Environmental Review Tool is easily accessible to the public, it is recommended that PNDI coordination be completed prior to project development and submission of any permit applications. During instances when the PNDI search indicates potential impacts, early consultation with the proper special concern species or resource jurisdictional agencies (preferably prior to plan development) is crucial. Early consultation not only minimizes associated delays and cost, but also facilitates the integration of more effective conservation measures into project planning.

RESOURCE AGENCY JURISDICTION

A PNDI ER Tool web-site inquiry generates on-line search results concerning the potential impacts of a project to special concern species and resources. Four government agencies have jurisdiction over the protection of these resources:

U.S. Fish and Wildlife Service **Federally listed, proposed & candidate species** **Statute: Endangered Species Act of 1973 16 U.S.C. §§ 1531 et seq.**	**Pennsylvania Game Commission** PA state-listed birds and mammals Statute: Game and Wildlife Code 34 Pa. C.S.A. §§ 101 et seq.
Pennsylvania Fish and Boat Commission **PA state-listed fish, reptiles, amphibians, and aquatic organisms** **Statute: Fish and Boat Code 30 Pa. C.S.A. §§ 101 et seq.**	**Pennsylvania Department of Conservation** **and Natural Resources** PA state-listed plants, natural communities, terrestrial invertebrates, and geological features Statute: Wild Resources Conservation Act 32 P.S. §§ 5301 et seq.

Source: http://www.gis.dcnr.state.pa.us/hgis-er/PNDI_Introduction.aspx

1. PROJECT INFORMATION

Project Name: Oakbourne Park Master Plan Project
Date of Review: 1/7/2021 04:04:44 PM
Project Category: Recreation, Other
Project Area: 160.45 acres
County(s): Chester
Township/Municipality(s): WESTTOWN TOWNSHIP
ZIP Code:
Quadrangle Name(s): WEST CHESTER
Watersheds HUC 8: Lower Delaware
Watersheds HUC 12: Chester Creek
Decimal Degrees: 39.937075, -75.572178
Degrees Minutes Seconds: 39° 56' 13.4710" N, 75° 34' 19.8400" W

This is a draft receipt for information only. It has not been submitted to jurisdictional agencies for review.

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	Potential Impact	MORE INFORMATION REQUIRED, See Agency Response

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

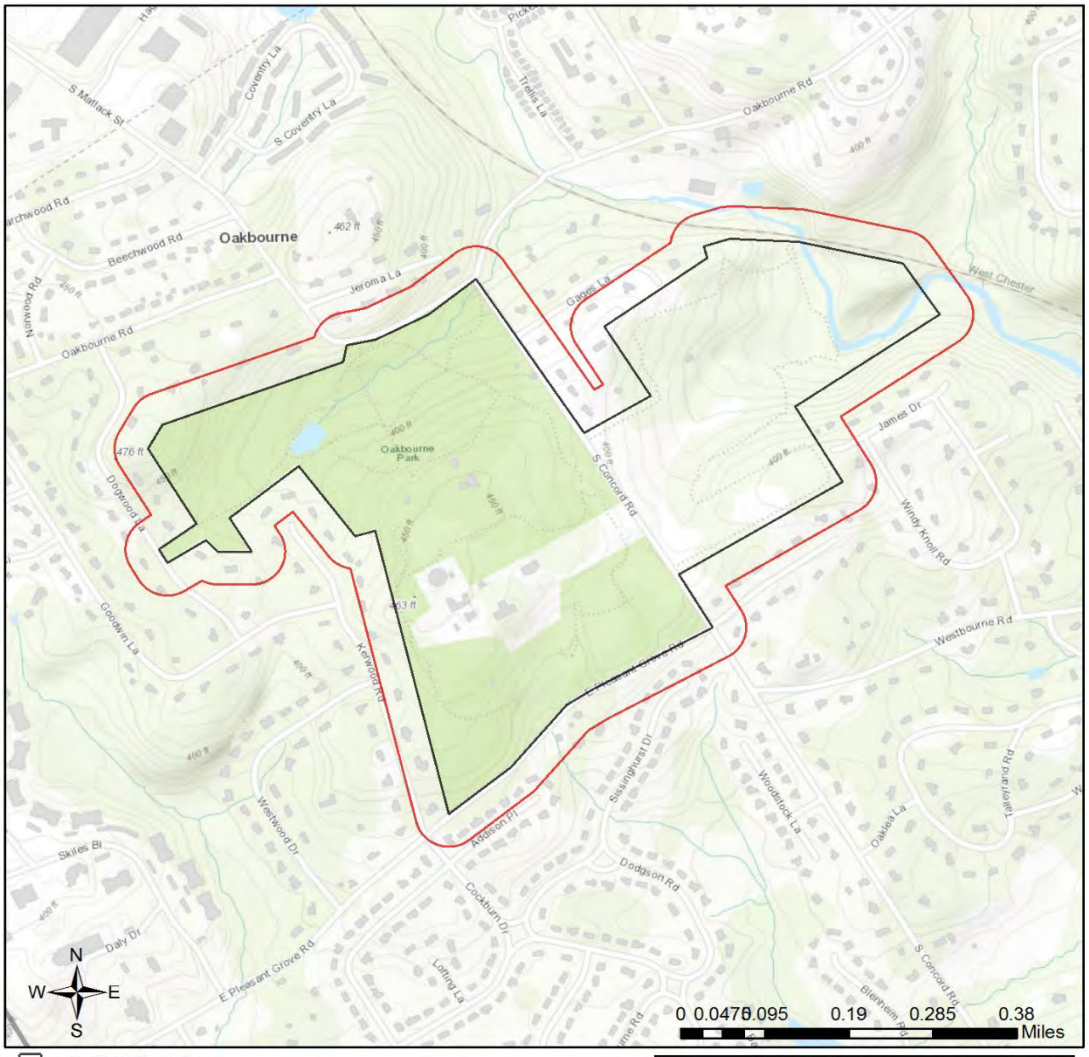
Oakbourne Park Master Plan Project

Project Boundary

Buffered Project Boundary

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China

Oakbourne Park Master Plan Project



Project Boundary

Buffered Project Boundary

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

RESPONSE TO QUESTION(S) ASKED

Q1: Accurately describe what is known about wetland presence in the project area or on the land parcel by selecting ONE of the following. "Project" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected -- either directly or indirectly -- by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur.
Your answer is: The project area (or land parcel) has not been investigated by someone qualified to identify and delineate wetlands, or it is currently unknown if the project or project activities will affect wetlands.

Q2: The proposed project is in the range of the Indiana bat. Describe how the project will affect bat habitat (forests, woodlots and trees) and indicate what measures will be taken in consideration of this. Round acreages up to the nearest acre (e.g., 0.2 acres = 1 acre).
Your answer is: The project will affect 1 to 39 acres of forests, woodlots and trees.

Q3: Is tree removal, tree cutting or forest clearing of 40 acres or more necessary to implement all aspects of this project?
Your answer is: No

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are valid for two years (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies strongly advise against conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission
RESPONSE:
No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources
RESPONSE:
No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission
RESPONSE:
No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service
RESPONSE:

Information Request: Conduct a Bog Turtle Habitat (Phase 1) Survey in accordance with USFWS Guidelines for Bog Turtle Surveys (April 2020). Evaluate all wetlands within 300 feet of the project area, which includes all areas that will be impacted by earth disturbance or project features (e.g., roads, structures, utility lines, lawns, detention basins, staging areas, etc.). IF THE PHASE 1 SURVEY IS DONE BY A QUALIFIED BOG TURTLE SURVEYOR (see https://www.fws.gov/northeast/pafo/endangered/surveys.html): 1) Send positive results to USFWS for concurrence, along with a project description documenting how impacts will be avoided. OR, conduct a Phase 2 survey and send Phase 1 and 2 results to USFWS for concurrence. 2) Send a courtesy copy of negative results to USFWS (label as "Negative Phase 1 Survey Results by Qualified Bog Turtle Surveyor: USFWS Courtesy Copy"). USFWS approval of negative results is not necessary when a qualified surveyor does the survey in full accordance with USFWS guidelines. IF THE PHASE 1 SURVEY IS NOT DONE BY A QUALIFIED SURVEYOR: Send ALL Phase 1 results to USFWS for concurrence, and if potential habitat is found, also send a project description documenting how impacts will be avoided. As a qualified bog turtle surveyor, I _____ (name) certify that I conducted a Phase 1 survey of all wetlands in and within 300 feet of the project area on _____(date) and determined that bog turtle habitat is absent.

_____(Signature)

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, upload* or email* the following information to the agency(s). Instructions for uploading project materials can be found here. This option provides the applicant with the convenience of sending project materials to a single location accessible to all three state agencies. Alternatively, applicants may email or mail their project materials (see AGENCY CONTACT INFORMATION).

Check-list of Minimum Materials to be submitted:
____Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.
____A map with the project boundary and/or a basic site plan (particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)
In addition to the materials listed above, USFWS REQUIRES the following
____SIGNED copy of a Final Project Environmental Review Receipt

The inclusion of the following information may expedite the review process.
____Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)
____Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at https://conservationexplorer.dcnr.pa.gov/content/resources.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

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APPENDIX H: FUNDING SOURCES

Funding sources change frequently in terms of type, grant amount, and the priorities of the funding organization. The following list is presented as links to the current online resources.

Key Pennsylvania Grant Summary

				Required Match Levels			
Grant / Funding Source	**Grant / Funding Source**	**General Scope / Improvement Work**	**Realistic Grant Ceiling**	**State**	**Local**	**Application Timeframe**	**Who Can Be the Grantee**
DCED (CFA)	Greenways, Trails and Rec. Program	Projects involving development, rehabilitation and improvements to public parks, recreation areas, greenways, trails, and river conservation	$250,000	85%	15%	2/1 – 5/31	C/M N A
DCED (CFA)	Multimodal Transportation Fund	Projects involving development, rehabilitation, and enhancement of transportation assets to existing communities, streetscape, lighting, sidewalk enhancement, pedestrian safety, connectivity of transportation assets and transit-oriented development	$250,000	70%	30%	3/1 – 7/31	C/M N A
DCED	Marcellus Legacy Fund	Projects involving acid mine drainage abatement, watershed restoration, gas well management and plugging, development and rehabilitation of greenways and recreational trails, sewage treatment projects, and replacement and repair of deteriorated bridges in municipalities with unconventional gas wells	$300,000	85%	15%	2/1 – 5/31	C/M N A
DCNR	Community Conservation Partnership Program (C2P2)	Projects involving planning, acquisition and development of public parks, recreation areas, motorized/non-motorized trails, river conservation and access, and conservation of open space	$200,000	50%	50%	1/15 – 4/15	C/M N A
DCNR	Riparian Forest Buffer Program	Projects involving landowner outreach, buffer design, site preparation and buffer installation, plant materials and tree shelters, and short-term maintenance	Unknown	50%	50%	Due 12/29	C/M N A
DEP	Growing Greener Environmental Stewardship Fund	Projects involving the development of multipurpose trails, greenways, and parks in our communities	Unknown	85%	15%	5/14 – 7/13	C/M N A
PECO	PECO Green Region Open Space Program	Projects that preserve, protect, and improve public spaces such as updating open space plans, habitat improvements, including planning, installation, and land acquisition costs.	$10,000	50%	50%	10/15	C/M N A

Legend: C/M=County/Municipal; N=Non-profit; A=Authority

State and Federal Funding

Recreation, Parks, Trails, and Conservation

- Finding the Green: A Guide to State Funding Opportunities for Conservation, Recreation & Preservation Projects
- Growing Greener Environmental Stewardship Fund: Community Conservation Partnerships Program Grants (PA Department of Conservation and Natural Resources), Watershed and Environmental Education Grants (PA Department of Agriculture), Drinking Water/Sewer Infrastructure Grants (PA Infrastructure Investment Authority)
- Keystone Recreation, Park & Conservation Fund: Community Conservation Partnerships Program Grants (PA Department of Conservation and Natural Resources), Historic Preservation Grants (PA Historical and Museum Commission), Library Grants (PA Department of Education)
- Land and Water Conservation Fund: LWCF funding is intended to protect national parks, areas around rivers and lakes, national forests, and national wildlife refuges from development, and to provide matching grants for state and local parks and recreation projects. LWCF Success in Pennsylvania In 2020, the LWCF was made permanent and fully funded by an Act of Congress. However, the money must still be appropriated annually in the United States budget. With a minimum of 40% of the fund to go to stateside assistance, the LWCF has the potential to provide much more assistance than ever since it was first adopted in 1064. Pennsylvania has already seen an increase in this source of funds enabling the Commonwealth to award up to $1.5 million grants for park acquisition, development, and revitalization.
- https://www.usda.gov/topics/farming/grants-and-loans -U.S. Department of Agriculture has several hundred funding sources
- PA Council on the Arts: Arts and Culture Grants
- PA Conservation Reserve Enhancement Program (CREP)
- PA Department of Community and Economic Development
  Variety of technical assistance programs and funding opportunities including: Greenways, Trails and Recreation Program and Watershed Restoration and Protection Program, Multimodal Transportation Fund, Flood Mitigation Program (FMP), H20 PA (Flood Control Projects, Unsafe Dam Project, and Storm Water Projects), Sewage Facilities Program (SFP)
- PA Department of Transportation: Transportation Grants
- PA Fish and Boat Commission: Fishing, Boating and Aquatic Resource Conservation Grants
- PA Land Trust Association: Conservation Easement Assistance Program
- The Center for Rural Pennsylvania: Research Grants
- The Pennsylvania Historical and Museum Commission (PHMC)

  Multiple funding programs are available to nonprofit organizations and local governments. Tax credits are available to owners of certified historic buildings in income producing use. There are no grant or tax credit programs available to private homeowners. This section provides information about each program and type of grant and tax credit.

Chester County Funding

The Commissioners of Chester County, Pennsylvania offers two distinct programs that provide funding to municipalities and non-profit land conservation organizations to permanently preserve significant natural, recreational, agricultural, historic, and cultural land resources; enhance public access to those lands; provide public benefit; and implement County and municipal land use policies. The programs are administered by the Department of Parks and Preservation.

- Municipal Program
- Acquisition Grants
- Park and Trail Improvement Grants
- Conservancy Program
- Acquisition Grants
- Public Benefit Improvement Grants

https://www.chesco.org/DocumentCenter/View/52293/Round-33-Manual?bidId=

Athletic Grants and Foundations

- Finish Line Youth Foundation: Program Development, Facility Improvement and Emergency Assistance Grants
- National Football League Grassroots Program: Capital Field Improvement Grants
- Target: Youth Soccer Program Development Grants
- Tony Hawk Foundation: Skatepark Grants
- United States Golf Association: Junior Program Development Grants
- US Soccer Foundation: Program Development and Field Improvement Grants
- National Gardening Association: School and Youth Garden Program Development Grants

National Recreation and Park Association

National Recreation and Park Association - The National Recreation and Park Association (NRPA) periodically posts information about grant and fundraising opportunities that are available for park and recreation agencies and affiliated friends' groups and 501(c)(3) nonprofits.

Independent Fundraising Resources

When looking for funding and grants, there are many resources available on the Internet. Below are just a few suggestions on where to start your research.

1. PA Community Foundations - A community foundation uses donated funds to establish and grow an endowment to benefit a specific geographic area. The interest earned from the endowment supports the foundation's general grants program, as well as its operating expenses. People with significant resources and philanthropic interests, but who do not wish to operate their own grantmaking process, often establish "donor advised funds" through their area community foundations specifying the types of charitable activities their funds will support, as well as how active they will be in grant award decisions. The community foundation invests and manages the donated funds and administers all aspects of the grantmaking. Community foundations support many types of activities.
2. Foundation Center: Provides both training and research information on corporate and foundation grant programs. The grants database is a collection of thousands of grants.
3. GuideStar: An excellent source of IRS 990 forms for foundations and other nonprofit organizations.
4. Chronicle of Philanthropy: The Chronicle is a newspaper for nonprofit news publishing, fundraising trends, resources, and recent grants.
5. Crowdfunding Toolkits.
6. Nonprofit Times: Nonprofit management newspaper.
7. Hoovers: Profiles millions of U.S. companies. It is a great source for employee contact information.
8. Fortune Magazine: A resource for identifying companies by state and industry.
9. Leadership Directories
10. Google, Yahoo Finance, and other general search engines.
11. Newspapers and magazines like the Wall Street Journal, Newsweek, New York Times.

Accessibility – Sources of Information

- PRPS Inclusion Task Force
- Pennsylvania Park Maintenance Institute
- Model Aquatic Health Code (MAHC): An All-inclusive Model Public Swimming Pool and Spa Code
- National Center on Accessibility
- National Recreation and Park Association
- National Recreation and Park Association: Embracing
- Access & Inclusion to Succeed
- Temple University Collaborative: Community Inclusion Resources

APPENDIX I: 2002 OAKBOURNE TREE STEWARDSHIP PLAN

FOREST AND TREE STEWARDSHIP PLAN

for

Oakbourne Park

Westtown Township
Pennsylvania

This natural forest addressed by this Plan
is located on this historic property and covers 49 acres, more or less.

Authors:

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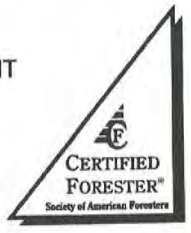


Forest and Tree Stewardship Plan
Oakbourne Park

CONTENTS

Forest and Tree Stewardship Plan

Oakbourne Park

Westtown Township

Part 1 — INTRODUCTION

Owners Objectives

"To improve the health and condition of the biomass in Oakbourne Park in order to maintain the Arboretum and natural woodlot for future generations of Westtown and area residents and to provide recreation opportunities in Oakbourne Park."

Location of Property

This 94 acre tract is located in Westtown township, bounded by South Concord Road on the East; Oakbourne Road on the North; East Pleasant Grove Road on the South; and on the West side by properties along Kerwood Road and Dogwood Lane. Topography is rolling hills and valleys with the highest elevation at 474 feet above sea level along the ridge in the far Northwest corner of the tract. Just to the Southwest of the Mansion, the large white Philadelphia Suburban Water Tank near the Gaudenzia buildings is 460 feet in elevation. The lowest elevation on the property is 343 feet at the junction of South Concord Road and Oakbourne Road where the unnamed Run that drains the Pond exits the property. The surface area of the Pond is 1.34 acres in size.

Native forests comprise about 49 ± acres with the balance in buildings, parking lots, grassland, and the widely scattered trees in the Arboretum.

Importance of the Property within the Community

The Westtown Township purchased Oakbourne in 1974, 35 acres with its historic Mansion, Water Tower, and other buildings; and acquired additional land from the state and a developer over the next 10 years to create a township park of about 94 acres. In recent years it has been widely used by the public. Along with serving as a focal point for the park, Oakbourne Mansion is home to four craft shows a year, and the park hosts meetings, concerts, private banquets, and a variety of other public events. The roads and trails are used daily by workers, joggers, nature enthusiasts, family picnickers, and older folks for pleasurable outings.

In our six days of field work, we talked to a number of trail users, all of whom are "regulars" at Oakbourne, some who visit three or four times a week. The large size of the Park and its trails permit these folks to have a mostly private outdoor experience. This 94-acre Park and its nearly 50 acres of woods, plus the Copeland Tract across the Road, are a unique resource in a rapidly urbanizing area. We are sure the public and residents wholeheartedly agree that these tracts need to be kept in a healthy and natural situation. There are few such public areas like Oakbourne in the nearby vicinity.

Part 2 — BRIEF FOREST DESCRIPTION

Background

The forests of the Oakbourne Park are typical of those called "Eastern Mesophytic Hardwood Forests." Mesophytic meaning "**well balanced moisture**." This type of forest is considered to be one of the most biologically diverse in the nation. They forests are characterized by a broadly diverse collection of tree species and a full range of age/size classes from seedlings to mature older trees. But, because tree and plant communities are in constant change, the present Oakbourne forests do not closely resemble what was here 320 years ago in William Penn's time (1682). Nevertheless, many of those same species are still present, and in sufficient numbers (even though presently threatened by increased human activities) to be able to define what needs to be done to keep them healthy and growing. The specific data gathered and compiled are shown in the **APPENDIX D — Woodland Analysis**.

With a few exceptions, these Oakbourne forests are relatively young, probably most having their beginnings not more than 120-130 years ago, perhaps about the time the Mansion was built. We know this from several clues:

- an actual tree ring growth count made on a large downed tree log along Old Colony Road by the Run from the pond;
- known growth rates of the dominant forest tree in the Park (**yellow-poplar**);
- and the conditions that are necessary for **yellow-poplar** to become established and grow to dominance.

What follows is a careful reading of the sampling data. Historical records, known or available, may show this to be incorrect, but our best feeling is that this forest had its beginnings on cleared or mostly open lands about 120-130 years ago.

There were a few scattered, large white and black oaks here and there at that time. The largest of these "survivors" are a **white oak** (48 inches in diameter), and an equally large **black oak** both located along the western property boundary not far North of East Pleasant Grove Road. Both trees are probably "pushing" 225 - 250 years of age. There were ten trees sampled in the **Pleasant Grove Tract** that were over 40 inches in diameter.

Current Situation

The "far-and-away" dominant tree of the present forest is the **yellow-poplar**, comprising 59% of all the trees present and living (see **APPENDIX D — Woodland Analysis**). It is the tallest Eastern forest tree (up to 150 ft.) and will live in excess of 200 years. **Yellow-poplar** is very intolerant of shade, so in order for it to become established, grow, and become dominant, it must have nearly full sunlight. Thus our feelings that this present forest got its start on open land.

The second most numerous tree is the **Norway maple** (14%), a non-native, shade-tolerant, and a very aggressive invader. If not controlled, it can, over time, eventually take-over stands to the detriment of desirable natives. Such an event would also greatly adversely affect the biological diversity of the area. Not only would one tree species dominate the area but also all other flora and fauna would be affected.

The other members of the top five are **white ash**, **white oak**, and **mockernut hickory**, all desirable native trees common to these Eastern Forests.

The trees of the Oakbourne Forests:

Five **(5) species** comprise **87%** of all the trees now present.

Yellow- poplar
Norway maple
White ash
White oak
Mockernut hickory

Sixteen **(16) species** present comprise only **13%** of the stand composition.

(See **APPENDIX D — Woodland Analysis**.)

Tracts Inventoried

For ease in sampling, and to help determine whether there are differences within the Oakbourne forests, the Consultant arbitrarily designated three different tracts for sampling and study. They are:

Main Tract — (**16.5 acres**) bounded by Concord Road; Oakbourne Road; the entrance to the Mansion; and Old Colony Road.

Pond-West Tract — (**22.1 acres**) bounded by Old Colony Road on the East and the balance of the forest West of that road to the property boundaries and up to the Picnic Shelter.

Pleasant Grove Tract— (**10.6 acres**) balance of the forested areas South of the Gaudenzia property and North of East Pleasant Grove Road.

A total of **49.2 acres** (more or less) of native forest, or about 52% of Oakbourne Park, is now forested West of South Concord Road.

Similarities and Differences

An examination of the data in the **Woodland Analysis APPENDIX D — Tract Comparisons** shows that, for the most part, almost all of the Oakbourne Forest Tracts had their beginnings at about the same time; have the same mature species present; and, with the exception of several large white oak trees, have similar average diameters within the species. Some differences do occur between tracts, however, some of these are:

- **Two small groups of younger, rapidly growing yellow-poplar** — one Northwest of the Pond (**Pond-West Tract**) and the other North and East of the unimproved road that winds through the **Pleasant Grove Tract**.

- **Invasive Plants** — Laurie Albrecht (Longwood Gardens) spoke of the profusion of the invasive plants on the Oakbourne property. The great majority of these are North of the Entrance Road to the Mansion in the **Main Tract**. This is not surprising, given that this is the site of much human activity and that some of the worst non-native invasives (**black jetbead**, **pachysandra**, and **Norway maple**) were originally planted as ornamentals around the Mansion. For a complete listing of these invasive plants and their location see the APPENDIX **D — Woodland Analysis**.

- **Hazard Trees** — Most all of the trails presently used by the public are located in the **Main Tract** and a cursory examination showed some **Hazard Trees** along these trails. **This plan does not deal with hazard trees in detail**, except to point out that some hazard trees were noticed during the inventory. A study should be done soon with corrective action taken as needed to remove any hazards related to trees trees.

  Photographs of **some** hazard trees that were noted during the inventory in Oakbourne Park are shown in the **APPENDIX F — Hazard Trees Observed**. There are also a few dangerous trees in the Arboretum, along the paved road, and unimproved roads that could harm Park visitors, Park staff, mowing contractors, and property.

Size and Age Classes Ranges Are Limited

As mentioned earlier, one of the key characteristics of an Eastern Mesophytic Hardwood Forest is a full range of age/size classes present. As is the case in most other Southeast Pennsylvania forests, this attribute is lacking in Oakbourne Forest Tracts.

The regeneration plot data (**APPENDIX D — Woodland Analysis**) show that there are almost no desirable native tree seedlings now present and growing. And the plot data show that saplings and small pole sizes (up to 5 inches in diameter) are also lacking. This is due to a number of factors including: too many white-tailed deer present; periodic defoliation by Gypsy Moth and other insect larva; heavy concentrations of invasive non-native plants which take-over and crowd out desirable native species; and earlier cutting practices which may have eliminated some tree seed sources. This need to build a better stand structure will be dealt with in the **Recommendations**.

By and large, the present forest is healthy, and growing well on very productive ***Glenelg channery*** silt loam soils. This soil is among the best in Southeast Pennsylvania for growing trees. The stands are FULLY STOCKED to OVERSTOCKED, so there are plenty of trees present. For the long-term health and vigor of the forest, two things need to be done during the next decade:

1. **Control the invasive plants.** The non-native invasive plants are now a real and growing problem.
2. **Plant shade-tolerant native trees.** After invasive plant control is accomplished, begin to under-plant the stand with shade-tolerant desirable native trees (see **APPENDIX I — Pennsylvania Native Shade-Tolerant Trees**) to begin to build the stand-structure (seedlings/saplings/small poles) now lacking. At the same time, introduce (by plantings) some of the tree species not now present (i.e. oaks, hickories, beech, holly, etc.) to enhance the stand composition to build an even more diverse plant community.

And, for the **immediate protection of people and property** two additional things need to be done:

1. **Identify and remove hazard trees.** As soon as possible, identify, mark, and remove those trees or tree parts deemed to be hazardous in the areas of public use (along trails, roads, parking, Arboretum, and Mansion areas). This must be done to protect visitors, staff and other workers and limit/remove potential Township liability that hazardous trees might pose on this property. (See **APPENDIX F — Hazard Trees — A Reason for Concern)**
2. **Control trash dumping.** As might be expected, there is also some trash being deposited in Oakbourne forests, not yet serious, but, if unchecked, could reach much larger proportions. Studies show that presence of trash encourages more trash dumping. ***Trash Begets Trash.*** Most of the trash we observed is along the road through the **Pleasant Grove Tract** and along western boundary of the **Pleasant Grove Tract**, behind the homes on Kerwood Road. Debris ranged from piles of grass clippings to old tires; cinder blocks and bricks; discarded cans and tubs; a rusted wheelbarrow, one-half a fiberglass hot tub, and a mailbox, metal chairs, fencing, bed springs, to a smashed ceramic toilet, sewer tiles, teeter- totter and a rusted power lawn mower without a handle. A hot water tank and a washing machine with parts scattered near the trail leading from the Pond to Dogwood Lane. The present accumulation has grown over time, but could be easily cleaned up in a day or so. See **APPENDIX G — Photos—Trash Accumulation.**

Species of Special Concern

No ***threatened* or *endangered*** plant or animal species, as far as is known and observed, is present on the property. Care was taken during the fieldwork to look for any such specimens. See **APPENDIX E — Vegetation Observed in Tracts** for a complete listing of all plant species as tallied or observed.

At a meeting on February 12, 2002, Laurie Albrecht, (Longwood Gardens), spoke of the proliferation of **Invasive Plants** on Oakbourne, and mentioned the following species:

Common Name	Scientific Name	Common Name	Scientific Name
Barberry, Japanese	*Berberis thunbergii*	**Maple, Norway**	*Acer platanoides*
Bittersweet, Oriental	*Celastrus orbiculatus*	**Mile-a-Minute Vine**	*Polygonum perfoliatum*
Fern, Hay-scented	*Dennstaedtia punctilobula*	**Mustard, Garlic**	*Alliaria petiolata*
Jetbead, black	*Rhodotypos scandens*	**Olive, Autumn**	*Elaeagnus umbellata*
Knotweed, Japanese	*Polygonum cuspidatum*	**Pachysandra**	*Pachysandra terminalis*
Knotweed, Giant	*Polygonum sachalinense*	**Rose, Multiflora**	*Rosa multiflora*
Magnolia, Umbrella	*Magnolia tripetela*	**Stiltgrass, Japanese (Packing Grass)**	*Microstegium vimineum*

In our six days of field investigations in the forested tracts, we observed all of the above invasive plants. The **Umbrella Magnolia** and the **Hay-scented Fern** are both native species and do not pose a concern to the health and viability of the Oakbourne forest.

Worst Invasive Non-native Plants

Invasive non-native plants are a problem in the forested tracts at Oakbourne Park. **Presently, the six plants most troublesome and numerous are these:**

Common Name	Scientific Name	Common Name	Scientific Name
Jetbead, Black	*Rhodotypos scandens*	**Maple, Norway**	*Acer platanoides*
Knotweed, Japanese	*Polygonum cuspidatum*	**Mustard, Garlic**	*Alliaria petiolata*
Knotweed, Giant	*Polygonum sachalinense*	**Pachysandra, Japanese**	*Pachysandra terminalis*

All of these must be dealt with soon and most certainly within the next 3 years. If these invasive species are not managed, the forest will be adversely affected, not only in species diversity, but also in size class distribution, loss of scenic diversity, and loss of biological diversity.

When biological diversity is affected adversely, the rich numbers and variety of flora and fauna will be adversely affected. In simple terms— without control of invasives, eventually there will be fewer numbers and less variety of native mammals, birds, insects, wildflowers, shrubs, trees, and other creatures and plants at Oakbourne Park. See **APPENDIX H — Control of Invasive Plants.**

Part 3 — ARBORETUM

Originally, the **Forest and Tree Stewardship Plan** was to be limited to the native forests on the property. But once the inventory began and after talking with Township Roadmaster Mark Gross, the Consultants realized that the **Arboretum** was a unique historical collection of trees. Apparently no record exists that lists the names of all the trees in the Arboretum on the greater Mansion grounds. Therefore we inventoried the Arboretum trees, recorded their names, and made a standard Arboretum grid map similar to the one used by **Scott Arboretum at Swarthmore College**. We noted the locations of the trees in a system of 250-foot square grid map.

See **APPENDIX J — Arboretum Map** and **APPENDIX K — List of Trees in the Arboretum**.

It is apparent that the Arboretum is a fine contemporary and historical resource for the Township. It is available for people who are interested in seeing how different trees might look in their yards, for observing which birds frequent which species of trees, or studying how to identify trees by their leaves, bark, or other features.

A total of **192 trees**, representing **59 tree species**, were inventoried in the Arboretum.

Once the new entrance road is completed, there is a fine opportunity to expand the number of trees and species in the Arboretum. There is adequate space to add many native trees, non-invasive exotic trees, and flowering trees to the grounds while preserving outdoor recreation opportunities. The unique resource provides a potential opportunity to provide educational programs, tours, brochures, and environmental training sessions associated with the present or expanded Arboretum. It is sure to be of interest to many visitors especially if the trees are identified by nametags.

Recommendations for the Arboretum

- **Place Arboretum style nametags*** with common and scientific names on each of the trees on the greater Mansion grounds.
  (*Nametags are approx. 3'' x 5'' — anodized aluminum, attached to the tree trunk with stainless steel screws equipped with springs allowing for tree growth.
- **Provide an Oakbourne Arboretum Check List Brochure** to interested visitors who wish to check-off trees as they learn to identify the trees by their common and scientific names.
- **Provide a plan for expanding the Arboretum by planting new trees**. For a truly scenic, educational, and an outstanding Arboretum, a **Plan** should be made with these needs in mind:
  - Plant trees in selected areas throughout the Mansion grounds.
  - Add a variety of trees native to SE Pennsylvania and non-invasive exotic trees known to grow and thrive in this USDA Planting Zone.
  - Plant trees to line both sides of the new entrance road in the style of the existing road.
  - Keep areas open for recreation gatherings and sports.
  - Design to provide groupings of trees to reduce the area in need of mowing and excessive maneuvering of the mowing equipment.
  - Reduce areas mowed to help reduce air pollution.

The Consultants would be pleased to bid on the fulfillment of any or all of these recommendations.

Part 4 — RECOMMENDATIONS — ACTIONS — TIMELINES

After six days of fieldwork, walking, and sampling the forests of **Oakbourne Park** and its **Arboretum**, the following actions are clearly needed to begin to restore these forests to a more natural, healthy situation, and to make them safer and more attractive to the visitors, users, nearby residents, and for the Township employees who work in the Park.

Westtown Township Management and Park Board Members should consider these **recommendations** for **Oakbourne Park** and decide on priorities for implementation and the timelines for any **actions** to be taken:

1. **Control the wild grapevine** infestation.
2. **Locate, mark, and remove hazardous trees** and tree parts in all areas used by the public and Township employees.
3. **Control invasive plants** using all appropriate measures that are prescribed by experts and with care to the public users.
4. **Begin underplanting shade-tolerant native trees** (as control of invasives is completed) to begin to rebuild stand structure. (i.e. age/size class distributions.....seedlings, saplings, poles, etc.)

The Consultants believe that the first two actions should begin concurrently and be accomplished **this 2002 – Summer / Fall** and during the **2002 — 2003 Winter** season.

2002 - Summer / Fall & 2002 – 2003 Winter

1. Control the wild grapevine. Control infestations to the North and West of the Pond; along the sewer right-of-way from the Pond up to Dogwood Lane; and to the immediate North and East of the unimproved road through the Pleasant Grove Tract. There is evidence of earlier control efforts, but the vines have since re-grown. This should be done by a 2 or 3 person crew (s) using Swedish Bush Axes, (machetes are too dangerous), and treating the "stumps" with ROUNDUP. Probably it will take a good week of work to get this job done.

2. Locate, mark, and remove hazardous trees. Employ an experienced Forester/Arborist to locate and mark hazardous trees, tree parts, and situations now present on the property in those area's (trails, roads, parking lots, picnic areas, Mansion) that are in use by the public and Westtown Township employees. A number of such trees were noted during the fieldwork and some photographic examples are provided in the **APPENDIX F**.

The work of locating, marking, and inventorying of the hazardous trees should be done by an expert Forester/Arborist with prior experience in the field. We have done this work and can provide examples of our recent work. There are many others also well qualified. The work of removing hazardous trees and correcting hazardous conditions should be done by an Arborist, Certified by the **International Society of Arboriculture**.

The hazard tree survey is best done prior to leaf-fall when dead trees and branches are easier to locate. Then the pruning and felling necessary can be done in the **2002-2003 Winter** season when there is less public use and the foliage is not a problem. Hazard trees constitute a serious problem that needs to be dealt with as soon as possible.

2003 - Spring —

3. Control invasive plants Arrange for a session with specialist (s) in herbicide use **to control invasive plants** to meet with the Park Board and take a field visit to view the situation at Oakbourne Park. With them, draft a plan of action to begin to control the many invasive plants now present on the property. The **Main Tract** just to the North of the entrance road contains the worst situation and should be dealt with early on. The major "offenders" here are:

Norway maple, black jetbead, pachysandra, and **garlic mustard**.

In the case of **Norway maple**, there are trees from seedling size up to 28 inches in diameter. Seedlings and saplings up to about 2 inches in diameter can be pulled or wrenched out by hand with weed wrenches. Any stems larger than 2 inches in diameter will need to be either deadened by injection, or cut and the stumps treated. Norway maple is a long-term control problem, especially along trails and other areas receiving heavy public use. Undoubtedly, a public education effort should be undertaken prior to any large control efforts! Norway maple is a fine shade tree along urban streets and in large lawns, but it will eventually take over a native forest in time.

Depending upon the priorities set, budgets, labor, and time available, control could take as long as two or three seasons in each of the three tracts. Some invasives, like **garlic mustard**, will always be present, given the hard seed coats laying over in the soil, and the ubiquitous sources of reinvasion. And as is usually the case with any plant control work, timing is always of the essence.
See **APPENDIX H** for the **Control of Invasive Plants**.

4. Begin underplanting shade-tolerant native trees

Once the control of invasives in any given tract is deemed sufficient, the last stage of forest improvement can begin. This will involve the underplanting of shade-tolerant native trees and shrubs to restore the age/size class situation (i.e. seedlings/saplings/poles, etc.) to as normal a circumstance as possible, as well as introduce a few native species not now present such as:

hollies hornbeam hophornbeam witch-Hazel persimmon

(Refer to **APPENDIX I — Pennsylvania Native Shade-Tolerant Trees and Shrubs** for a more complete list.)

These should be planted at an approximate spacing of:
20´ x **25´** up to **25´** x **25´** or about 70-90 trees per acre.

One might ask:

"Why is this necessary when these forests are FULLY STOCKED to OVERSTOCKED?"

The answer is that white-tailed deer and invasive plants have either killed or "smothered" any desirable native tree seedlings; so this planting is necessary to get the next "crop" of young trees started that should have been there already had these circumstances not existed.

Readily visible deer trails and antler rubs indicate a large presence of deer. This makes it necessary to protect these newly planted seedlings from deer browsing. Use 5 ft. white Tubex, or similar product, for the first few years till the new trees emerge from the plastic tubes. A current very rough estimate of cost would likely run about $5 to $7 per seedling planted and protected with Tubex, or about $350 to $400 per acre when done by Park crews.

The Pennypack Ecological Restoration Trust of Bryn Athyn, PA has been doing this for more than 10 years and probably has the most experience in the rehabilitation of abused native forests. The consultant has worked with them and they are most willing to give advice and counsel on their experiences over the past decade.

Probably — given normal setbacks from time to time — a conservative estimate would be in the 15 to 20 year range to put Oakbourne's Forests back on the road to health and normal circumstances. The Consultants will be glad to be available at any time to answer questions, look at individual situations, and be of whatever help may be needed. Don't hesitate to ask or call for whatever is needed.

Part 5 —

To the best of our knowledge and capabilities, this Forest Tree Stewardship Plan contains:

- an accurate representation of the landowner's objectives for the property;
- an accurate assessment of the forest resources sampled and present on the Oakbourne Park Property and addressed in the plan;
- management recommendations in keeping with the landowner's interests and abilities, and with consideration of other natural resources present, and public use of this property.

Duane L. Green, Registered Professional Forester — July 15, 2002 — Date

GREEN LINE CONSULTANTS

Member of Society of American Foresters
Pennsylvania Council of Professional Foresters
Pennsylvania Forestry Association

Charles J. Newlon — July 15, 2002 — Date

Charles J. Newlon, Certified Forester

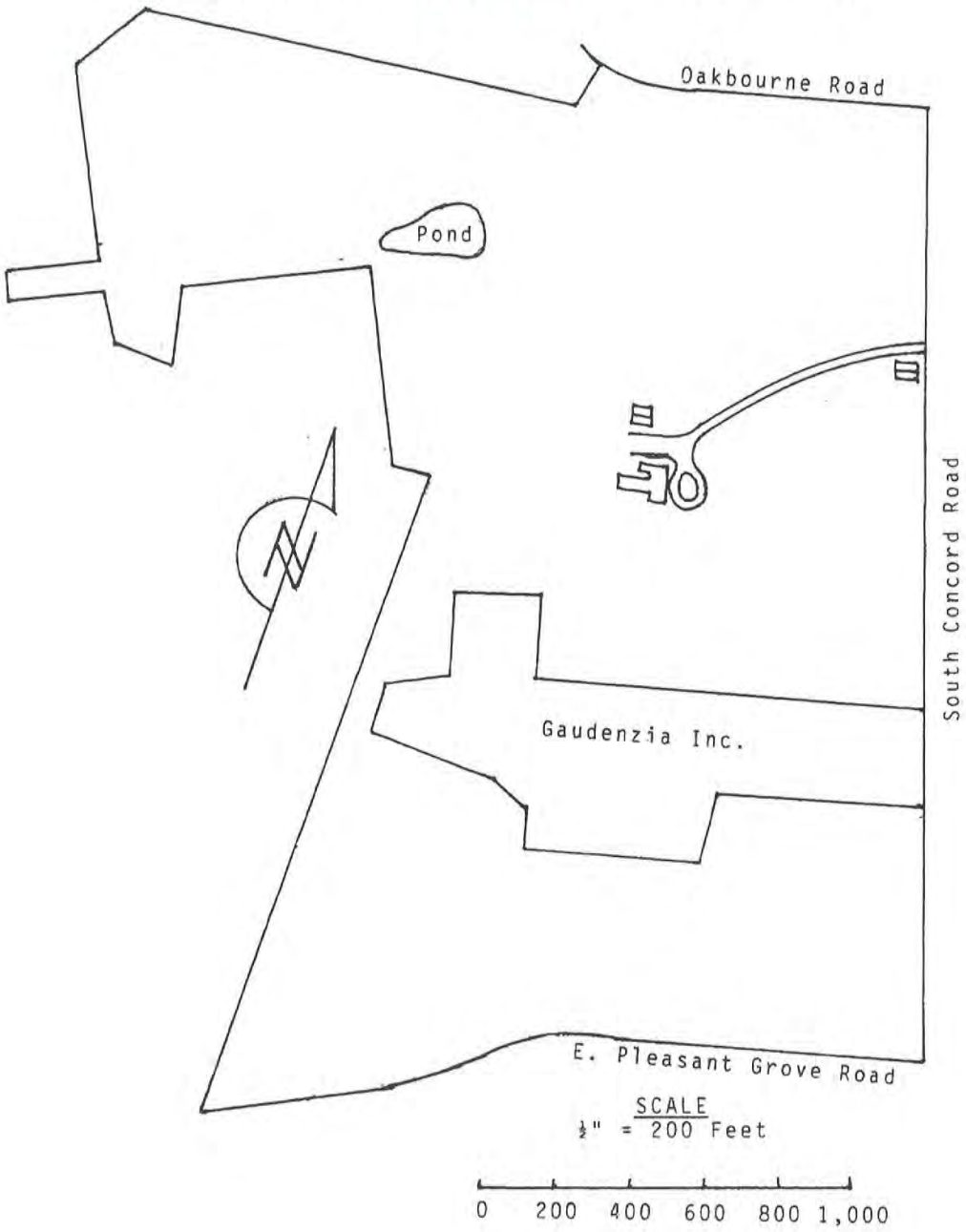
Consulting and Education Forester

Member of Society of American Foresters
International Society of Arboriculture
Society of Municipal Arborists

Oakbourne Park

Westtown Township

PROPERTY COVERED BY PLAN — APPENDIX A

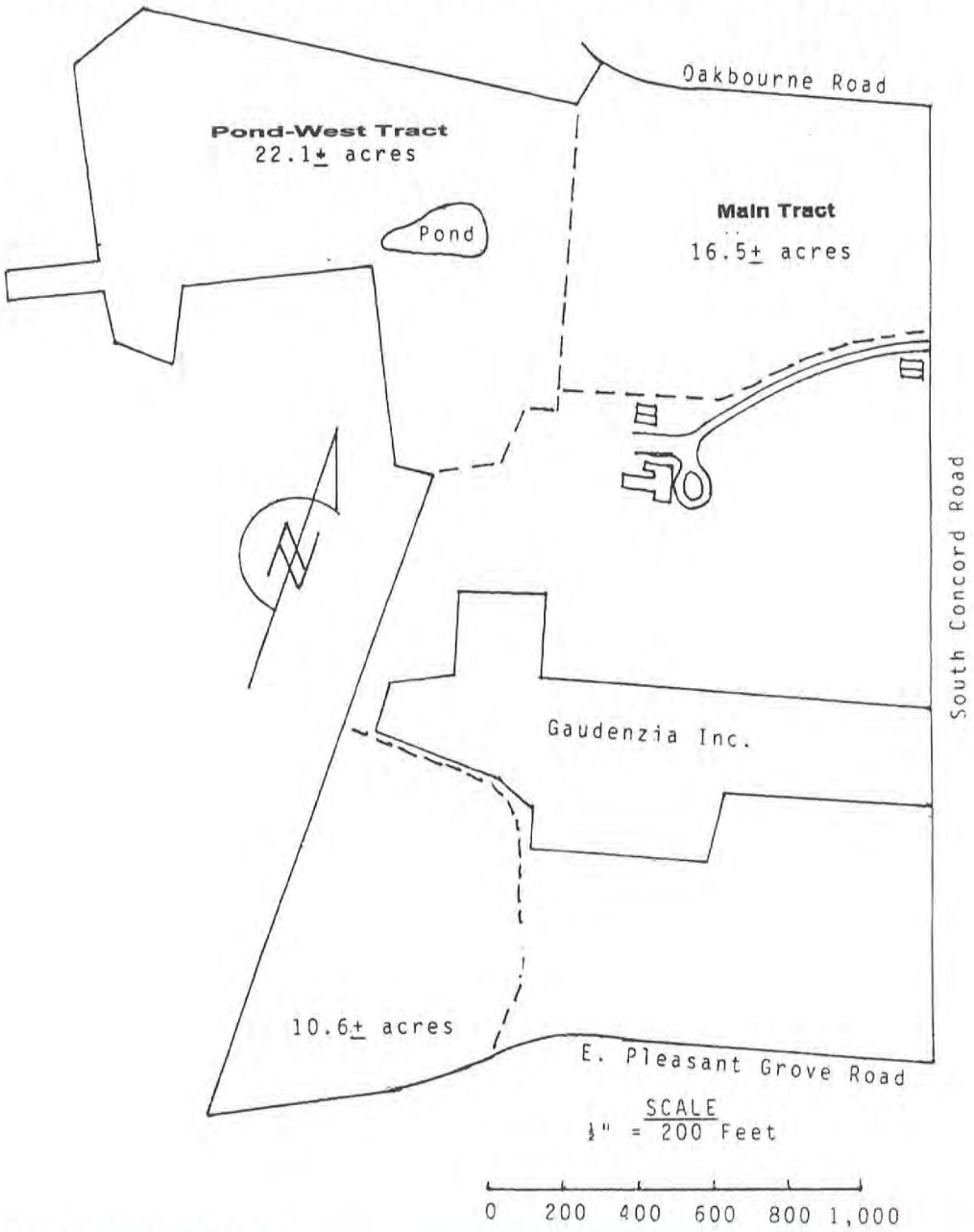


Oakbourne Park

Westtown Township

SAMPLING UNITS — APPENDIX B

A total of **49.2 +** acres of native forest, or about 52% of Oakbourne Park is in forest.



SOIL DESCRIPTION — APPENDIX C

CdA - Chester silt loam: 0 to 3% slopes: a nearly level soil with a deep profile; slightly to moderately eroded; moderately fertile; an excellent soil for tree growth.

Ch - Chewacla silt loam: a deep, moderately well-drained soil that occurs along streams & made up of sediments washed down from uplands: mostly free from stones; subject to occasional flooding, it is fair to good for tree growth.

GeB - Glenelg channery*silt loam: 3 to 8% slopes: a moderately deep well-drained soil of the uplands; permeability & fertility are moderate; this soil & the five other Glenelg soils that follow are excellent for tree growth & all are well-suited for growing Red Oak; White Oak; Black Oak; Yellow Poplar & Hickories.

GeB2 - Glenelg channery*silt loam: 3 to 8% slopes; moderately eroded; same description as the above soil, but with slightly less top soil; grows all of the trees listed above (GeB) plus Walnut.

GeC - Glenelg channery*silt loam: 8 to 15% slopes; very similar to the GeB soil listed above except steeper slopes; grows all of the trees listed above for the Glenelg soils.

GeC2 - Glenelg channery*silt loam: 8 to 15% slopes: moderately eroded: same description as the above GeC soil, but with less topsoil; grows all of the trees listed above.

GeC3 - Glenelg channery*silt loam: 8 to 15% slopes: severely eroded: the entire profile of this soil is shallow as a result of much erosion; gullies 1 to 3 feet deep can be common; due to the loss of much topsoil, it grows trees listed above, but growth rates are not as great as the four Glenelg soils listed above.

GeD3 - Glenelg channery*silt loam: 15 to 25% slopes: severely eroded: the entire profile of this soil is shallow as a result of much erosion: shallow gullies can be common in some area's: Grows all of the above trees, but with reduced growth rates.

MhE3 - Manor loam & channery*loam: 25 to 35% slopes: this soil is described as shallow to very shallow over bedrock; 40% to 60% of the soil profile is fragments of rock; it is steep, low in fertility & droughty; fair to poor for tree growth with windthrow as a continual problem.

Oakbourne Park is blessed with a great preponderance of Glenelg soils, among the very best for tree growth in SE Penna. An Oak, growing on these soils should be at least 75' tall at age 50. Yellow Poplar, the dominant tree now present, will do even better. Excellent sites!!

* The term "channery" is best described as a soil containing thin, flat fragments of sandstone, limestone, or schist as much as six (6) inches along the longer axis. A single piece is called a "channer."

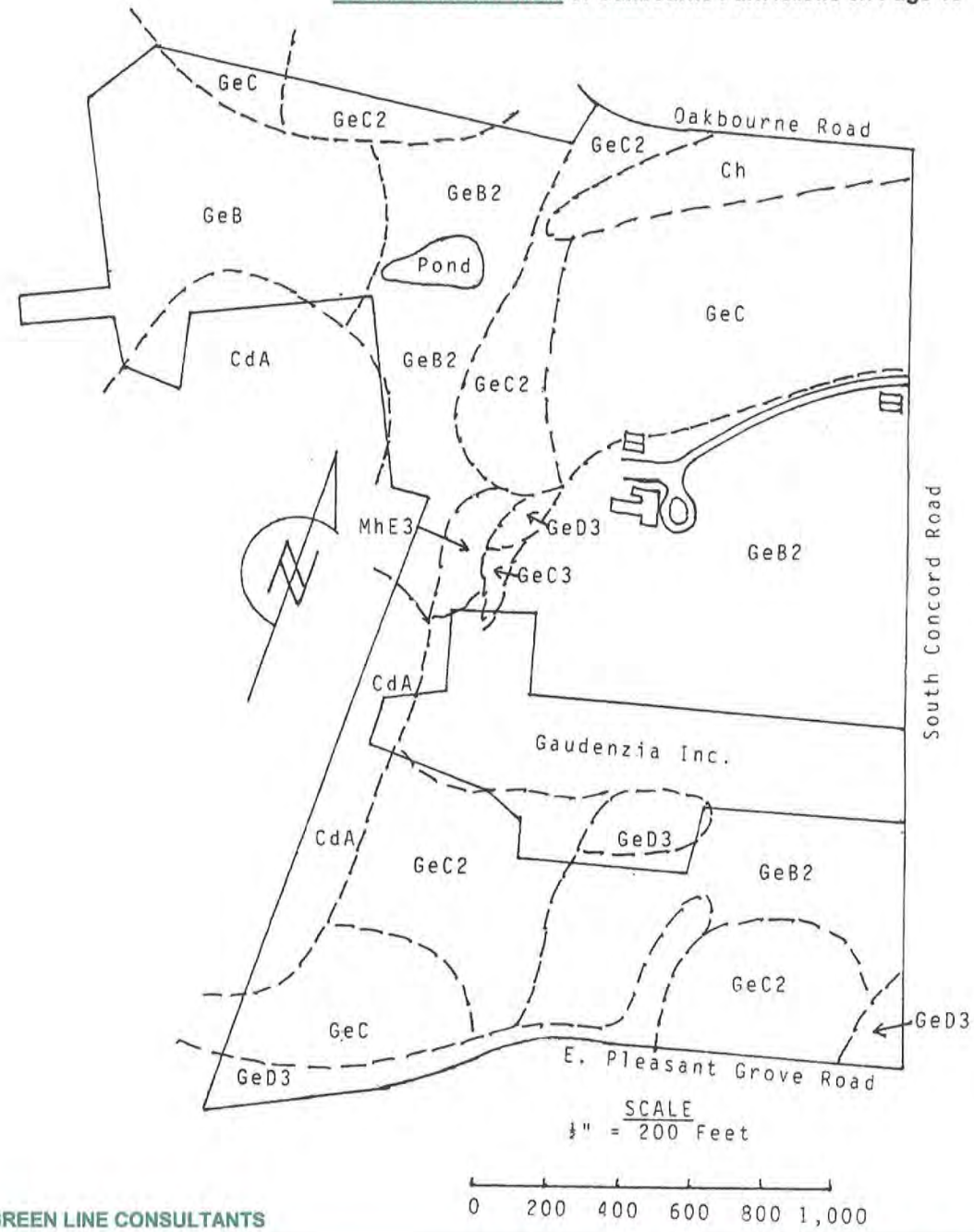
Oakbourne Park

Westtown Township

SOILS MAP — APPENDIX C

Chester and Delaware Counties, PA – Map # 46

SOILS DESCRIPTION **of Oakbourne Park** follows on **Page 15**



GREEN LINE CONSULTANTS

WOODLAND ANALYSIS — APPENDIX D

MAIN TRACT

16.5 acres

Yellow-Poplar — Norway Maple — White Oak — Mockernut Hickory

Total number of plots — **22 variable radius Prism plots** (10 factor).
Total number of trees tallied — **253 trees**.
Average Basal Area/acre = **115 sq. ft.**, ie. 253 ÷ 22 = 11.5 x 10 = 115 sq. ft.
Average diameter of all trees tallied = **18.90'' @ dbh**.
ie. 4,781 diameter inches ÷ 253 = 18.897'' in diameter @ breast height (**dbh**).
Diameter range of all trees tallied — from **2'' to 39 '' @ dbh**.
Overall Stand Stocking Level = FULLY STOCKED (**88%**) according to the Upland Central Hardwood Stocking Guide, or about 60 trees per acre.

SPECIES OCCURRENCE		% of TOTAL	AVERAGE DIAMETER	RANGE
YELLOW POPLAR	(121)	48%	20.56"	8" to 38"
NORWAY MAPLE	(49)	19%	11.59"	2" to 28"
WHITE OAK	(25)	10%	29.04"	19" to 35"
MOCKERN. HICKORY	(11)	4%	17.82"	12" to 28"
WHITE ASH	(11)	4%	16.09"	12" to 22"
RED MAPLE	(8)	3%	14.00"	10" to 22"
BASSWOOD (LINDEN)	(5)	2%	23.40"	16" to 27"
BEECH	(3)	1%	25.33"	16" to 35"
BLACK WALNUT	(3)	1%	22.33"	13" to 27"
NORWAY SPRUCE	(3)	1%	18.33"	11" to 31"
BLACK OAK	(3)	1%	13.33"	10" to 17"
SHAGBARK HICKORY	(3)	1%	11.33"	6" to 20"
BLACK GUM(TUPELO)	(2)	<1%	16.00"	12" to 20"
PAULOWNIA	(2)	<1%	14.00"	12" to 16"
SYCAMORE	(1)	<1%	16.00"	16"
JAP. FALSE-SAWARA	(1)	<1%	20.00"	20"
N. RED OAK	(1)	<1%	23.00"	23"
BLACK CHERRY	(1)	<1%	6.00"	6"
18 Species	(253)	100%	18.90"	2" to 38"

STAND STRUCTURE BY SIZE CLASSES:

Size Class	#	% of Total	Average Diameter	Range
<11" dbh	40	16%	7.70"	2" to 10"
11" to 20" dbh	119	47%	16.21"	11" to 20"
>20" dbh	94	37%	27.39"	21" to 38"
Totals	253	100%	18.90"	2" to 38"

REGENERATION:
Twentytwo (22) milacre (1/1,000 acre) regeneration plots were taken at each plot center. Thirtyone (31) plant species were tallied in the understory, and a listing of these follows:

MAIN TRACT

PLANT SPECIES	NUMBER TALLIED	PER ACRE BASIS
May Apple	241	10,953/acre
Wood's Violet	114	5,181
Garlic Mustard	78	3,545
Black Jet Bead	50	2,273
Norway Maple	41	1,863
Wild Sarsaparilla	38	1,727
Virginia Creeper	34	1,545
White Ash	25	1,136
Spicebush	19	864
Jewelweed	18	818
Cherry species	17	773
Skunk Cabbage	12	545
Honeysuckle	9	409
Trillium	9	409
False Solomon's Seal	8	364
Poison Ivy	8	354
Strawberry	7	318
Raspberry	6	273
Columbine	6	273
Unknown	6	273
Rose species	4	182
Umbrella Magnolia	4	182
Southern Arrowwood	4	182
Beech	3	136
"Mile-a-Minute" weed	2	91
"Hay-Scented" fern	2	91
Hydrangea	2	91
Smilax species	1	45
Red Maple	1	45
Basswood (Linden)	1	45
Blueberry species	1	45
31 Species Present	771	35,042/acre

Plus.... in scattered patches, lots of Pachysandra; Jet Bead; Sedges & Grasses present. This tract has the greatest number of non-native invasive plant species present on Oakbourne Park!

WOODLAND ANALYSIS — APPENDIX D

POND-WEST TRACT

22.1 acres

Yellow-Poplar — Norway Maple — White Ash — Eastern White Pine

Total number of plots — **23 variable radius Prism plots** (10 factor).
Total number of trees tallied — **238 trees**.
Average Basal Area/acre = **103 sq. ft.**, ie. 238 ÷ 23 = 10.32 x 10 = 103 sq. ft.
Average diameter of all trees tallied = **18.39˝ @ dbh**.
ie. 4,376 diameter inches ÷ 238 = 18.3865˝ @ diameter breast height (**dbh**).
Diameter range of all trees tallied — from **1˝ to 36 ˝ @ dbh**.
Overall Stand Stocking Level = FULLY STOCKED (**78%**) according to the Upland Central Hardwood Stocking Guide, or about 56 trees per acre.

SPECIES OCCURRENCE		% of TOTAL	AVERAGE DIAMETER	RANGE
YELLOW POPLAR	(174)	73%	20.22"	4" to 36"
NORWAY MAPLE	(17)	7%	9.41"	1" to 20"
WHITE ASH	(14)	6%	14.28"	6" to 24"
EAST. WHITE PINE	(13)	6%	16.30"	12" to 20"
MOCKERN. HICKORY	(6)	3%	13.50"	8" to 20"
BEECH	(2)	1%	14.50"	11" to 18"
BLACK CHERRY	(2)	1%	11.50"	10" to 13"
RED MAPLE	(2)	1%	8.00"	2" to 14"
SYCAMORE	(2)	1%	31.50"	31" to 32"
WHITE OAK	(1)	<1%	22.00"	22"
N. RED OAK	(1)	<1%	22.00"	22"
BLACK OAK	(1)	<1%	23.00"	23"
BLACK GUM(TUPELO)	(1)	<1%	10.00"	10"
SASSAFRAS	(1)	<1%	3.00"	3"
HONEYSUCKLE BUSH	(1)	<1%	3.00"	3"
15 Species	(238)	100%	18.39"	1" to 36"

STAND STRUCTURE BY SIZE CLASSES:

Size Class	#	% of Total	Average Diameter	Range
<11" dbh	23	10%	6.13"	1" to 10"
11" to 20" dbh	142	59%	16.53"	11" to 20"
>20" dbh	73	31%	25.10"	21" to 36"
Totals	238	100%	18.39"	1" to 36"

REGENERATION:
Twentythree (23) milacre (1/1,000acre) regeneration plots were taken at each plot center. Twentythree (23) plant species were tallied in the understory, and a listing of these follows:

POND-WEST TRACT

PLANT SPECIES	NUMBER TALLIED	PER ACRE BASIS
Garlic Mustard	378	16,431/acre
Wood's Violet	242	10,519
Strawberry	195	8,476
Jewelweed	180	7,824
Spicebush	52	2,260
Honeysuckle (vine)	52	2,260
Trillium	26	1,130
Rose species	23	999
Raspberry	21	912
Smilax species	18	782
Honeysuckle (bush)	18	782
Poison Ivy	15	652
Unknown	13	565
May Apple	12	521
Virginia Creeper	10	435
Wild Sarsaparilla	5	217
Columbine	3	130
Norway Maple	2	87
Clover	2	87
False Solomon's Seal	2	87
Southern Arrowwood	1	44
Cherry species	1	44
Northern Bedstraw	1	44
23 species	1,272	55,293/acre

There is also one large area infested with Grape vines in need of relief by vine removal!!

WOODLAND ANALYSIS — APPENDIX D

PLEASANT GROVE TRACT

10.6 acres

Yellow-Poplar — Norway Maple — Mockernut Hickory — White Ash

Total number of plots — **13 variable radius Prism plots** (10 factor).
Total number of trees tallied — **188 trees**.
Average Basal Area/acre = **145 sq. ft.**, ie. 188 ÷ 13 = 14.46 x 10 = 145 sq. ft.
Average diameter of all trees tallied = **19.00˝ @ dbh**.
ie. 3,573 diameter inches ÷ 188 = 19.00˝ @ diameter breast height (**dbh**).
Diameter range of all trees tallied — from **2˝ to 57 ˝ @ dbh**.
Overall Stand Stocking Level = FULLY STOCKED (**100% +**) according to the Upland Central Hardwood Stocking Guide, or about 74 trees per acre.

SPECIES OCCURRENCE		% of TOTAL	AVERAGE DIAMETER	RANGE
YELLOW POPLAR	(104)	55%	21.56"	6" to 57"
NORWAY MAPLE	(32)	17%	11.47"	5" to 19"
MOCKERN. HICKORY	(13)	7%	15.31"	5" to 28"
WHITE ASH	(10)	5%	15.50"	12" to 28"
BLACK CHERRY	(6)	3%	15.67"	8" to 24"
JAP. FALSE-SAWARA	(5)	3%	14.60"	11" to 18"
WHITE OAK	(4)	2%	40.50"	31" to 48"
EAST. WHITE PINE	(4)	2%	16.50"	10" to 20"
BLACK WALNUT	(3)	2%	16.00"	12" to 22"
N. RED OAK	(2)	1%	30.50"	12" to 49"
BIRD CHERRY	(2)	1%	12.50"	12" to 13"
BLACK OAK	(1)	<1%	48.00"	48"
BASSWOOD (LINDEN)	(1)	<1%	14.00"	14"
HONEYSUCKLE BUSH	(1)	<1%	2.00"	2"
14 Species	(188)	100%	19.00"	2" to 57"

STAND STRUCTURE BY SIZE CLASSES:

Size Class	#	% of Total	Average Diameter	Range
<11" dbh	37	20%	7.86"	2" to 10"
11" to 20" dbh	91	48%	14.34"	11" to 20"
>20" dbh	60	32%	32.48"	21" to 57"
Totals	188	100%	19.00"	2" to 57"

REGENERATION:
Thirteen (13) milacre (1/1,000 acre) regeneration plots were taken, one at each plot center. Nineteen (19) plant species were tallied in the understory, and a listing of these follows:

PLEASANT GROVE TRACT

PLANT SPECIES	NUMBER TALLIED	PER ACRE BASIS
Wood's Violet	293	22,538/acre
Jewelweed	243	18,692
Garlic Mustard	181	13,923
Trillium	35	2,692
Pachysandra	33	2,538
Virginia Creeper	19	1,461
Honeysuckle, Bush	15	1,154
Poison Ivy	15	1,154
Honeysuckle, Vine	12	923
Raspberry	7	538
Smilax species	7	538
Cherry species	6	462
Wild Sarsaparilla	6	462
Wild Grapevine	5	385
Strawberry	3	231
Columbine	3	231
May Apple	2	154
Yellow Poplar	1	77
False Solomon's Seal	1	77
19 Species	887	68,228/acre

Just to the North & East of the unimproved road that winds through this tract, is a large area infested with Grapevines that badly needs relief before all of the young Yellow Poplars are killed. Also, much trash & rubbish dumped along this road & on the western portion of this tract. Some of the largest & oldest trees on Oakbourne Park are located along the western boundary of this tract!!

WOODLAND ANALYSIS — APPENDIX D

TRACT COMPARISONS FOR THE TOP FIVE SPECIES PRESENT

These tract comparisons were made, using the top five species present, to ascertain whether the present forest at Oakbourne had its beginnings at different times.

The average diameters of **Yellow Poplar**, which is the dominant tree now at Oakbourne, show pretty conclusively that this forest had its beginnings all at the same time, probably not to exceed 120 to 130 years ago on mostly open lands.

The large **White Oaks** are survivors from an earlier age, some of them well over 200 years of age.

The **Norway Maples** present are shade-tolerant, invasive non-natives that are, even now, invading the present forest. They will need to be controlled, or else they will eventually out-compete most desirable native tree species.

I. Number of Trees Tallied:

SPECIES	"MAIN"	"POND-WEST"	"PLEASANT GROVE	TOTALS
YELLOW POPLAR	121	174	104	399 (59%)
NORWAY MAPLE	49	17	32	98 (14%)
WHITE ASH	11	14	10	35 (5%)
WHITE OAK	25	1	4	30 (+4%)
MOCKERNUT HICKORY	11	6	13	30 (+4%)
"TOP FIVE"	217	212	163	592 (87%)

II. Average Diameters:				AVERAGE ALL TRACTS
YELLOW POPLAR	20.56"	20.22"	21.56"	20.73"
NORWAY MAPLE	11.59"	9.41"	11.47"	11.17"
WHITE ASH	16.09"	14.28"	15.50"	15.20"
WHITE OAK	29.04"	22.00"	40.50"	30.33"
MOCKERNUT HICKORY	17.82"	13.50"	15.31"	15.87"
"TOP FIVE-AVERAGES	19.15"	18.88"	19.17"	19.06"

APPENDIX E

VEGETATION OBSERVED IN TRACTS

Norway Maple —
Acer platanoides
Non-native Invasive

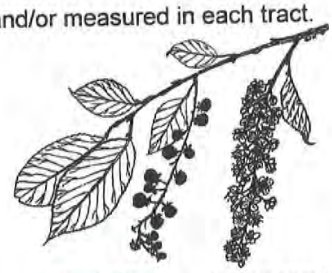
White Oak —
Quercus alba

Record of Vegetation Observed in Tracts

In the process of collecting data, where the Consultants recorded all species in the Sample Plots, all species observed and identified, while traveling through each tract between the Sample Plots, were also recorded

The following pages are a listing of the vegetation we saw and/or measured in each tract.

Red Maple — *Acer rubrum*



Black Cherry — *Prunus serotina*

MAIN TRACT

Greenbriar —
Smilax sp.

POND-WEST TRACT

Japanese Honeysuckle,
Lonicera japonica
Non-native Invasive

PLEASANT GROVE TRACT

Oakbourne Park

MAIN TRACT — APPENDIX E

VEGETATION OBSERVED on May 20, 2002

Common Name	Scientific Name	Frequency	Native, Non-native or Non-native Invasive
Trees			
Ash, white	*Fraxinus americana*	Frequent	Native
Basswood, American	*Tilia americana*	Few	Native
Beech, American	*Fagus grandifolia*	Few	Native
Sawara, Japanese	*Chamaecyparis pisifera*	Very few	Non-native
Cherry sp.	*Prunus sp.*	Few	Native
Cherry, black	*Prunus serotina*	Very few	Native
Hickory, mockernut	*Carya tomentosa*	Frequent	Native
Hickory, shagbark	*Carya ovata*	Few	Native
Locust, black	*Robinia pseudoacacia*	Few	Native
Magnolia, umbrella	*Magnolia tripetala*	Frequent	Native
Maple, Norway	*Acer platanoides*	Frequent	Non-native
Maple, red	*Acer rubrum*	Frequent	Native
Oak, black	*Quercus velutina*	Very few	Native
Oak, northern red	*Quercus rubra*	Very few	Native
Oak, white	*Quercus alba*	Frequent	Native
Paulownia, Royal	*Paulownia tomentosa*	Very few	Non-native
Persimmon, common	*Diospyros virginiana*	Very few	Native
Spruce, Norway	*Picea abies*	Few	Non-native
Sycamore	*Platanus occidentalis*	Very few	Native
Tupelo, black (black gum)	*Nyssa sylvatica*	Very few	Native
Walnut, black	*Juglans nigra*	Very few	Native
Yellow-poplar	*Liriodendron tulipifera*	Very frequent	Native
Shrubs			
Arrowwood, southern	*Viburnum dentatum*	Frequent	Native
Blueberry sp.	*Vaccinium sp*	Few	Native
Honeysuckle, bush	*Lonicera sp.*	Frequent	Native and Non-native Invasive
Jetbead, black	*Rhodotypos scandens*	Frequent	Non-native Invasive
Sarsaparilla, wild	*Aralia nudicaulis*	Frequent	Native
Spicebush, common	*Lindera benzoin*	Frequent	Native
Viburnum, maple leaf	*Viburnum acerifolium*	Frequent	Native
Vines			
Grape, wild	*Vitis sp.*	Frequent	Native
Greenbriar sp	*Smilax sp.*	Few	Native
Honeysuckle sp.	*Lonicera sp.*	Frequent	Native and Non-native Invasive
Ivy, poison	*Toxicodendron radicans*	Few	Native
"Mile-a-Minute" vine	*Polygonum perfoliatum*		
Raspberry, flowering	*Rubus odoratus*	Frequent	Native
Rose sp.	*Rosa sp.*	Few	Native
Virginia creeper	*Parthenocissus quinquefolia*	Frequent	Native

MAIN TRACT

Common Name	Scientific Name	Frequency	Native, Non-native or Non-native Invasive
Wildflowers			
Cabbage, skunk	*Symplocarpus foetidus*	Frequent	Native
Celandine, lesser	*Ranunculus ficaria*	Very few	Non-native invasive
Columbine, wild	*Aquilegia canadensis*	Few	Native
Jewelweed	*Impatiens capensis*	Very frequent	Native
Mayapple	*Polyphyllum peltatum*	Very frequent	Native
Mustard, garlic	*Alliaria petiolata*	Very frequent	Non-native invasive
Soloman's seal, false	*Smilacena racemosa*	Few	Native
Spring beauty	*Claytonia virginica*	Very frequent	Native
Strawberry, wild	*Fragaria virginiana*	Frequent	Native
Unknowns (6)	*Genus and species unknown*	Few	Native and Non-native
Wood-sorrel, violet	*Oxalis violaceae*	Very frequent	Native
Ground Covers			
Pachysandra, Japanese	*Pachysandra terminalis*	Frequent	Non-native Invasive
Ferns			
Fern, Christmas	*Polystichum acrostichoides*	Few	Native
Fern, hay-scented	*Dennstaedtia punctilbula*	Few	Native, invasive
Mosses			
Clubmoss sp.	*Lycopodium sp.*	Frequent	Native

Common and scientific names are according to:

A Field Guide to Wildflowers NE and NC America Roger T. Peterson and Margaret McKenny; Houghton Mifflin.

Atlas of the Flora of Pennsylvania, Wherry, Frogg, and Wahl; The Morris Arboretum of the Univ. of Pennsylvania.

Audubon Society Field Guide to North American Wildflowers Eastern Region, William A. Niering; A. Knopf.

Checklist of United States Trees, Elbert L. Little Jr.; USDA Forest Service.

Manual of Woody Landscape Plants, Michael A. Dirr; University of Georgia.

Newcomb's Wildflower Guide, Laurence Newcomb; Little Brown and Co.

Shrubs and Vines for Northeastern Wildlife, Northeastern Forest Experiment Station; USDA Forest Service

Oakbourne Park

POND-WEST TRACT — APPENDIX E

VEGETATION OBSERVED on May 23, 2002

Common Name	Scientific Name	Frequency	Native, Non-native or Non-native Invasive
Trees			
Ash, white	*Fraxinus americana*	Frequent	Native
Beech, American	*Fagus grandifolia*	Few	Native
Cherry, black	*Prunus serotina*	Few	Native
Cherry sp.	*Prunus sp.*	Very few	Native
Crabapple sp.	*Malus sp.*	Very Few	
Elm, American	*Ulmus americana*	Few	Native
Hickory, mockernut	*Carya tomentosa*	Frequent	Native
Maple, Norway	*Acer platanoides*	Frequent	Non-native
Maple, red	*Acer rubrum*	Few	Native
Oak, black	*Quercus velutina*	Very few	Native
Oak, northern red	*Quercus rubra*	Few	Native
Oak, white	*Quercus alba*	Few	Native
Pine, eastern white	*Pinus strobus*	Few	Native
Sassafras	*Sassafras albidum*	Very few	Native
Sycamore	*Platanus occidentalis*	Very few	Native
Tupelo, black (black gum)	*Nyssa sylvatica*	Very few	Native
Walnut, black	*Juglans nigra*	Very few	Native
Yellow-poplar	*Liriodendron tulipifera*	Very frequent	Native
Ash, white	*Fraxinus americana*	Frequent	Native
Beech, American	*Fagus grandifolia*	Few	Native
Cherry, black	*Prunus serotina*	Few	Native
Cherry sp.	*Prunus sp.*	Very few	Native
Shrubs			
Arrowwood, southern	*Viburnum dentatum*	Very few	Native
Honeysuckle, bush	*Lonicera sp.*	Frequent	Native and Non-native Invasive
Rose, multiflora	*Rosa multiflora*	Few	Non-native Invasive
Rose sp.	*Rosa sp.*	Few	Native
Sarsaparilla, wild	*Aralia nudicaulis*	Very Few	Native
Spicebush, common	*Lindera benzoin*	Frequent	Native
Olive, autumn	*Elaeagnus umbellata*	Very few	Non-native Invasive
Vines			
Grape, wild	*Vitis sp.*	Frequent	Native
Greenbriar sp.	*Smilax sp.*	Few	Native
Honeysuckle sp.	*Lonicera sp.*	Frequent	Native and Non-native Invasive
Ivy, poison	*Toxicodendron radicans*	Few	Native
Raspberry, flowering	*Rubus odoratus*	Frequent	Native
Virginia creeper	*Parthenocissus quinquefolia*	Few	Native
Grape, wild	*Vitis sp.*	Frequent	Native
Greenbriar sp.	*Smilax sp.*	Few	Native

POND-WEST TRACT

Common Name	Scientific Name	Frequency	Native, Non-native or Non-native Invasive
Wildflowers			
Bedstraw, northern	*Galium boreale*	Very few	Native
Columbine, wild	*Aquilegia canadensis*	Very Few	Native
Clover sp.	*Trifolium sp*	Very Few	Native
Jewelweed	*Impatiens capensis*	Very frequent	Native
Knotweed, Japanese	*Polygonum cuspidatum*	Few	Non-native
Mayapple	*Polyphyllum peltatum*	Very frequent	Native
Mustard, garlic	*Alliaria petiolata*	Very frequent	Non-native Invasive
Soloman's seal, false	*Smilacena racemosa*	Very Few	Native
Strawberry, wild	*Fragaria virginiana*	Frequent	Native
Trillium	*Trillium sp*	Frequent	Native
Unknowns (13)	*Genus and species unknown*	Few	Native and Non-native
Wood-sorrel, violet	*Oxalis violaceae*	Very frequent	Native
Grasses			
Cattail, common	*Typha latifolia*	Frequent	Native
Grass sp.		Frequent	Native and non-native
Sedge sp	Carex sp.	Few	Native
Ferns			
Fern sp.	*Dennstaedtia punctilbula*	Few	Native
Mosses			
Clubmoss sp.	*Lycopodium sp.*	Frequent	Native

Common and scientific names are according to:

A Field Guide to Wildflowers NE and NC America Roger T. Peterson and Margaret McKenny; Houghton Mifflin.

Atlas of the Flora of Pennsylvania, Wherry, Frogg, and Wahl; The Morris Arboretum of the Univ. of Pennsylvania.

Audubon Society Field Guide to North American Wildflowers Eastern Region, William A. Niering; A. Knopf.

Checklist of United States Trees, Elbert L. Little Jr.; USDA Forest Service.

Manual of Woody Landscape Plants, Michael A. Dirr; University of Georgia.

Newcomb's Wildflower Guide, Laurence Newcomb; Little Brown and Co.

Shrubs and Vines for Northeastern Wildlife, Northeastern Forest Experiment Station; USDA Forest Service

Oakbourne Park

PLEASANT GROVE TRACT — APPENDIX E

VEGETATION OBSERVED on May 28, 2002

Common Name	Scientific Name	Frequency	Native, Non-native or Non-native Invasive
Trees			
Ash, white	*Fraxinus americana*	Frequent	Native
Basswood, American	*Tilia Americana*	Few	Native
Cherry sp.	***Prunus sp***	Very few	Native
Cherry, black	*Prunus serotina*	Few	Native
Cherry, mazzard	***Prunus avium***	Very few	Non-native
Hickory, mockernut	***Carya tomentosa***	Frequent	Native
Maple, Norway	*Acer platanoides*	Frequent	Non-native
Oak, black	*Quercus velutina*	Very few	Native
Oak, northern red	*Quercus rubra*	Few	Native
Oak, white	*Quercus alba*	Few	Native
Pine, eastern white	***Pinus strobus***	Few	Native
Sawara, Japanese	*Chamaecyparis pisfera*	Very few	Nonnative
Walnut, black	*Juglans nigra*	Very few	Native
Yellow-poplar	*Liriodendron tulipifera*	Very frequent	Native
Shrubs			
Deutzia sp.	***Deutzia sp.***	Few	Non-native
Honeysuckle, bush	*Lonicera sp.*	Frequent	Native and Non-native Invasive
Rose sp.	***Rosa sp.***	Few	Native
Rose, multiflora	*Rosa multiflora*	Few	Non-native Invasive
Sarsaparilla, wild	*Aralia nudicaulis*	Very Few	Native
Spicebush, common	*Lindera benzoin*	Frequent	Native
Vines			
Grape, wild	*Vitis sp.*	Frequent	Native
Greenbriar sp.	***Smilax sp.***	Few	Native
Honeysuckle, Japanese	***Lonicera japonica***	Frequent	Non-native invasive
Honeysuckle sp.	***Lonicera sp.***	Frequent	Native and Non-native invasive
Ivy, poison	***Toxicodendron radicans***	Few	Native
Raspberry, flowering	*Rubus odoratus*	Frequent	Native
Virginia creeper	***Parthenocissus quinquefolia***	Few	Native

PLEASANT GROVE TRACT

Common Name	Scientific Name	Frequency	Native, Non-native or Non-native Invasive
Wildflowers			
Columbine, wild	*Aquilegia canadensis*	Very Few	Native
Dandelion, common	*Taraxacum officinale*	Frequent	Native
Jewelweed	*Impatiens capensis*	Very frequent	Native
Mayapple	*Polyphyllum peltatum*	Very frequent	Native
Mustard, garlic	*Alliaria petiolata*	Very frequent	Non-native invasive
Soloman's seal, false	*Smilacena racemosa*	Very Few	Native
Strawberry, wild	*Fragaria virginiana*	Frequent	Native
Trillium	*Trillium sp*	Frequent	Native
Wood-sorrel, violet	*Oxalis violaceae*	Very frequent	Native
Ground covers			
Pachysandra sp.	*Pachysandra sp.*	Few	Native and non-native
Mosses			
Clubmoss sp.	*Lycopodium sp.*	Frequent	Native

Common and scientific names are according to:

A Field Guide to Wildflowers NE and NC America Roger T. Peterson and Margaret McKenny; Houghton Mifflin.

Atlas of the Flora of Pennsylvania, Wherry, Frogg, and Wahl; The Morris Arboretum of the Univ. of Pennsylvania.

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Oakbourne Park

APPENDIX F

HAZARD TREES — A Reason for Concern

DEFINITION: A Hazard Tree is a Defective Tree with a Target.

- Dead or defective trees deep in a forest, where people and property (structures, vehicles, etc.) are not likely to be, are not generally considered hazardous. (See **Photo # 1**.)
- However, if a dead or defective tree or defective part, is within "hitting" distance of places where people are likely to be (ie. Established trails, roads, mowed lawns, an interpretive sign, exercise trail station, picnic table, lavatory, building, etc.) then it is generally determined to be a hazard tree. (See **Photos # 2 – 12**, Pages 25 to 30.)
- Landowners, including owners of parks and campgrounds, have been held liable for damages from hazard trees. Some 10 to 15 years ago a hazard tree fell on a tent in a Minnesota State campground and killed the occupants. The state was sued and held liable for several million dollars which was paid to the surviving family members.
- Since that incident, many federal, state, local, and private landowners have arranged for hazard tree surveys on their properties and subsequently have removed the trees, or defective parts or have moved the targets (i.e. picnic tables).

It is recommended that a full hazard tree survey be made in Oakbourne Park, that hazardous tree situations be corrected, and that park staff receive training to keep watch for future hazards.

1. This tree would **not be considered as a Hazard Tree**.

   It is a dead tree deep in the **Main Tract** forest. People are not likely to be in this area. It has great value as a wildlife nesting, shelter, and perching tree.

   At least 3 cavity nesting entrance holes were observed in the this tree.

Oakbourne Park

APPENDIX F

Hazard Trees Observed

2. A dead tree in the **Pleasant Grove Tract.**

   It is covered by wild grape vine, and other vines, that likely killed it.

   The tree poses a threat to people, their pets, drivers, passengers, and vehicles traveling on this well used gravel road.

3. This dead tree (arrow) presents a hazard to trail users in the **Main Tract.**

Hazard Trees Observed

4. At first glance, this **London plane** tree (in the left foreground) in the **Main Tract** appears to be sturdy and strong. **IT IS NOT.**

5. It is not uncommon for a mature **London plane**, or its close relative, the **sycamore**, to have large basal cavaties. However, when the cavity walls have less than 1/3 of the radius as sound wood, the tree may no longer be able to support the weight of its upper body.

   There is a tiny 2 inch-long slit in the opposite cavity wall where one can see clear through the tree.

Hazard Trees Observed

6. This 50-inch diameter **Norway maple**, located about 80 feet west of the Mansion, has a large cavity with a mass of rotten wood inside. Some removal of the upper trunk has taken place since the photo was taken. Careful observation of the tree must be made to assure its safety to people and property.

7. A 36-inch-long stick can be inserted in the same 50-inch diameter tree (measured at 4 ½ feet from the ground).

   Experts recommend that if 1/3 or less of the radius of a trunk is sound wood, it may be a hazardous situation and cannot be counted on to support the tree.

   The rough measurement being made here indicates that less than 8 inches of sound wood may remain.

Hazard Trees Observed

8. Almost every visitor and Park employee passes by this 29-inch (**dbh) red maple tree** (arrow) each time they enter the **Oakbourne Park** grounds.

   A major portion of the top is missing.

9. Note the length of the tree measuring stick.

   A small opening is barely seen at the base of the **red maple**.

10. The 36-inch-long tree measuring stick can be fully inserted within the base of the **red maple tree** at many angles. The walls of the tree cavity are very thin, much less than the recommended 1/3 of the radius which should be sound wood.

Hazard Trees Observed

11. Several dead limbs are in the crown of this 55-inch diameter, 103-foot tall **yellow-poplar tree** in the circle by the main entrance of the Mansion. The profuse growth of pencil-thin epicormic branches indicates the tree is in some type of stress.

12. This photo, taken on May 23, 2002 of the 55-inch diameter tree, shows that it is leafing out much later than it should. The drought this spring may have contributed to the stress.

Oakbourne Park

APPENDIX G

Examples of Trash Observed in the Pleasant Grove Tract

Photo 1

Photo 2

Photo 3

Oakbourne Park

APPENDIX H

Control of Invasive Plants

The first priority facing Oakbourne forests is the control of invasive plants. The future health and well being of this forest depends on the degree that these invasives can be controlled. It is probably not realistic to consider complete elimination of the invasives, for there are far too many sources of reinvasion, some of them around the Mansion itself.

Much of the removal work will, of necessity, be labor-intensive. Use of approved herbicides will be needed, but their use should be kept to a minimum to avoid damage to desirable vegetation and to protect the public users of the Park. The authors of this plan are not qualified to provide a herbicide control plan for the treatment of invasives. There are at least two companies that specialize in this type of forestry work. Their advice and counsel would be valuable to have before proceeding. They do work across the State of Pennsylvania. Here are their addresses:

Forest Regeneration Services
Barry S. Rose, Certified Forester
P.O. Box 319
Lawn, PA 17041
Phone: **717-964-2264**

J and R Forestry, Inc.
James E. Rutt
565 Stone Mill Drive
Elizabethtown, PA 17022
Phone: **717-367-2396**

Most of their work is probably in site preparation for commercial forest planting, but they have lots of experience in this field and they should be able to give excellent advice even if they may not be able to do the work under Oakbourne's circumstances.

Topping the list is the control of **grapevines** in two locations — just North and West of the Pond and just Northeast of the unimproved road winding through the **Pleasant Grove Tract**. Earlier efforts at vine control are evident on some of the vines and in some cases vines have grown back again. An effective way to control grape vines is to cut a 6'' to 12'' section from the vine and to then spray the cut surface on the basal section with **ROUNDUP** in the ready-to-use (RTU) formula. This may have been the technique used by Park Crews or volunteers in the past. We saw no evidence of significant use by people inside either of the two vine-infested areas.

The Japanese pachysandra and the **two species of knotweeds** tend to grow in groups, are somewhat succulent, and can probably be controlled by a combination of cutting and herbicides. But **black jetbead**, **autumn olive**, **multiflora rose,** and **honeysuckle** are all shrubby and will probably need to be cut by hand and then the stumps treated with herbicide to prevent re-sprouting. **Norway maple** poses special problems in removal and control, which should be discussed with experts before any management, is contemplated.

REFERENCE MATERIAL from various sources about the invasives and their management is included after the **APPENDICIES.**

APPENDIX H

Examples of Non-Native Invasive Plants

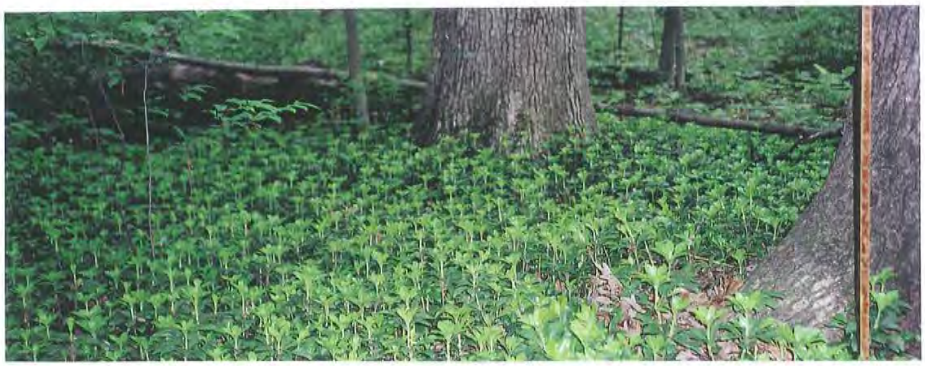
1. **Black jetbead** — *Rhodotypos scandens*
   Photo taken in May, 2002
   in the **Main Tract.**

   The white flowers are
   1´´ to 2´´ in diameter, 4 petaled,
   and appear in early Spring.

   The shiny black fruit resembles
   beads and matures in October.

2. **Black Jetbead** tends to grow in masses, effectively preventing desirable seedling growth. The branches are so weak birds will not nest in the vegetation.

3. **Garlic mustard** — *Alliaria petiolata*, prevent desirable tree seedlings from growing. This group is in the **Pleasant Grove Tract**.



4. **Japanese pachysandra** — *Pachysandra terminalis*. This non-native invasive plant is invading an approximate 70 foot diameter patch in the **Main Tract**.

5. **Japanese knotweed** — *Polygonum cuspidatum*, spreads quickly to form dense thickets preventing growth of native species. This patch is near the picnic shelter.

Pennsylvania Native Shade-Tolerant Trees and Shrubs

Pennsylvania Native Trees and Shrubs that are **Very Tolerant**, **Tolerant**, and **Intermediate** in Tolerance of Shade:

Common Name	Scientific Name	Tolerance of Shade	Preferred Sites
Beech, American	*Fagus grandifolia*	**Very Tolerant**	wide range
Dogwood, flowering	*Cornus florida*	**Very Tolerant**	wide range
Hemlock, Eastern	*Tsuga canadensis*	**Very Tolerant**	moist / cool
Holly, American	*Ilex opaca*	**Very Tolerant**	wide range
Hophornbeam, Amer. (Ironwood)	*Ostrya virginiana*	**Very Tolerant**	wide range
Hornbeam (blue beech)	*Carpinus caroliniana*	**Very Tolerant**	wide range
Persimmon	*Diospyros virginiana*	**Very Tolerant**	wide range
Alder, hazel	*Alnus serrulata*	Tolerant	moist
Ash, prickly-	*Xanthoxylum americanum*	Tolerant	wide range
Basswood, American (linden)	*Tilia americana*	Tolerant	moist
Blackgum (black tupelo)	*Nyssa sylvatica*	Tolerant	wide range
Boxelder	*Acer negundo*	Tolerant	wide range
Elm, slippery	*Ulmus rubra*	Tolerant	flood plains
Fringe-tree	*Chinanthus virginicus*	Tolerant	moist / rich
Laurel, mountain	*Kalmia latifolia*	Tolerant	wide range
Maple, black	*Acer nigrum*	Tolerant	wide range
Maple, red	*Acer rubrum*	Tolerant	wide range
Maple, silver	*Acer saccharinum*	Tolerant	wide range
Maple, striped (moosewood)	*Acer pensylvanicum*	Tolerant	wide range
Maple, sugar	*Acer saccharum*	Tolerant	wide range
Mulberry, red	*Morus rubra*	Tolerant	wide range
Pawpaw	*Asimina triloba*	Tolerant	moist
Redbud	*Cercis canadensis*	Tolerant	wide range
Rhododendron (6)	*Rhododendron sp.*	Tolerant	moist / cool
Serviceberry (Juneberry)	*Amelanchier arborea*	Tolerant	wide range
Witch-hazel	*Hammamelis virginiana*	Tolerant	moist

The following species are considered **Intermediate** in their **Tolerance of Shade**. They can be underplanted to "sweeten" existing stands and improve stand composition, but seek out the sunnier openings in stands to plant these desirable trees:

Ash, white	*Fraxinus americana*	**Intermediate**	wide range
Oak, black	*Quercus velutina*	**Intermediate**	wide range
Oak, chestnut	*Quercus prinus*	**Intermediate**	wide range
Oak, northern red	*Quercus rubra*	**Intermediate**	wide range
Oak, swamp white	*Quercus bicolor*	**Intermediate**	wide range
Oak, white	*Quercus alba*	**Intermediate**	wide range

These native Pennsylvania forest trees and shrubs can, depending upon specific site requirements, be used to Underplant (sweeten) existing forest stands, when the objective is to, over time, return stand composition to that more normal to an **Eastern Mesophytic Hardwood Forest.**

Duane L. Green
GREEN LINE CONSTULTANTS

Oakbourne Arboretum
Oakbourne Park
Westtown Township
Westtown, Pennsylvania
So. Concord Rd.
So. Concord Rd.
Garage
Mansion
Garage
Parking
Historic Water Tower
Soccer Field
Picnic Shelter
Parking
Parking
Water Tank
N
D13
E13
F14
G15
H15
D12
E12
F13
G14
H14
F12
G13
H13
I13
F11
G12
H12
G11
I12
F10
H11
G10
I11
J11
F9
H10
G9
I10
F8
H9
J10

Forest and Tree Stewardship Plan

Oakbourne Park

Trees Identified in the Oakbourne Arboretum

Inventoried - June 3 - 4, 2002

Tree diameters measured 4 ½ feet above the ground in inches at Diameter Breast High (**DBH**)

Grid Number	Diameter In Inches Some have more than one trunk	Common Name	Scientific Name	Native to SE PA or Native to US or Non-native to US
E12	22"	Horsechestnut	*Aesculus hippocastanum*	Non-native to US
E12	21"	Maple, Sycamore	*Acer pseudoplatanus*	Non-native to US
E12	25"	Spruce, Norway	*Picea abies*	Non-native to US
E12	31"	Horsechestnut	*Aesculus hippocastanum*	Non-native to US
E12	26"	Maple, Norway	*Acer platanoides*	Non-native to US
E12	19"	Fir, sp.	*Abies sp.*	
E12	22"	Fir sp.	*Abies, sp*	
E12	28"	Maple, Norway	*Acer platanoides*	Native to SE PA
E12	46"	Oak, White	*Quercus alba*	Native to SE PA
E12	19"	Hornbeam, American	*Carpinus caroliniana*	Native to SE PA
E12	29"	Maple, Hedge	*Acer campestre*	Non-native to US
E12	33"	Beech, Copper	*Fagus sylvatica 'Atropunicea'*	Non-native to US
E12	29"	Maple, Sugar	*Acer saccharum*	Native to SE PA
E12	17"	Goldenraintree	*Koelreuteria paniculata*	Non-native to US
E12	18"	Mulberry sp.	*Morus sp.*	
E12	21"	Cherry, Black	*Prunus serotina*	Native to SE PA
E12	7"	Beech, American	*Fagus grandifolia*	Native to SE PA
E12	7"	Goldenraintree	*Koelreuteria paniculata*	Non-native to US
E12	8"	Goldenraintree	*Koelreuteria paniculata*	Non-native to US
E12	5"	Goldenraintree	*Koelreuteria paniculata*	Non-native to US
E12	14"	Yellow-poplar	*Liriodendron tulipifera*	Native to SE PA
E12	9"	Hickory, Mockernut	*Carya tomentosa*	Native to SE PA
E12	7"	Maple, Norway	*Acer platanoides*	Non-native to US
E12	10"	Maple, Norway	*Acer platanoides*	Non-native to US
E12	13"	Maple, Norway	*Acer platanoides*	Non-native to US
E12	15"	Goldenraintree	*Koelreuteria paniculata*	Non-native to US
E12	7"	Hickory, Mockernut	*Carya tomentosa*	Native to SE PA
E12	10"	Hickory, Mockernut	*Carya tomentosa*	Native to SE PA
E12	8"	Goldenraintree	*Koelreuteria paniculata*	Non-native to US
E12	9"	Goldenraintree	*Koelreuteria paniculata*	Non-native to US
E13	8"	Arborvitae	*Thuja occidentalis*	Native to SE PA
E13	14"	Goldenraintree	*Koelreuteria paniculata*	Non-native to US
F11	26"	Horsechestnut	*Aesculus hippocastanum*	Non-native to US
F11	27"	Maple, Norway	*Acer platanoides*	Non-native to US
F11	39"	Maple, Red	*Acer rubrum*	Native to SE PA
F11	20"	Sawara, Japanese-false	*Chamaecyparis pisifera*	Non-native to US
F11	24"	Magnolia, Fraser	*Magnolia fraseri*	Native to US
F11	34"	Spruce, Norway	*Picea abies*	Non-native to US
F11	32"	Hemlock, Eastern	*Tsuga canadensis*	Native to SE PA
F11	37"	Maple, Red	*Acer rubrum*	Native to SE PA
F11	29"	Hemlock, Eastern	*Tsuga canadensis*	Native to SE PA
F11	32"	Horsechestnut	*Aesculus hippocastanum*	Non-native to US
F11	27"	Maple, Sycamore	*Acer pseudoplatanus*	Non-native to US
F11	27"	Spruce, Norway	*Picea abies*	Non-native to US
F11	17"	Yellowwood	*Cladrastris kentukea*	Native to US
F11	16"	Yellow-poplar	*Liriodendron tulipifera*	Native to SE PA
F11	34"	Horsechestnut	*Aesculus hippocastanum*	Non-native to US
F12	33"	Larch, European	*Larix decidua*	Non-native to US
F12	13"	Sourwood	*Oxydendrum arboreum*	Native to SE PA
F12	26"	Sawara, Japanese-false	*Chamaecyparis pisifera*	Non-native to US
F12	14"	Sourwood	*Oxydendrum arboreum*	Native to SE PA
F12	14"	Sourwood	*Oxydendrum arboreum*	Native to SE PA
F12	13"	Sourwood	*Oxydendrum arboreum*	Native to SE PA
F12	15"	Sourwood	*Oxydendrum arboreum*	Native to SE PA
F12	24"	Sawara, Japanese-false	*Chamaecyparis pisifera*	Non-native to US

F12	24"	Sawara, Japanese-false	*Chamaecyparis pisifera*	Non-native to US
F12	13"	Hemlock, Eastern	*Tsuga canadensis*	Native to US
F12	21"	Spruce sp.	*Picea sp.*	
F12	27"	Sawara, Japanese-false	*Chamaecyparis pisifera*	Non-native to US
F12	19" 26"	Cherry sp.	*Prunus sp.*	
F12	25"	Spruce, Norway	*Picea abies*	Non-native to US
F12	29"	Maple, Red	*Acer rubrum*	Native to SE PA
F12	57"	Beech, Copper	*Fagus sylvatica 'Atropunicea'*	Non-native to US
F12	42"	Beech, Copper	*Fagus sylvatica 'Atropunicea'*	Non-native to US
F12	47"	Beech, Copper	*Fagus sylvatica 'Atropunicea'*	Non-native to US
F12	56"	Beech, Copper	*Fagus sylvatica 'Atropunicea'*	Non-native to US
F12	23"	Cherry, Black	*Prunus serotina*	Native to SE PA
F12	29"	Cherry, Black	*Prunus serotina*	Native to SE PA
F12	11"	Sourwood	*Oxydendrum arboreum*	Native to SE PA
F12	24"	Spruce, Norway	*Picea abies*	
F12	20"	Cherry, Weeping	*Prunus sp.*	
F12	11" 13"	Cherry, Black	*Prunus serotina*	Native to SE PA
G10	7" 8" 8"	Crabapple sp.	*Malus sp.*	Native to SE PA
G10	21"	Apple sp.	*Malus sp.*	Native to SE PA
G10	18" 22"	Pecan	*Carya illinoensis*	Native to US
G10	20"	Pecan	*Carya illinoensis*	Native to US
G10	5"	Cherry sp.	*Prunus sp.*	Native to SE PA
G10	11" 4"	Crabapple sp.	*Malus sp.*	Native to SE PA
G10	10" 6"	Crabapple sp.	*Malus sp.*	Native to SE PA
G10	6" 7" 12"	Crabapple sp.	*Malus sp.*	Native to SE PA
G10	25"	Goldenraintree	*Kolrueteria panniculata*	Non-native to US
G10	39"	Fir sp.	*Abies sp.*	
G10	28"	Spruce, Norway	*Picea abies*	Non-native to US
G10	27"	Sawara, Japanese-false	*Chamaecyparis pisifera*	Non-native to US
G10	15"	Basswood	*Tilia americana*	Native to SE PA
G10	9"	Basswood	*Tilia americana*	Native to SE PA
G10	11"	Sawara, Japanese-false	*Chamaecyparis pisifera*	Non-native to US
G10	21"	Spruce, Norway	*Picea abies*	Non-native to US
G10	34"	Spruce, Norway	*Picea abies*	Non-native to US
G10	17"	Spruce, Norway	*Picea abies*	Non-native to US
G10	15"	Spruce, Norway	*Picea abies*	Non-native to US
G10	31"	Fir	*Abies sp.*	
G10	18"	Spruce, Norway	*Picea abies*	Non-native to US
G10	33"	Sawara, Japanese-false	*Chamaecyparis pisifera*	Non-native to US
G10	29"	Spruce, Norway	*Picea abies*	Non-native to US
G10	13"	Crabapple sp.	*Malus sp.*	Native to SE PA
G10	27" 29"	Sawara, Japanese-false	*Chamaecyparis pisifera*	Non-native to US
G10	51"	Maple, Norway	*Acer platanoides*	Non-native to US
G10	15" 11"	Dogwood, Flowering	*Cornus florida*	Native to SE PA
G11	63"	Plane, London	*Platanus occidentalis*	Non-native to US
G11	36"	Maple, Norway	*Acer platanoides*	Non-native to US
G11	33"	Larch, European	*Larix decidua*	Non-native to US
G11	10"	Maple, Japanese	*Acer palmatum*	Non-native to US
G11	16"	Maple, Japanese	*Acer palmatum*	Non-native to US
G11	55"	**Yellow-poplar 108 feet tall	*Liriodendron tulipifera*	Native to SE PA
G11	8"	Holly, American	*Ilex americana*	Native to SE PA
G11	8"	Dogwood, Flowering	*Cornus florida*	Native to SE PA
G11	2"	Sassafras	*Sassafras albidum*	Native to SE PA
G11	1" 2"	Sassafras	*Sassafras albidum*	Native to SE PA
G11	10"	Spruce, Colorado Blue	*Picea pungens*	Native to US
G11	11" 9" 4" 5"	Maple, Japanese	*Acer palmatum*	Non-native to US
G11	1" 2"	Dogwood	*Cornus florida*	Native to SE PA
G11	3" 5"	Maple, Norway	*Acer platanoides*	Non-native to US
G11	23"	Yellowwood	*Cladrastis kentukea*	Native to SE PA
G12	6"	Maple, Schwedler	*Acer platanoides var. schwedleri*	Non-native to US
G12	18"	Paulownia, Royal	*Paulownia tomentosa*	Non-native to US
G12	17"	Sawara, Japanese-false	*Chamaecyparis pisifera*	Non-native to US
G12	22"	Fir sp. (89 feet tall)	*Abies sp.*	
G12	25"	Hemlock, Eastern	*Tsuga canadensis*	Native to SE PA
G12	25"	Redcedar, Eastern	*Juniperus virginiana*	Native to SE PA
G12	21"	Sawara, Japanese-false	*Chamaecyparis pisifera*	Non-native to US
G12	22"	Sawara, Japanese-false	*Chamaecyparis pisifera*	Non-native to US
G12	11" 13"	Dogwood, Flowering	*Cornus florida*	Native to SE PA
G12	20" 3"	Cherry sp.	*Prunus sp.*	Native to SE PA
G12	15" 25" 13"	Chestnut, Chinese	*Castanea mollissima*	Non-native to US
G12	31"	Fir sp.	*Abies sp.*	
G12	33"	Larch, European	*Larix decidua*	Non-native to US
G12	25"	Sawara, Japanese-false	*Chamaecyparis pisifera*	Non-native to US

G12		9″	9″	Mulberry sp.	*Morus sp.*	Native to SE PA
G12	3″	3″	4″	5″	Dogwood	*Cornus florida*	Native to SE PA
G12			23″	Sawara, Japanese-false	*Chamaecyparis pisifera*	Non-native to US
G12			25″	Sawara, Japanese-false	*Chamaecyparis pisifera*	Native to SE PA
G12			22″	Fir sp.	*Abies sp.*	
G12			20″	Spruce sp.	*Picea sp.*	
G12			26″	White-cedar, Atlantic	*Chamaecyparis thyoides*	Native to SE PA
G12			20″	White-cedar, Atlantic	*Chamaecyparis thyoides*	Native to SE PA
G13			24″	Walnut, Black	*Juglans nigra*	Native to SE PA
G14		14″	18″	Apple sp.	*Malus sp.*	
G14			21″	Apple sp.	*Malus sp.*	
G14			14″	Walnut, Black	*Juglans nigra*	Native to SE PA
G14		10″	11″	Cherry, Black	*Prunus serotina*	Native to SE PA
G14			11″	Cherry, Black	*Prunus serotina*	Native to SE PA
G14			18″	Walnut, Black	*Juglans nigra*	Native to SE PA
G14		18″	20″	Walnut, Black	*Juglans nigra*	Native to SE PA
G14			13″	Walnut, Black	*Juglans nigra*	Native to SE PA
H10			50″	Maple, Norway	*Acer platanoides*	Non-native to US
H10		12″	15″	Magnolia sp.	*Magnolia sp.*	
H10			27″	Maple, Sycamore	*Acer pseudoplatanus*	Non-native to US
H10			33″	Spruce, Norway	*Picea abies*	Non-native to US
H10			21″	Spruce sp.	*Picea sp.*	Non-native to US
H10			2″	Spruce, Colorado blue	*Picea pungens*	Native to US
H10			3″	Fir sp.	*Abies sp.*	
H10			8″	Douglas-fir	*Pseudotsuga menziesii*	Native to US
H10			19″	Maple, Norway	*Acer platanoides*	Non-native to US
H10			2″	Cedar, Blue Atlas	*Cedrus atlantica*	Non-native to US
H10		37″	2″	Yellow-poplar	*Liriodendron tulipifera*	Native to SE PA
H10			16″	Maple, Norway	*Acer platanoides*	Non-native to US
H10			33″	Sweetgum	*Liquidambar styraciflua*	Native to SE PA
**** H10		****	46″	Maple, Norway	*Acer platanoides*	Non-native to US
H11			41″	Oak, Willow	*Quercus phellos*	Native to SE PA
H11			44″	Yellowwood	*Cladrastis kentukea*	Native to US
H11			41″	Ginkgo	*Ginkgo biloba*	Non-native to US
H11			23″	Sawara, Japanese-false	*Chamaecyparis pisifera*	Non-native to US
H11			13″	Sawara, Japanese-false	*Chamaecyparis pisifera*	Non-native to US
H11			21″	Sawara, Japanese-false	*Chamaecyparis pisifera*	Non-native to US
H11			12″	Sawara, Japanese-false	*Chamaecyparis pisifera*	Non-native to US
H11		7″	10″	Maple, Japanese	*Acer palmatum*	Non-native to US
H11			12″	Magnolia, Saucer	*Magnolia x soulangiana*	Hybrid-France
H11	7″	8″	7″	Maple, Japanese	*Acer palmatum*	Non-native to US
H11			41″	Maple, Sugar	*Acer saccharum*	Native to SE PA
H11			10″	Hickory sp.	*Carya sp.*	Native to SE PA
H11			6″	Maple, Norway	*Acer platanoides*	Non-native to US
H11			16″	Sweetgum	*Liquidambar styraciflua*	Native to SE PA
H11			31″	Oak, Northern red	*Quercus rubra*	Native to SE PA
H11			35″	Oak, Scarlet	*Quercus stellata*	Native to SE PA
H11			34″	Oak, Swamp white	*Quercus bicolor*	Native to SE PA
H11			36″	Oak, White	*Quercus alba*	Native to SE PA
H11			35″	Oak, Chestnut	*Quercus prinus*	Native to SE PA
H11			45″	Oak, Black	*Quercus velutina*	Native to SE PA
H11			36″	Fir sp.	*Abies sp.*	
H12		32″	37″	Chestnut, Chinese	*Castanea mollissima*	Non-native to US
H14	9″	12″	10″	Walnut, Black	*Juglans nigra*	Native to SE PA
H14			14″	Walnut, Black	*Juglans nigra*	Native to SE PA
H14			18″	Walnut, Black	*Juglans nigra*	Native to SE PA
H14			14″	Walnut, Black	*Juglans nigra*	Native to SE PA
H14			14″	Maple, Norway	*Acer platanoides*	Non-native to US
H14			12″	Maple, Norway	*Acer platanoides*	Non-native to US
H14			15″	Maple, Norway	*Acer platanoides*	Non-native to US
H14			14″	Maple, Norway	*Acer platanoides*	Non-native to US
H14			13″	Walnut, Black	*Juglans nigra*	Native to SE PA
H14			13″	Walnut, Black	*Juglans nigra*	Native to SE PA
H14			14″	Walnut, Black	*Juglans nigra*	Native to SE PA

****** Tree removed after Inventory was made:**

****H10	****	46″	Maple, Norway	*Acer platanoides*	Non-native to US

Oakbourne Park

APPENDIX L

WILDLIFE INFORMATION

For wildlife, plants are the ultimate source of all their food and for most of their shelter. As the forests of Westtown Township, Chester County and surrounding areas become more fragmented or eradicated due to development and other reasons, **Oakbourne Park becomes increasingly more important each day**.

Wildlife offer multiple benefits to humans. Non-consumptive benefits include watching wildlife and wildlife photography and both are rapidly growing in popularity. Observing birds is the fastest growing avocation, photographing and sketching them is growing too, followed by observing mammals. As these interest people more and more, so is the watching and studying of butterflies.

The simple enjoyment of watching wildlife, adding a bird to a lifetime list, or perhaps feeding a squirrel or two can be very relaxing. Places to do this are fast disappearing. For whatever the reason, there are many benefits in attracting more wildlife to Oakbourne. Many opportunities exist but perhaps the two easiest to satisfy are for the dual reasons of:

- providing more food and shelter to benefit wildlife,
- and to attract more wildlife species and numbers for watching purposes.

These goals can be accomplished by planting trees, shrubs, wildflowers, and herbs known to offer values to birds, butterflies and small mammals. Shrubs can be planted along forest edges, along the un-named run from the pond. Young shade tolerant seedling trees or saplings need be planted in the forest Tracts to restore the proper balance of age and size classes and provide more wildlife foods

Selected shrubs, herbs, and wildflowers known to attract butterflies and feed their larvae can be planted as a butterfly garden in a sunny spot on the Mansion grounds. Trees and shrubs, known to offer shelter and food for wildlife should be added to the Arboretum, as well.

See the following pages for information about attracting wildlife:

Native Shrubs for Northeastern Wildlife

This list, which includes a few small trees, is derived from a handbook* about shrubs and vines that are important to wild birds and mammals for food and protective cover.

Common Name	Scientific Name	Common Name	Scientific Name
Alder, speckled	*Alnus rugosa*	Huckleberry, black	*Gaylussica baccata*
Alder, hazel	*Alnus seriate*	Huckleberry, box	*Gaylussica brachyara*
Blueberry, highbush	*Vaccinium angustifolium*	Huckleberry, dwarf	*Gaylussica dumosa*
Blueberry, lowbush	*Vaccinium corymbosum*	Laurel, mountain	*Kalmia latifolia*
Wintergreen, checkerberry	*Gaulthera procumbens*	Maple, mountain	*Acer spicatum*
Chokecherry, common	*Prunus virginiana*	Mountain-ash, American	*Acer americana*
Cherry, pin	*Prunus pensylvanicum*	Oak, bear	*Quercus ilicifolia*
Dogwood, flowering	*Cornus florida*	Rhododendron, rosebay	*Rhododendron maximum*
Dogwood, alternate-leaf	*Cornus alternifolia*	Serviceberry, downy (Shadbush)	*Amelanchier arborea*
Dogwood, red-osier	*Cornus stolonifera*	Meadowsweet, broadleaf	*Spirea latifolia*
Dogwood, roundleaf	*Cornus rugosa*	Meadowsweet, narrowleaf	*Spirea alba*
Dogwood, silky	*Cornus amomum*	Spirea, dwarf	*Spirea corymbosa*
Elder, American	*Sambucus canadensis*	Spirea, hardhack (Steeplebush)	*Spirea tomentosa*
Elder, scarlet	*Sambucus pubens*	Spirea, Virginia	*Spirea virginiana*
Hawthorne sp.	*Crataegus sp.*	Sumac, smooth	*Rhus glabra*
Hazel, American	*Corylus America*	Sumac, staghorn	*Rhus typhinia*
Hazel, beaked	*Corylus cornuta*	Witch-hazel	*Hamamelis virginiana*
Hophornbeam, eastern	*Ostrya virginiana*	Yew, Canada	*Taxus canadensis*

Only a few of these plants will be found at Garden Centers specializing in plants for the homeowner.

The plants are generally available from nurseries that specialize in growing native species for environmental purposes. Here are two sources for many of these native plants.

Octoraro Native Plant Nursery — Phone 717-529-3160
6125 Street Road,
Kirkwood, PA 17536-9647

Sylva Native Nursery and Seed Co. — Phone 717-227-0486.
1683 Sieling Farm Road
New Freedom, PA 17349.

* **Reference:**
The Handbook is a USDA Forest Service General Technical Report NE-9, published in 1974, ***Shrubs and Vines for Northeastern Wildlife*** by the Northeastern Forest Experiment Station and the Association of Northeast Game, Fish and Conservation Commissioners.

Deer *Resistant Vegetation

Common Name	Scientific Name
TREES	
Boxelder	*Acer negundo*
Catalpa sp.	*Catalpa sp.*
Coffeetree, Kentucky	*Gymnocladus dioica*
Columbine	*Aquilegia*
False-cypress	*Chamaecyparis sp*
Fir sp.	*Abies sp.*
Hackberry, common	*Celtis occidentalis*
Hawthorn sp.	*Crataegus sp.*
Holly sp.	*Ilex sp.*
Honeylocust, thornless	*Gleditsia triacanthos var. inermis*
Juniper sp.	*Juniperus sp.*
Larch, European	*Larix decidua*
Locust, black	*Robinia pseudoacacia*
Maidenhair tree	*Ginkgo biloba*
Osage orange	*Maclura pomifera*
Pine sp.	*Pinus sp.*
Redbud, eastern	*Cercis canadensis.*
Smoketree, common	*Cotinus coggygria*
Spruce sp.	*Picea sp.*
SHRUBS	
Barberry sp. (Japanese barberry not recommended in forests)	*Berberis sp.*
Boxwood, sp.	*Buxus sp.*
Broom, Scotch	*Cytisus scoparius*
Lilac, common	*Syringa vulgaris*
Rhododendron, sp.	*Rhododendron sp.*
Snowberry	*Symphoricarpos albus*
HERBACEOUS PLANTS	
Bugleweed	*Ajuga reptans*
Daffodils and narcissus	*Narcissus Sp.*
Daphne	*Daphne mezereum.*
Flossflower	*Ageratum houstonianum*
Foxglove, Common	*Digitalis purperea*
Hemerocallis sp.	*Daylily sp.*
Iris	*Iris sp.*
Larkspur	*Delphinium elatum*
Lupine	*Lupinus sp.*
Oriental Poppy	*Papaver orientalis*
Spirea, bluemist (Bluebeard)	*Caryopteris incana*
Tree peony	*Paeonia suffruticosa*
Tulip sp.	*Tulipa sp.*
Yucca sp.	*Yucca sp.*

***Note:** No plants are deer proof.
If they are hungry enough, deer will browse most all trees, shrubs, and herbaceous plants.

References:
This list of vegetation suited to SE Pennsylvania conditions is derived from lists by Pennsylvania State University and Colorado State University.

Butterfly Gardens

Butterfly gardens are a very popular garden feature. They can be an educational delight, a place for people to sit and enjoy a variety of fluttering bits of color, or a place for serious study of different butterfly species and their habits. More importantly, butterfly habitats and food sources are disappearing due to development and general gardening techniques and Oakbourne can play a vital role in providing food and habitat for butterflies

Important Characteristics of a Butterfly Garden

- A combination of plants that butterflies use in each stage of their life cycles:

  Egg stage (which requires a place to lay eggs that will provide food for larvae)
  Larval stage (caterpillars)
  Pupa stage (cocoon)
  Adult stage (butterfly)

- Flowering plants that provide nectar to attract the adults.
- A variety of plants that will bloom at different times in a season to attract a wider variety of butterflies over a longer period of time.
- Provide clusters of species and create a garden of different colors and flower heights.
- Provide a mixture of annuals, perennials, and biennials.
- Most caterpillars are specific as to what they will eat and butterflies lay their eggs on caterpillar food plants.

Caterpillar Food Plants

Common Name	Scientific Name	Bloom Time
Chokecherry, common	*Prunus virginiana*	Spring
Parsley	*Petroselinum crispum*	Summer
Dill	*Anethum gravolens*	Summer and fall
Milkweed, common	*Asclepias syriaca*	Summer and fall

- A combination of these 5 shrubs will provide blooms and nectar for butterflies from spring through fall.

Shrubs to Attract Butterflies

Common Name	Scientific Name	Bloom Time
Lilac	*Syringa vulgaris and other sp.*	Spring
Viburnum	*Viburnum dentata and other sp.*	Spring and summer
Spirea, meadowsweet	*Spirea latifolia*	Summer
Butterfly bush	*Buddelia davidii and other sp.*	Late summer and fall
Spirea, bluemist (bluebeard)	*Caryopteris incana*	Late summer and fall

- Plant the garden in a sunny place for best blooms and provide rocks for butterflies to sun themselves.
- It is also important to provide shelter places for butterflies to roost at night or during cloudy or rainy weather. Butterfly houses are one type of shelter. Tall trees as well as a variety of shrubs and other plants are also effective.
- Do not use pesticides in or near butterfly gardens.

Plants Recommended for SE Pennsylvania Butterfly Gardens

Common Name	Scientific Name	Bloom Time
Bee balm	*Monarda didyma*	Late June to August
Black-eyed Susan	*Rudbeckia flava*	Summer to fall
China pink	*Dianthus* chinensis	Early summer to fall
Coneflower, purple	*Echinacea purpurea*	July to September
Coreopsis sp.	*Coreopsis sp.*	Spring to fall
Cosmos sp.	*Cosmos*	Late summer to fall
Gaillardia	*Gaillardia pullchella*	Summer
Gayfeather, tall	*Liatris scariosa*	Mid summer to late fall
Gomphrena	*Gomphrena globosa*	Summer to fall
Joe Pye Weed	*Eupatorium maculatum*	Mid summer to early fall
Lupine	*Lupinus sp.*	June
Maltese Cross	*Lychnis chalcedonica*	June-July
Obedient plant	*Physotegia virginiana*	July to September
Penstemon	*Penstemon sp.*	June to August
Phlox	*Phlox sp.*	July to September
Pincushion flower	*Scabiosa atropurpurea*	July to frost
Salvia	*Salvia sp.*	June to August
Sneezeweed	*Helenium autumnale*	Late summer to fall
Stonecrop, showy	*Sedum spectibile*	August to frost
Sunflower heliopsis	*Heliopsis helianthoides*	Summer to fall
Sunflower, common	*Helianthus annuus*	Summer to fall
Sunflower, Mexican	*Tithonia rotundifolia*	July to frost
Verbena, garden	*Verbena sp.*	May to October
Viola	*Viola odorata*	April and May
Yarrow	*Achellia lantana*	Spring
Zinnia	*Zinnia elegans*	June to August

REFERENCES for Vegetation Management

Title of Reference:	# of pages
• **Control of Invasive Non-Native Plants**	**11** pages
• **Control of Autumn Olive, Multiflora Rose, and Tartarian Honeysuckle Chemical Information**	**5** pages
• **Black Jetbead** *Rhodotypos scandens* — a poisonous plant	**2** pages

Charles J. Newlon
Forestry & Education Consultant

2 Irving Lane
Wallingford, PA 19086-6677
Phone: 610-872-6019
E-mail: cbnewlon@comcast.net
Fax: 610-872-2994

Westtown Township
Attention: Michael Cotter, Township Manager
1039 Wilmington Pike
Westtown, PA 19395

Bid Proposal for preparing and placing tree identification signs on the Trees of Oakbourne Arboretum

Preparation and Procurement of Signs: (Sample signs are available.)

- Provide **192 arboretum-style tree identification signs** of anodized aluminum.
  - 032'' thick and 3'' x 5'' in dimension, matte-black background with silver colored letters.
  - Each sign will have two holes for attaching to the tree with screws.
  - The horizontal signs will accommodate 3 lines of text: —
    - The 1st line for the Common Name (i.e. **Northern Red Oak**).
    - The 2nd line for the *Scientific Name* (i.e. *Quercus rubra*).
    - The 3rd line could read **Oakbourne Park**; and if desired, at no extra cost, the Westtown Water Tower logo could be added at the left of the text.

Total cost of the 192 signs, with text and logo, and .032'' thick..... $1,862.50
or for:
Total cost for the same number of 3'' x 5'' signs, but thicker signs at .063''.....$2,150.50

Placement of Signs:

- Provide services to attach the signs with stainless steel screws and stainless steel expansion springs (which allow for expansion of the tree trunk).
- All signs will be placed on the north-facing side of the tree trunk. When the signs face in the same direction, it is much easier for the viewer to locate the signs. This direction also lessens any effect of sunlight on the weather resistant signs.
- All signs will be placed at 4 ½ feet from the ground, the same standard height where the diameter of a tree is measured — at DBH or Diameter Breast High.
- The signs on the small trees (ie. a 2'' diameter blue spruce) will be attached with a tie, looped loosely around a north-facing branch.

Total cost for services to properly attach the ID signs to the correct trees.....$1,140.00

- Providing a total of 192 — .032''thick signs $1,862.50
- Attaching the 192-- .032" signs..... 1,140.00

Grand total with the .032'' thick signs.....**$3,002.50**

- Providing a total of 192-- .063" thick signs $2,150.50
- Attaching the 192-- .063" signs.....1,140.00

Grand total with the .063'' thick signs..... **$3,290.50**

Charles J. Newlon, Certified Forester, and Duane L. Green, Registered Forester, will provide materials and complete this project by November 15, 2002, if authorized by September 1, 2002.

Sincerely,

Charles J. Newlon, Certified Forester
August 14, 2002

APPENDIX J: ARBNET INFORMATION

The Morton Arboretum
Office of the President and Chief Executive Officer
4100 Illinois Route 53
Lisle, IL 60532-1293

May 15, 2019

Mr. Robert Pingar
Oakbourne Park and Arboretum
Attn: Friends of Oakbourne
Westown Township
1039 Wilmington Pike
West Chester, PA 19382

Dear Mr. Pingar,

Congratulations on achieving Arboretum Accreditation – Level I for Oakbourne Park and Arboretum.

This recognition of professional standards and capabilities is an important milestone for your organization, as well as represents the advancement of goals specific to tree-focused public gardens. As part of the Morton Register of Arboreta, you have an important role in our shared purpose to plant and conserve trees, and accreditation in this work acknowledges your commitment to and fulfillment of professional criteria.

I encourage you to participate in ArbNet, the interactive community of arboreta, to share knowledge, experience, and other resources that help us as arboreta to carry out our collective mission for a greener, healthier, and more beautiful world.

Again, congratulations on your accreditation, and for exemplifying standards of excellence in our arboretum community.

Sincerely,

Gerard T. Donnelly, PhD
President and CEO

630-719-2401
Fax 630-719-2450
donnelly@mortonarb.org

ArbNet
THE INTERACTIVE COMMUNITY of ARBORETA

ARBORETUM ACCREDITATION PROGRAM

ArbNet created its Arboretum Accreditation Program to establish and share a widely recognized set of industry standards for the purpose of unifying the arboretum community. No other international program of accreditation exists that is specific to arboreta. Any arboretum or public garden with a substantial focus on woody plants may apply. Accreditation is based on self-assessment and documentation of an arboretum's level of achievement of accreditation standards, including planning, governance, number of species, staff or volunteer support, education and public programming, and tree science research and conservation. The entire program is free of charge.

Apply for Accreditation

The ArbNet Arboretum Accreditation Program

- Recognizes arboreta at various levels of development, capacity, and professionalism
- Fosters professionalism of arboreta worldwide
- Enables collaboration in scientific, collections, and conservation activities
- Advances the planting, study, and consevation of trees.

Benefits of accreditation

- Be recognized for achievement of specified levels of professional practice.
- Work toward higher levels of professional standards once accredited.
- Identify other organizations at similar or higher levels of accreditation to provide comparative benchmarks and models for further achievement.
- Earn distinction in your community, university, college, or government agency.
- Exert leadership and influence by serving as a model to encourage professional development in other organizations.
- Identify opportunities for collaboration with other arboreta for scientific, collections, or conservation activities.

Examples of institutions that may be accredited arboreta

- arboreta and botanic gardens
- historic properties
- college campuses

- cemeteries
- zoos
- city tree collections
- corporate campuses
- school property
- golf course
- nature reserves
- municipal parks

For specific information on which level to pursue, please visit the levels of accreditation page.

View map of all accredited arboreta

Map of Accredited Arboreta

View listing of all accredited arboreta

ACCREDITATION CRITERIA

APPLY FOR ACCREDITATION

LEVEL I CRITERIA

LEVEL II CRITERIA

LEVEL III CRITERIA

LEVEL IV CRITERIA

ArbNet
THE INTERACTIVE COMMUNITY of ARBORETA

Search

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HOME > ABOUT ARBNET > PARTNERS

PARTNERS

GLOBAL TREES CAMPAIGN

The Global Trees Campaign is a joint initiative between Fauna & Flora International (FFI) and Botanic Gardens Conservation International (BGCI). It is the only international program dedicated to saving the world's threatened tree species. GTC does this work by providing resources/ training programs, supporting tree conservation projects globally, raising awareness of the need for tree conservation, and prioritizing trees most at risk of extinction through the IUCN/SSC Global Tree Specialist Group's tree red listing program. ArbNet's Level IV Arboreta actively participate in ex situ and in situ conservation in line with GTC's mission.

BGCI
Plants for the Planet

BGCI supports the development and implementation of the Global Strategy for Plant Conservation (GSPC) at a global, regional, national, and local level. We work directly with our members and other plant conservation organizations, carrying out threat assessments, seed conservation, ecological restoration, plant health and education projects around the world. Botanic Gardens Conservation International (BGCI) was established in 1987 to link the botanic gardens of the world in a global network for plant conservation. BGCI is an independent UK charity with its head office located at the Royal Botanic Gardens, Kew.

American Public Gardens Association

American Public Gardens Association connects the field of public horticulture to strengthen collaboration and to enhance its impact, protects their natural heritage and ensures the future of public horticulture through pioneering programs and advocacy and champions the role of public horticulture in improving the quality of life for all.

Plant Collections Network
AMERICAN PUBLIC GARDENS ASSOCIATION

Plant Collections Network is a long-term collaboration between the American Public Gardens Association and the USDA-Agricultural Research Service. Formerly the North American Plant Collections Consortium (NAPCC), its first collections were accredited in 1996. The network coordinates a continent-wide approach to plant germplasm preservation, and promotes excellence in plant collections management.

The American Chestnut Foundation (TACF) is committed to supporting all approaches toward the ultimate restoration of the American chestnut tree since its inception in 1983.

ABOUT ARBNET

MISSION AND HISTORY

PARTNERS

TESTIMONIALS

CONTACT US

Complete your online application and be recognized for achievement of specified levels of professional practice.

View our listing of ArbNet accredited arboreta. Arboreta are accredited at different levels of accreditation depending on degrees of development, capacity, and professionalism.

ArbNet
c/o The Morton Arboretum
4100 Illinois Route 53
Lisle, IL 60532
USA
630-310-7013

MISSION AND HISTORY

Mission

The mission of ArbNet is to foster the establishment and professionalism of arboreta; identify arboreta capable of participating or collaborating in certain scientific, collections, or conservation activity; and advance the planting and conservation of trees. To fulfill its mission, ArbNet provides:

- Helpful resources to improve operations, research, conservation, education.
- Arboretum-focused news and events.
- The opportunity to connect with other arboreta to collaborate with in scientific, collections, and conservation activities.
- A broad network to help advance the planting, care, and conservation of trees.
- An online forum for tree-focused discussions.

History

In April 2011, The Morton Arboretum launched ArbNet and arbnet.org, an interactive community of arboreta that is designed to support the common purposes and interests of tree-focused public gardens. The ArbNet Arboretum Accreditation Program which establishes specific standards of professional practice and offers four levels of accreditation. We created the Morton Register of Arboreta – a list and database of arboreta and other public gardens that have a substantial focus on woody plants.

Since its inception, ArbNet has accredited over 180 arboreta. Through collaboration with partners, ArbNet has progressed on several of its goals like working with BGCI to accredit international arboreta, launching a BGCI/ArbNet Partnership Program along with establishing grants within these partnerships, offering a Capacity Building Grant in 2016 and supporting the American Chestnut Foundation in an effort to replenish the nearly extinct tree by re-establishing a disease-resistant hybrid in its native Appalachian region.

"Individuals and organizations have long sought definitions, standards, and means of establishing an official or legitimate arboretum," according to Dr. Gerard T. Donnelly, President and CEO of The Morton Arboretum, which sponsors and coordinates ArbNet. "No other national or international program of accreditation exists that is specific to arboreta," he said.

Part 3 — ARBORETUM

Originally, the Forest and Tree Stewardship Plan was to be limited to the native forests on the property. But once the inventory began and after talking with Township Roadmaster Mark Gross, the Consultants realized that the **Arboretum** was a unique historical collection of trees. Apparently no record exists that lists the names of all the trees in the Arboretum on the greater Mansion grounds. Therefore we inventoried the Arboretum trees, recorded their names, and made a standard Arboretum grid map similar to the one used by **Scott Arboretum at Swarthmore College**. We noted the locations of the trees in a system of 250-foot square grid map.

See **APPENDIX J — Arboretum Map** and **APPENDIX K — List of Trees in the Arboretum**.

It is apparent that the Arboretum is a fine contemporary and historical resource for the Township. It is available for people who are interested in seeing how different trees might look in their yards, for observing which birds frequent which species of trees, or studying how to identify trees by their leaves, bark, or other features.

A total of **192 trees**, representing **59 tree species**, were inventoried in the Arboretum.

Once the new entrance road is completed, there is a fine opportunity to expand the number of trees and species in the Arboretum. There is adequate space to add many native trees, non-invasive exotic trees, and flowering trees to the grounds while preserving outdoor recreation opportunities. The unique resource provides a potential opportunity to provide educational programs, tours, brochures, and environmental training sessions associated with the present or expanded Arboretum. It is sure to be of interest to many visitors especially if the trees are identified by nametags.

Recommendations for the Arboretum

- **Place Arboretum style nametags*** with common and scientific names on each of the trees on the greater Mansion grounds.
  (*Nametags are approx. 3'' x 5'' — anodized aluminum, attached to the tree trunk with stainless steel screws equipped with springs allowing for tree growth.
- **Provide an Oakbourne Arboretum Check List Brochure** to interested visitors who wish to check-off trees as they learn to identify the trees by their common and scientific names.
- **Provide a plan for expanding the Arboretum by planting new trees.** For a truly scenic, educational, and an outstanding Arboretum, a **Plan** should be made with these needs in mind:
  - Plant trees in selected areas throughout the Mansion grounds.
  - Add a variety of trees native to SE Pennsylvania and non-invasive exotic trees known to grow and thrive in this USDA Planting Zone.
  - Plant trees to line both sides of the new entrance road in the style of the existing road.
  - Keep areas open for recreation gatherings and sports.
  - Design to provide groupings of trees to reduce the area in need of mowing and excessive maneuvering of the mowing equipment.
  - Reduce areas mowed to help reduce air pollution.

The Consultants would be pleased to bid on the fulfillment of any or all of these recommendations.

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APPENDIX K: PUBLIC MEETING COMMENTS

The following selected comments were received by the Township, via emails following the December 15, 2020 public meeting.

Subject: South Concord Road Cope Tract Cornfield Development

To whom it concerns:

We are writing to you and pleading for you to stop South Concord Road Cope Tract Cornfield development plans as we are totally against it.

With all that is going on in today's climate and trying to keep up with our daily lives, especially managing through the coronavirus and all the stresses and struggles that come with it, we feel we were not properly notified Cope Tract Cornfield was to be developed. Any emails received specifically referred to Oakbourne Park itself. For instance, your survey, which we completed, asks to hear from us and "...what we think about Oakbourne Park to help better understand what is important to you. We want to hear any ideas you have to make the park better." Again, this survey did not mention Cope Tract Cornfield development plans. Like us, many of the surrounding neighbors of Oakbourne Park and Cope Tract Cornfield may not be aware of this proposed development. We do not often check Westtown's website nor are we set up for a Facebook account.

We moved to Westtown Township because of the beautiful open space environment and all its natural animal habitat. After all the years we have lived here, we still get excited seeing deer, fox, birds and other animals on our property and in our neighborhood. This development will destroy one of the last open spaces in Westtown. Sadly it will harm the natural animal habitat and will also impede our neighborhood privacy and security.

Also, we live directly across from Oakbourne Park. People use our street, South Concord Road, as a cut through between Route 202 and Route 1. As it is, South Concord Road has quite a bit of traffic making it difficult for us and our neighbor to safely enter and exit our driveways. Not only that, the road driving conditions are horrendous and dangerous for which we reported and was informed it was the states responsibily to repair. The patch-job road repair at Oakbourne Park and Cope Tract Cornfield made it even more dangerous to travel. This master plan for Cope Tract Cornfield will increase traffic significantly and open the space for future development. It would be in the best interest and safety of Westtown residents and those who travel our roads to use the development money towards Westtown's road maintenance along with other much needed improvements.

Again, we are totally against proceeding with this development at Cope Tract Cornfield. We would appreciate more communication to those neighbors surrounding Oakbourne Park and Cope Tract Cornfield and additional meetings scheduled so that we can voice our concern.

Subject: Park plan proposal

Dear supervisors,

I have a few problems with the proposal for the Oakbourne parks. Unfortunately responding in person is not possible and virtual is not the same as a large group responding to an open meeting. There are numerous residents who are opposed to any changes to the park, and would prefer you maintain what we have.

For instance, the trails on the Cope side are unusable much of the summer due to ticks and the trail that receives limited mowing. The road to the parking area is deteriorating substantially and the remnants and stone wash out onto my property. I've paved 60 feet of the worst at the bottom. That is a twp problem, not mine.

Fifty more parking spaces? We have runoff problems now. Move the flag pole? It's perfect now. Dog park? Liability, smell, noise maintenance? Relocating the gardens means waterlines.

I recall most respondents to the survey (limited as that was)were in favor of the agricultural zones left as is.

The expansion of services will only attract added taxes, necessary manpower, and other than twp residents i.e. those from the new Agway apartments.

Please don't change the nature of this twp. We already provide adequate services for OUR residents. The median age is increasing and need no additional taxation.

Thank you for consideration.

Subject: Proposed use of Cope Tract

Dear Supervisors,

As thirty year property owners on South Concord Road in Westtown Township, we would like to voice our strong opposition to the development of the Cope Tract.

South Concord Road as a State owned road is not well maintained, and heavily travelled already. Developing this tract would add to the traffic, and potential traffic accidents.

Has the Township considered line of sight requirements, the need for an additional driveway, impact upon all those who live near the property? Will the State require a traffic light? So many people already exceed the 35mph speed limit set by the State. Is there a plan to ask the State to abandon ownership of the road and have the Township take responsibility, and reduce the speed limit?

Because a firm was hired to conduct a survey and develop a plan, doesn't mean their plan needs to be implemented in part or at all.

Please reconsider this proposed plan. Consider the cost vs the benefit. Is disc golf necessary? Fifty parking spaces is a lot considering the site itself and the topography.

Not only is there an initial investment, but continuing expense related to all.

We chose to make Westtown Township our home for the open space and natural beauty. The more the land is developed, the fewer birds, animals and people will find enjoyment.

Subject: Re: Park and Rec meeting and approvals Questions

When is the Board of Supervisors meeting for residents.

As previously mentioned notification to residents of the prior meetings and Master Plan was NOT sufficient. This was dissatisfaction expressed very clearly in the November meeting. I only new about it from my husband as it was mentioned in the planning meeting.

We believe as stated, that the Park and Rec committee needs to further and more effectively and respectfully communicate these plans to the public and hold an additional meeting or 2.

I the last meeting where the consultants presented and in other communication I have received, we were told this MASTER plan was going to be presented to the Board of Supervisors for adoption/approval. It was conveyed in the last meeting this was to be done this week.

Residents want to express there lack of approval for the part of the plan that proposes plans for COPE and other activities.

We need a voice before any approval.

When is our opportunity for a public forum.

Thank You,

Subject: Re: Park and Rec meeting and approvals

Good morning,

A Park and Rec meeting is slated for tomorrow evening December 8, however there is no information on how to attend this meeting via zoom as is described under the supervisors meetings. Can you please have somebody update the website so residents know how to get into attend this meeting?

Additionally the supervisors meeting this evening does not state anything about the park and rec proposal for Oakbourne. Can you please confirm this is not up for a VOTE this evening?

Thank you,

Subject: Veterans Memorial

My comment to the Oakbourne Park planners is to add **"potential Veterans' memorial" site** to the flag pole plaza.

Subject: Extremely Concerned Homeowner - Oakbourne Park Master Plan

Hello,

It was recently raised to my attention the township has developed, and is in the near final stages of, a plan to reform/develop the Oakbourne Park. This is extremely concerning to me considering I am a tax paying resident that the Township didn't properly notify homeowners of these drastic changes. Thankfully we live in a well-connected neighborhood and was made aware of these changes by a neighbor. I took time this weekend to review the proposed plan published here: https://www.westtownpa.org/wp-content/uploads/2020/11/Oakbourne_11.10-public-mtg-reduced.pdf in great detail and here are my specific concerns:

1. As mentioned above, our household did not receive any type of communication there was a proposed development plan underway for this parcel of land. As a taxpayer in this community I would expect AMPLE notification of any changes that could possibly impose on our everyday lives living within the township. The presentation notes the first meeting was held on 9/15/20. Our household does receive a copy of the Westtown Gazette and does read through this newsletter when received. There was no mention of this project in the newsletter.
2. Our household did not receive any form of communication from the township there was a survey published to gather feedback on the proposed project. If we had received notification our household would have responded.
3. The survey results - 437 respondents out of 11k "surveyed". These survey results are in no way valid sampling of the homeowners who live in the area. The response rate the township received was 3% of the population. Please help me understand how this represents the majority of homeowners? Also please defer back to bullet point #2. How can the township validate that all homeowners were sent the survey to properly respond? Is the township/planning committee fabricating these numbers to falsify the responses of homeowners? I asked several neighbors myself if they were aware of this plan and/or survey and none of them were made aware.
4. I have little issues with the enlargement plans #1 or #2 as these are already development community spaces that are used every day. However, it would be helpful to understand the specific suggestions the township is making to these areas before I can make a final decision. I realize there's likely an opportunity to rehab some of the existing structures from general wear and tear which would keep the zones/areas safe for recreational use.

5. I think the proposed plan for the playground area is a cover up to secure funds to develop other areas. I do not feel the pictures displayed in the presentation are an actual representation of how the township "plans" to improve this area.
6. I am completely opposed to enlargement plans #3 and #4 as well as any additional parking. As a resident within walking distance to the park, developing these areas would be a complete infringement on our privacy and invitation to increased traffic to our "no outlet" streets. We chose our home because we did NOT want to live on a busy road and we felt our family would be safer on a "no outlet" street. By adding additional parks such as a dog run and or frisbie golf course, that will inherently increase the traffic in our areas as well as invite foreigners to park on our "no outlet" street(s) when the parking lot is full. As a mother of 2, this does not sit well with me knowing that strangers could be parking in front of our house, walking our streets or speed down our streets where my children play. I do not feel the township has considered the thoughts and feelings of those who live on dead end streets, specifically, and only care to improve the township's image. Not to mention the headaches of when the construction actually starts....
7. Why can't the township use this money towards something to improve the neighborhood infrastructure? The majority of Westtown lacks everyday conveniences such as Peco GAS, Public Sewer and Public Water...instead we're forced to maintenance our own systems year over year only to be hit with a massive bill when something fails. It would be nice if we could have some improvement to our township that didn't involve drawing outsiders in.

I'm sure you've concluded from my comments that overall I'm not happy with this project nor how the township has handled it. And I plan to continue this fight until there's a more fair plan proposed for the homeowners neighboring the park.

Please let me know when the next park meeting is scheduled and I will plan to attend.

Thank you,

Hello,

My name is. I am a Westtown resident living on Windy knoll road for the last three years. My wife and I have a young family and love raising our children in such a beautiful place since we moved here three years ago. One of our favorite activities to do when the weather is nice is to take a family hike “down to the creek” just passed the corn fields across from Oakbourne park.

My wife and I received information from a neighbor that there are plans in the making for commercial expansion of Oakbourne park. The expansion plans that I have read include clearing the land and heavy construction over the land that our family enjoys our “creek walks” I also saw surveys that were already obtained from residents living in the area in support of this work. I can say that I received no literature from the township regarding this project, only the information shared by my neighbor.

I am reaching out to you, the board of township supervisors, to express my displeasure that I was not notified of these plans. As a tax paying resident, I expect notification of plans to complete major construction would have been shared with residents like myself and my family.

I am 100% against this project, as it will take away from the privacy that we enjoy behind the cornfields across from Oakbourne park. There are PLENTY of other parks in the area of Westtown/Thorbury that my family have found in the last three years living here. I ask that you please consider the opinions of opposed residents like myself that actually live in the project area prior to making a determination moving forward. Thank you.

Good morning.

I am writing to you to express my concern and thoughts about the current plan to develop Oakbourne Park and the Cope Tract.

The notice of these plans to the residents has been severely lacking as multiple residents who are directly impacted were unaware, and many residents probably still aren't aware of this project.

Notifications should be sent to each resident via mail, as not everyone follows Facebook, or reads the newsletter.

The fact that only approximately 427 residents responded to the survey out of the entire township should indicate that. And basing a project of this proposed scale and cost on those few results is irresponsible and unprofessional.

I just listened to the second meeting from November 10th, and the vagueness and uncertainty in the responses from the participants representing the Plan were both concerning and unsettling. Some of those responses were dismissive and showed a level of disrespect for the residents that will be greatly effected by these changes.

Nothing in the presentations anticipate the burden of additional Policing that some of these changes will require, given the increased vehicle and foot traffic associated with some of these proposed "ideas', such as the dog park and a disc golf course.

There appears to be are very few opportunities to capture revenue from any of the proposed improvements, thus, the financial weight will placed on the taxpayers.

The township has not scored great marks with recent tasks such as road improvement and resurfacing of local roads. The repair done to South Concord road directly in front of the park failed within months, and now the sunken portion of road is larger than before, creating a safety hazard for both lanes of traffic...several local roads have only been partially repaired or resurfaced.

This being said, a proposal of this scope will most likely only be partially done, and adjustments will need to be made in the future due to lack of input and planning at the beginning, which will cost additional Township funds.

There was discussion of requesting Grant based Government funds, but the answers surrounding that topic were speculative and not reassuring.

I imagine you are getting more emails and calls concerning this issue as more residents have been made aware by word of mouth, the danger with that being the lack of information given to residents and the proposed time frame to vote on this matter may create legal and financial issues for the township.

The scope of the proposed project is massive and with vague and unsure responses from the presenters, the time frame in which it is moving, and the lack of notice to residents, gives it the appearance of deception or duplicitous intentions of a small group, and not taking into consideration the impact to those residents directly effected by the project.

The vote to proceed should be delayed until all of the residents have been properly notified and allowed to provide input towards improving the Park.

Thank you for your time.

The following comments were provided by residents at the Westtown Township Board of Supervisors Regular Meeting held virtually via Zoom on Tuesday, January 19, 2021 at 7:30 PM

Gretta Flynn (1000 Windy Knoll Road) raised concerns about the potential development of the Copes Tract, as well as the renditions of the playground in the Oakbourne Park Master Plan. She stated that she has concerns about traffic and environmental impacts from potential Park improvements. She also expressed generalized concerns about the Township's communications about the Master Plan. Ms. De Wolf indicated that the Board does not plan to remove the Copes Tract from the Master Plan, but also has no intention to move any projects on that parcel forward. Mr. Pomerantz encouraged Ms. Flynn to express her concerns to the consultant via the Township Manager.

Linda McKissick (1017 S Concord Road) reiterated her concern from several meetings ago that there is a hunting stand in a tree in the Copes Tract. She also expressed her opposition to any development of the Copes Tract. Mr. Altshul stated that he would be in touch with Ms. McKissick about the hunting matter in the morning.

Ted Moon (1031 Carolyn Drive) expressed his opposition to development of the Copes Tract and his support for the preservation of open space.

Matt Griffiths (1058 Windy Knoll Road) expressed his opposition to development of the Copes Tract and raised concerns about increased traffic in that area. He asked what would happen if Oakbourne Park were not improved, to which Ms. De Wolf observed that the athletic facilities are currently in poor condition.

Bill Chesko (1025 S Concord Road) expressed concerns about stormwater coming from Oakbourne Park across South Concord Road. He noted that Mr. McCardell wants to continue to farm the Copes Tract. Mr. Chesko is also concerned about long-term maintenance costs associated with any improvements to the park.

Jason Chambers (633 James Drive) expressed opposition to the development of the Copes Tract and stated that he would pay for trash cans along the existing walking path.

Tom Foster (734 Westbourne Road) expressed concerns about the powers of the proposed Environmental Advisory Council, particularly with respect to entering private property and eminent domain. Mr. Yaw clarified that the Council would be purely advisory in nature and that more detail about the powers of the Council would be spelled out in by-laws that the Township Manager will draft.

Joe Giunta (634 James Drive) expressed his opposition to development of the Copes Tract, as the preservation of the environment and open spaces is a clear theme in the Township's recently adopted Comprehensive Plan.

Bob Bellucci (1090 Barnview Lane) expressed his opposition to development of the Copes Tract.

Jack Embick (189 Pheasant Run Road) recommended that the Master Plan be amended to recommend that the Copes Tract be maintained as it currently is.

APPENDIX L: PARK STUDY COMMITTEE MEETING MINUTES

Study Committee Meeting #1

Meeting Minutes

Westtown Township
Oakbourne Park Master Plan
Master Plan Study Committee
Study Committee Meeting #1
JMT Project No. 20-01283-001
June 25, 2020

The Study Committee Kickoff Meeting was held virtually on June 25, 2020 for the above referenced project. The following committee members were in attendance via zoom conference call:

Name	Organization	E-mail Address
Meghan Hanney	Committee member	
Catherine Gin	Committee member	
Patrick McDonough	Committee member	
Julie Weidinger	Committee member	
Gary Bevilaqua	Committee member	
Tom Sennett	Committee member	
Sharon Grubaugh	Committee member	
Tom Bare	Committee member	
Marshall Lerner	Committee member	
Chris Limbach	Committee member	
Joe Stratton	Committee member	
Pam Boulos	Committee member	
Mila Robinson	Township Project Manager	
Andrew Mears	JMT	
Matt Gallisdorfer	JMT	
Ann Toole	Toole Recreation Planning	

The purpose of the meeting was to provide an introduction of the project and explore the committee's vision, goals, and expectations for the park master plan.

The following items were discussed:

1. Welcome and Introductions – M. Robinson, welcomed the Master Plan Study Committee (MPSC) and asked the committee members to introduce themselves. The Committee members introduced themselves describing their interest in the project. Andrew Mears, PLA and Ann Toole, CPRP, CPP provided information about their credentials along with information about their previous work with the Township.

2. A Mears reviewed the master plan process, what a master plan is and discussed the characteristics of a good plan.

3. The steering committee role was discussed along with the communication flow chart for the project.

4. A Mears went over the collaboration folder that has been setup for document storage sharing with the Master Plan Committee. A link will be sent to each committee member with the meeting minutes. Members will be able to review and track the plan process but will not be able to edit or delete documents.

5. A. Mears reviewed the design team and the master plan project schedule which is anticipated for an 8-month duration. We will conduct an extensive public engagement process including interviews, focus groups, public meetings and pop-up events where possible. We will develop two or three plan options, cost estimates and potential phasing.
    a. Interviews with the farmer and the architect for the mansion restoration have already been completed.
        i. A summary of the key person interviews will be made available on the SharePoint site collaboration folder. The summary will be of general conclusions drawn by the design team and not tied to the individual interviewed.
    b. The selection of people for key person interviews will be developed with the assistance of the MPSC and Township Project Manager. The design team will conduct interviews with those currently identified and others as identified by the committee though the planning process.

6. Ann Toole reviewed the components of a great park and opened the floor to the MPSC for discussion.
    a. The MPSC talked about their own person experiences with the park, its strengths, weaknesses, and opportunities for improvement.

7. A. Mears reviewed the project boundary to confirm the limits of the park and noted that there were many restrictions associated with the individual parcels. The design team will be compiling the restrictions as this will need to be addressed in the planning of the park.

8. During the review of existing park area, MPSC members noted, commented, and discussed the following:
    a. The MPSC discussed the Gaudenzia property and how it fragments the park. A. Mears asked if the township has ever inquired about a potential land swap in order to change the entrance location to the Gaudenzia facility. M. Robinson said she was not sure and would look into this.

b. M. Robinson gave a little history of how the park lands have been acquired and an overview of some of the adjacent parcel owners.
c. M. Robinson noted that according to deed documents, the Township might have the first right to purchase the Gaudenzia property should it become available.
d. The park has a very tranquil and serene setting unlike other suburban park in the area. Those qualities are important and should be preserved.
e. No one uses Oakbourne when compared to other parks in surrounding areas and that is a tragedy.
f. There is a lack of seating at the Park.
g. The group discussed the many reasons the park is underutilized including the lack of awareness by residents, the quality of the facilities, the competition from other nearby parks, and safety and ADA concerns.
h. The park is currently poorly executed.
i. There are limited social aspects to Oakbourne Park.
j. The park is also an Arboretum and that should be reflected in the design.
k. This park should be different from those within the area that are visited by most. It should include "unique differentiators" to compliment a rustic nature of the park, for example a natural playground.
l. Shade must be included in the park especially the children's play areas.
m. There is lots of competition for good playgrounds in the area which is one reason people tend to go to other parks such as East Goshen, West Goshen, and Thornbury Parks. Oakbourne doesn't have to be one of those.
n. The park is fractured. It should be modernized and connected via pedestrian facilities while still keeping the tranquil aspects of the property.
o. Lots of people walk to this park from the surrounding neighborhoods. There are safety concerns with the crossing of Concord Road, Pleasant Grove Road and other streets surrounding the park.
p. There are several access points from the adjacent neighborhoods, some are marked but residents do not know what they are. These should be identified and incorporated in the master plan.
q. The park plan should make use of interpretive signage for the historic buildings.
r. Many residents do not know of the trails within the park. These need to be promoted more.
s. The question was raised if there was a budget established for the park improvements. It was noted that the master plan would be developed to include cost estimates for the improvements and outline phasing and implantation strategies. A specific budget would be identified for individual phases to assist the Township in planning for implementation and applying for grants.
t. Compared to other municipalities in the surrounding area, Westtown Township has done a poor job of applying and securing grants.
u. This is the time to dream big.

9. A. Mears reviewed the homework assignment for the next committee meeting. This assignment will set the stage for discussions regarding establishing a vision statement for the park. MPSC will self-organize to complete the homework assignment.

10. **Moving Forward** – The team will move ahead with interviews and deciding upon focus groups with the Township's Project Manager. Work to be composed for the next study committee meeting include:

- Committee Member Homework
- Complete Site Analysis
- Complete Key Person Interviews
- Schedule Focus Group Meetings
- Schedule Master Plan Study Committee Meeting #2
- Organize Oakbourne Park site visits for the committee members
- Schedule Public Meeting 1
- Work with Township Project Manager to determine Public Meeting logistics

The above represents a true and accurate account of the discussion during this meeting to the best of my knowledge. If there are any conflicts, misrepresentations, or omissions with the above statements, please contact the undersigned within ten (10) days of this date.

Andrew A. Mears

6.29.2020
Date

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Attendees
Project File

Meeting Minutes

Westtown Township
Oakbourne Park Master Plan
Master Plan Study Committee
Study Committee Meeting #2
JMT Project No. 20-01283-001
August 11, 2020

The Study Committee Kickoff Meeting was held virtually on August 11, 2020 for the above referenced project. The following committee members were in attendance via zoom conference call:

Name	Organization	E-mail Address
Meghan Hanney	Committee member	
Catherine Gin	Committee member	
Allison Corcoran	Committee member	
Julie Weidinger	Committee member	
Gary Bevilaqua	Committee member	
Tom Sennett	Committee member	
Sharon Grubaugh	Committee member	
Tom Bare	Committee member	
Marshall Lerner	Committee member	
Chris Limbach	Committee member	
Pam Boulos	Committee member	
Mila Robinson	Township Project Manager	
Andrew Mears	JMT	
Ann Toole	Toole Recreation Planning	

The purpose of the meeting was to review the preliminary conclusions of the site analysis and overview of the site view.

Agenda:

- Introductions
- Site Analysis Overview
- Summary of Homework Assignment
- Key Person Interview Summary
- Focus Group Meeting Summary
- Initial Thoughts
- Vision/Goals
- Committee Discussion
- Next Steps

The following items were discussed:

1. Regarding the Agenda: M.Robinson posted it as a calendar invitation. Some study committee members couldn't find it. It was noted that it was within the Outlook calendar. The committee requested it to be sent by email in the future.

2. Welcome and Introductions – M. Robinson, welcomed the Master Plan Study Committee (MPSC) and asked the committee members to introduce themselves. The Committee members introduced themselves describing their interest in the project. Andrew Mears, PLA and Ann Toole, CPRP, CPP provided information about their credentials along with information about their previous work with the Township.

3. A Mears presented an overview of the site analysis and preliminary conclusions which included:
    a. Photo of 843-acre Central Park as a precedent project. Oakbourne Park (OP) is 143 acres. Big picture is that OP is a unique treasure unlike any other park around. History, Culture, Trails, Woodlands, Sports, Stream and more. Things are operated independently and don't work in concert with one another. Need to have all elements of the park working towards a common vision.
        i. The park and grounds are an example of the Country Place era.
        ii. Regionally: Area has many municipal parks and preserves that are well-known. Variety of facilities are available. Within 5 miles, a number of community facilities offer events and other facilities. The message we have heard is that we must not replicate East Goshen's Community Park. OP is nothing like that and should never be considered as such. It's important to preserve the park's unique image and develop a distinct identity.
        iii. Cultural Landscape – Sites shaped by human involvement.
        iv. Country Place Era – 1890-1930. Wealthy Americans built vast estates with extensive gardens and views were important. Olmsted designed Central Park for the people during this time.
            1. 6 Key Design Principles relate to OP. Arrival sequence. Views. Location of site features and siting of the mansion to take advantage of the great views of the countryside. The grounds and the house together make it unique: it's everything working together.
        v. Memorial – ASLA policy statement on memorials. How we design them is important and needs to tie to the vision of OP. Everyone has a memorial: can we

do one that has a better place and is more fitting here to advance the vision of the park? The memorial should not be one that could be anywhere. There are ways to make this work both for the memorial and the park. Flight 93 memorial is an experience. The siting and serenity of the memorial engages people. Look at memorials that really affect you and are not ones you just pass by.

vi. Basketball Court – 40 kids here that have developed and run their own league over the last 6 years. The ruins could be removed but then you would have a basketball court like anywhere else in the county, or you make the ruins part of the court and include it as a plaza and overview. The kids already use it as a staging area and love the shade and view of the court. The space can be optimized to tie it to the site's history.

b. Photo Inventory
   i. Entry Drive is well-done and fits into the site but gets confusing at Mansion area. Need address circulation patterns, parking, directional signage and flow patterns.
   ii. Garden – well taken care of. High use area.
   iii. Playground gets used but is very basic.
   iv. Woods are very nice. Pond is overgrown and not utilized. Could be restored and brought back as a great asset.
   v. Trails – get use but not clearly defined. Some roads are paved, and some are goat paths, some are used for maintenance and it is not clear which is which for the average user.
   vi. Athletic Area – Programmed and maintained by the leagues. Fields are well maintained. It's like its own park with its own entrance and parking. The separation of the two park areas isn't as conspicuous because of the landscaping and grade changes. It's not as bad as thought and described.
   vii. Tennis Courts – currently being rehabbed. Parking area has mixed messages on capacity. If all fields are in use, it's crowded but mostly works to accommodate cars.
   viii. Trail Conditions – Need work. Some trails are marked.
   ix. Cope Tract – Many different types of uses: four wheelers, horse, hikers, walkers, dog walkers. Informal types of uses occur even though they are not permitted. Currently zoning calls for parking areas to be paved.
   x. Cross Country – A good place for runners of all levels because of the different type of trails.
c. Park Area – Multiple deed restrictions and covenants that need verification. The park should be surveyed and researched to produce an accurate document of ownership and restrictions. This would be a township project outside the scope of work on this project.
d. Site Features –Mapped site features are based on site visits and information provided by county GIS data sets. Trails access points that were observed during the site visit were also mapped. Some residents have installed gates and fences along the park edges as their own personal access point. Several public accesses are marked from adjacent streets. These areas should be marked and verified as part of the park survey.
e. Existing Park Facilities – About 200 parking spaces in four areas: garden, mansion, sports fields and courts, trail accesses. Only 2 ADA parking spaces are provided. With the exception of the athletic area, the park primarily a passive already.
f. ADA Issues – Most of the existing park facilities do not meet ADA guidelines and lack accessible routes, parking areas, viewing areas. Questions on how much the Cope Tract has to be made ADA accessible have been raised. If new facilities are proposed, then those facilities would need to be made accessible. The current trails do not need to be made accessible unless facilities are proposed.

   g. Arboretum – This is an important part of the story of the park. The trees were planted here about 120-130 years ago as part of the mansion and are part of the estate.
   h. Slopes, Soils, and Hydrological soils groups – Less grade change than originally thought. No prime ag soils, limitations are mostly associated with the soils within the low-lying areas of the site. A development limitations map was developed to illustrate the natural capacity of the park for development and preservation:
   i. Ordinance Review – Ag uses, and public open spaces are a permitted use. Parking are required to be dust free all weather surface. Gravel parking areas can be approved by the BOS for overflow parking. Stormwater is a major hurdle to consider and should acknowledge in the development of the master plan.
4. Homework Assignment- The SC evaluation of the park indicates that committee members rated OP overall as fair to average. Cleanliness was the highest rating.
5. Key Person Interviews – We captured information about general needs. They dovetail with the SC evaluations so there were no surprises. Three broad areas were evident: make it all it can be, fix it up and keep it as it is. The specific comments help to provide ideas for the vision and improvements.
6. Focus Groups - Friends, Sports and Historic Groups. We learned a great deal about interpretive opportunities and park improvement ideas.
7. Historic Aerials – were reviewed to describe changes throughout the years with respect to development patterns within the township and the immediate area surrounding the mansion.
8. Country Place Era – Photo examples of other Country Place Era sites were presented. Many are now commercial establishments, and each has its own story. Bryn Athyn was used as an example due to the similarities in the grounds and could be a precedent project.
9. Conclusions – Preserve the cultural landscape and the views.
   a. This is a cultural landscape that should be preserved, protected, and celebrated.
   b. Community Park that functions as a neighborhood Park
   c. Mansion and Park are not SEPERATE
   d. The long views across the site MUST be preserved
   e. The park offers everything; it all of this and more
      i. Arboretum
      ii. Historic and Cultural site
      iii. Athletic Complex
      iv. Regional Park
      v. Nature Park
      vi. Agriculture
   f. Park with IDENTITY issues
   g. Sense of OWNERSHIP for individual places
   h. Individual rooms can work in harmony
10. Goals:
   a. Preserve the historic, cultural, and natural resources of the park.
   b. Ensure that all park partners are working towards an established vision for the park.
   c. Right size park infrastructure to reduce overbuilding
   d. Continue to offer unique recreational facilities and opportunities that fill recreation voids within the immediate geographical area
   e. Develop an interpretive plan that stitches all these great interpretive stories together.
   f. Develop organized programs and services plan for the park.

11. Following the site analysis presentation committee members noted, commented, and discussed the following:

a. M. Hanney – A. Mears captured the essence of the park with his appreciation of it. T. Sennett agrees and noted it was very stimulating. It gets him very excited to continue with the planning process.
b. T. Sennett: Is this posted online as he'd like to access this. A. Mears: Yes. Meeting minutes, power point and summary of homework assignments will be in SharePoint. He had a hard time using Share Point. A. Mears said to email him and that anyone else having issues should email him and a new link will be sent to them.
c. G. Bevilaqua: Need to refine the goals. The main goal needs to be to integrate the fragmentation of the park. Make the park useable for our own residents. Goals need serious work.
d. M. Lerner: You caught my attention with the Central Park slide. He wonders why it is so enduring. Central Park meets a specific need that the people have: green open space available to people who don't have that. Westtown is very different in most cases residents have open space in their back yards. Therefore, Oakbourne Park must satisfy a different set of needs. He doesn't see how the park ties together and that is a very big challenge. He thinks that each distinct facility needs to be improved on its own making that the best it can be.
e. A. Mears described linking facilities and the different areas of the park including the Cope Tract in several ways including visually, with trail connections and landscaping. The areas can be physically separated as long as they are linked in some manner.
f. A. Mears noted that one of the major needs identified in the key person interviews was "real" restrooms.
g. A. Mears: noted that both the 2014 Park and open Space Plan and Townships 2019 Comprehensive Plan provided recommendations for park enhancements.
h. C. Limbach: Who leases the Gatehouse? M. Robinson noted it was rented as a private rental as a residence. The property actually was the Mercer School House. That would be a good historical story as it was for kids who were too poor to attend school.
i. Discussion about value of person in the Gatehouse. Provides a security presence. Once had a person living in the second floor of the Mansion but they retired, and no one lives there now. Not a concern – just seemed weird. A private residence seems to be an inconsistent use in a public park and potential a limitation.
j. Cameras: Consider installing cameras for security.
k. Is the shack with graffiti park within the park property? Appears to be on park property. There is a trail camera there now to monitor. It is scheduled to be removed.
l. T. Sennett elaborated on M. Lerner's comment about the disparate parts of the park. Can we have a welcome center? A. Mears: The house is another area of the park that is bi-furcated. We need to figure out what and if that house can add value to the park.
m. A. Mears: The park lacks a central HUB from which point all uses emanate.
n. M. Lerner: Central Park has areas that are unique to themselves e.g. the Zoo is separate and is a destination. Sheep meadow. Bandshell. Fountain area. Lake. Each has its own unique personality but works as part of the larger park. Each is well-maintained. Within Oakbourne Park, the athletic center already stands on its own. The Mansion could stand on its own. South of Concord Road could be its own separate place but is not well developed. Maybe we just need a commitment to bring the park up to a certain standard and maintain it that way. M. Henney supported that and discussed including signage to help people navigate the park to get more use of the park. Her understanding is that the mansion is not included in this master plan. That's a mistake. So much of the park revolves around the mansion. It's locked. The mansion needs some significant repairs. If it were open like in Hibernia with tours etc. to highlight its significance. Should we purse National Historic Registration Status? P. Boulos noted that a lot of the paperwork was

already completed to apply for submission of the application. It does not appear at this time there is enough support to pursue the application due to concerns on limitations that may be associated with the designation.

o. Mansion – T. Sennett made the point that its part of the park and needs to be part of the master plan. M. Robinson described that the master plan scope of work did not include physical improvements to the mansion building interior or exterior.
p. Next Committee Meeting: Zoom on Wednesday August 26 at 7:00 PM.
q. M. Lerner raised the point that the Vision statement should be dependent upon the users. What is our focus? Who are we trying to get to use the park more? A. Mears: Primary group: increased use by township residents. But there are opportunities for visitors and regional visitation that can be further defined by the vision.
r. Public Opinion Survey – A good number of citizens do not know about Oakbourne Park. A. Toole said that it will be an online survey and that developing a promotional program will be critical to getting a good response rate. We will work on developing that outreach program with the Township to get people to fill out the questionnaire. It was noted that the response rate on the recent Comprehensive Plan was very low. There was concern about the survey not being available in paper format for residents who do not have access digitally. This will be further discussed with township.
s. Mansion availability depends on staffing and budget.
t. Plan Duration – C. Gin wanted to know how long the plan would last. A. Toole explained the vision and phasing would enable the township to move through the phases as funding becomes available. As the park is used over time, the township can update the plan accordingly.
u. M. Lerner raised a question regarding the existing park users and who we design the park for. A. Mears reiterated that it was the point of the exercise to determine the vision and the goals for the park.

12. A. Mears reviewed the homework assignment for the next committee meeting. Committee members were asked to draft a vision statement for the park. The consultants will compile and develop the vision for discussion at the next committee meeting. A due date will be established and sent out with the meeting minutes.

13. The meeting presentation and committee homework assignment have been included as attachments to these minutes.

14. The next steps are:

    a. Homework – Vision Statement
    b. Complete Site Analysis
    c. Develop Public Opinion Survey
    d. Confirm Vision Statement
    e. Schedule next Committee Meeting
    f. Prepare and Conduct Public Meeting
    g. Develop Preliminary Concept Plans

The above represents a true and accurate account of the discussion during this meeting to the best of my knowledge. If there are any conflicts, misrepresentations, or omissions with the above statements, please contact the undersigned within ten (10) days of this date.

Andrew A. Mears

8.12.2020
Date

Attachments

Copy:
Attendees
Project File

Study Committee Meeting #3

Meeting Minutes

Westtown Township
Oakbourne Park Master Plan
Master Plan Study Committee
Study Committee Meeting # 3
JMT Project No. 20-01283-001
August 26, 2020

The Study Committee met virtually on August 26, 2020 for the above referenced project. The following committee members were in attendance via zoom conference call:

Name	Organization	E-mail Address
Meghan Hanney	Committee member	
Catherine Gin	Committee member	
Julie Weidinger	Committee member	
Gary Bevilaqua	Committee member	
Tom Sennett	Committee member	
Sharon Grubaugh	Committee member	
Tom Bare	Committee member	
Marshall Lerner	Committee member	
Chris Limbach	Committee member	
Mila Robinson	Township Project Manager	
Andrew Mears	JMT	
Matt Gallisdorfer	JMT	
Ann Toole	Toole Recreation Planning	
Alison	Committee member	

The purpose of the meeting was to primarily review the draft of the public online survey. Additional agenda items discussed included:

- Homework Assignment – Vision
- Updated Schedule
- Online Survey Questions Review
- Public Meeting
- Questions/Discussion
- Next Steps

The following items were discussed:

1. A. Mears reviewed the meeting agenda and topics to be discussed. The vision statements provided by the committee members were utilized to draft the survey questions.

2. A Mears reviewed project schedule developed for the remainder of the project. Given the aggressive schedule, it is imperative that the outlined dates be met to meet the township's goal of completing the plan by the end of the year

8.26.2020	MPSC Mtg 3 (preliminary vision statement/ survey questions)
9.15.2020	Public Meeting 1 (Intro to project/community Input)
TBD	BOS update
10.13.2020	MPSC Mtg 4 (conceptual alternatives workshop)
10.27.2020	MPSC Mtg 5 (pre-final design, cost estimate, phasing)
11.10.2020	Public Meeting 2 (present pre-final design)
12.15.2020	MPSC Mtg 6 (operations and maintenance plan review)
12.21.2020	Deliver Draft Plan
1.19.2021	Final Plan Presentation (BOS mtg)

3. A. Toole gave a brief overview of the survey questions and the rationale behind the questions, the flow of the questions, and how the information can be extrapolated.

4. A Toole led a lively and robust discussion on the survey. In general, the committee felt the survey was too long and wanted to see it revised on two tracts, one for existing users and one for non-users for the park.

5. After much discussion, a few consistent themes emerged, and it was concluded that the design team would revise the survey questions to address and provide public input on addressing those important factors.

6. An interim meeting may be needed to review the revised survey. The design team will determine after completing the revisions.

7. The committee also noted the use of the survey to engage the public and build awareness of the park.

8. A. Mears presented a brief overview of the Public Information Meeting and objectives of the meeting.

9. A. Mears discussed the next steps:
    a. Finalize the Public Opinion Survey
    b. Plan and conduct public meeting
    c. MPSC meeting #4 will be held to review conceptual designs.

The above represents a true and accurate account of the discussion during this meeting to the best of my knowledge. If there are any conflicts, misrepresentations, or omissions with the above statements, please contact the undersigned within ten (10) days of this date.

Andrew A. Mears 8.27.2020
Andrew A. Mears Date

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Attendees
Project File

Meeting Minutes

Westtown Township
Oakbourne Park Master Plan
Master Plan Study Committee
Study Committee Meeting # 4
JMT Project No. 20-01283-001
October 27, 2020

The Study Committee met virtually on October 27, 2020 for the above referenced project. The following committee members were in attendance via zoom virtual meeting:

Name	Organization	E-mail Address
Joe Stratton	Committee member	
Catherine Gin	Committee member	
Julie Weidinger	Committee member	
Gary Bevilaqua	Committee member	
Tom Sennett	Committee member	
Sharon Grubaugh	Committee member	
Tom Bare	Committee member	
Marshall Lerner	Committee member	
Chris Limbach	Committee member	
Mila Robinson	Township Project Manager	
Andrew Mears	JMT	
Ann Toole	Toole Recreation Planning	

The purpose of the meeting was to primarily review the master plan recommendations. Additional agenda items discussed included:

- Public Meeting Recap
- Community Survey Update
- Vision & Goals – Country Estate
- Key Recommendations
- Active Recreation, Disc Golf & Dogpark
- Cope Tract
- Playground
- Restrooms
- Connectivity
- Mansion Hub
- Athletic Hub
- Pond Area
- Stormwater Management
- Story Trail
- Question + Answers
- Next Steps

The following items were discussed:

Community Survey

- Responses increased from 277 to 333 over the course of the meeting. We asked for help in pushing it out. The list serve went out today and no doubt generated the 50+ responses. Chris noted that people are very excited about the survey and the master plan. Tom indicated that reporting of the responses should be clearly within the parameters of the questions.

- Major survey findings included that the preservation of the historical heritage of the park is key. Desired improvements include the addition of restrooms, improvements to trails, a playground on the scale of great playgrounds in the area, and the addition of public recreation programs. The survey findings are shown in the Power Point presentation attached.

Master Plan Concept Presentation

- Andy presented the master plan concept. He provided the overview including values, vision, mission and goals. The slides included the big picture of the park, the Cope Tract, the Athletic Core, the Mansion area, the Playground, and addressing ADA issues. A copy of the PowerPoint presentation is attached depicting each area. We described the potential of the playground and basketball court to further the story of the history and heritage of Oakbourne Park through the Country Estate Era, the national Playground Movement of the late 1800's/early 1900's that addressed public health and child safety and labor, and beloved children's literature of the era (Peter Pan, Wizard of OZ, Wind in the Willows among others).

Discussion

- Ann noted that the survey results indicated that residents would pay for increased programming. Although that was her interpretation, Tom Sennett wanted it to be clear that the community survey did not specifically ask that question. Marshall echoed Tom's concern.

- Chris likes the basketball court with the league and tournament ideas. The park is so full of history that even the basketball tournament can evoke the heritage of the time and the Township.

- Marshall indicated that he is interested in a dog park on the Cope Tract. The dog park generated a lively discussion pro and con with some committee members in favor and some not in favor. Andy recommended developing an overlay showing what the addition of features on the Cope tract means. All are in favor of pathways on the Cope tract. Mila raised concerns about the dog park being located by neighboring houses and the noise generated by the dogs disturbing neighbors.

- Gary presented information detailing the demise of concessions stands, the limited storage needs, and viewing preferences by spectators to be close to the fields. This information shows that the building needs are for restrooms only and a few 10 ft by 10 ft storage areas. The important things for the athletic core are ADA compliance, parking, paved trails and storm water management.

- Tom asked about parking capacity. Andy said that there were 140 spaces in the sports area and 90 in the mansion area. About 12 pull-off spaces are on the Cope tract. Committee members raised concerns about sufficient parking with the addition of programs and park improvements. Mila described Pam's permitting process to ensure limitations on events due to parking. Andy said that we wanted the park to accommodate as much use as possible including appropriate general park use when events are underway and should not just consider todays needs but future needs as the park becomes more utilized.

- Andy raised the question about moving the gardens adjacent to the mansion. Julie noted that the trees there provide too much shade for the garden. Additionally, Tom Sennett noted that the community garden is not as formal as the mansion and may not quite fit the character of the space. The kitchen garden would be in keeping with the mansion.

- Mila really likes the idea of using the carriage house as a restroom facility. Andy spoke with the architect currently working on the renovations to see if there were any immediate concerns with that and explained the larger context of the renovations in the big picture of the master plan.

- Julie suggested exploring the area behind water tower for parking. Andy said this is a great idea that he will explore as it might be viable. Committee members suggested cleaning up the rocks and sand pits.

- A sketch depicting the recommendations in the area of the pond will be developed. Andy will be looking at the pond and Mercer School House to include an ADA fishing pier and cleaning up the boardwalk area.

- Discussion about the Cope tract trails explored the concept of a bridge to cross the creek in the back and a boardwalk system. Andy stated that this would be a big project but that he has done

several projects on riparian buffers in which grants for stormwater management support the development of boardwalk systems. The streambank restoration project could be used as leverage for other funding opportunities for park improvements.

- Sharon stated that she preferred to see the Cope tract have more public use. Gary mentioned that he gave up on the Cope tract for sports when the Township was doing the Open Space, Recreation and Greenway Plan due to site topography and the amount of earthmoving required to develop fields. Tom Sennett said that topography could work for other purposes such as an amphitheater. Open trails through meadows here could help serve the people who are afraid to walk in the woods. Sharon mentioned her concern whether the crops are organic and the chemicals that are going into nearby stream. Joe confirmed that existing farming practices are not organic, but with limited use of pesticides.

- Andy clarified that the existing pavilion is proposed to be removed and two pavilions added: one for the playground area and one for the community garden area.

- Tom Bare liked the removal of the flagpole, the paths that are similar to the original paths, and the design for the clock garden that would accommodate a sundial. This is all consistent with the Historical Commission wishes and the sketch is similar to the original design in photos that the Commission has. Thomas will provide the pictures to the design team.

- Andy noted that the park is made up of many deeds and the chain of conveyance is not clear and all the easements and restrictions have not been marked. Deed research would be a project unto themself. Mila said that the Historical Commission has taken on the deeds as a project but that its completion may be after the master plan is done. Andy said that they have looked at the deeds enough to understand that the proposed recommendations are appropriate.

- Julie asked for consideration of planting a row of sunflowers as the first crop row at Cope tract to provide an interesting view from the mansion.

- Andy noted that he did not include considerations for disc golf due to the safety concerns. The flying discs are not compatible with other park uses.

Appreciation

- Tom Sennett, Marshall, and Chris all provided their appreciation for a job well done on the plan. The planning team was given a nebulous assignment and then went about not only building the park's skeleton but also putting the meat on its bones.

Next Steps

- Andy will explore the area behind the water tower for parking, modify the building concept, look at the pond area and Mercer School House, do an overlay concept for the Cope tract and show a paved connection from the pond area to the main paved trail loop. Andy and Ann will meet with the Board of Supervisors and prepare for the public meeting. Andy and Ann asked the group for more help in promoting the survey. By the time these meeting minutes were completed, the survey county was up to 345.

- **Although not mention in the meeting, committee members should review the background information previously provided on the draft values, vision, mission and goals. The design team would like to have comments by November 1, 2020.**

The above represents a true and accurate account of the discussion during this meeting to the best of my knowledge. If there are any conflicts, misrepresentations, or omissions with the above statements, please contact the undersigned within ten (10) days of this date.

Andrew A. Mears

8.28.2020
Date

Copy:
Attendees
Project File
Attachment

Meeting Minutes

Westtown Township
Oakbourne Park Master Plan
Master Plan Study Committee
Study Committee Meeting #5
JMT Project No. 20-01283-001
December 15, 2020

The Study Committee met virtually on December 15, 2020 for the above referenced project. The following committee members were in attendance via zoom virtual meeting:

Name	Organization	E-mail Address
Catherine Gin	Committee member	
Julie Weidinger	Committee member	
Gary Bevilaqua	Committee member	
Tom Sennett	Committee member	
Sharon Grubaugh	Committee member	
Thomas Bare	Committee member	
Chris Limbach	Committee member	
Mila Robinson	Township Project Manager	
Andrew Mears	JMT	
Ann Toole	Toole Recreation Planning	
Jon Altshul	Township Manager	
Allison Corcoran	Committee member	
Meghan Hanney	Committee member	
Pamela Boulos	Committee member	

The purpose of the meeting was to review the plan updates based on input from the committee and comments received at the public meeting. Agenda items discussed included:

1. Public meeting recap
    a. Issues to be addressed
    b. Plan updates
    c. Cope Tract
2. Master Plan Costs and Implementation Strategy
3. Operations and Maintenance Plan

4. Draft Report
5. Next Steps

The following items were discussed:

Public Meeting Recap

- A. Mears provided a brief recap of the meeting and the comments received. Most comments pertained to the overlay concept and the potential facilities shown. The report will clearly note the primary recommendation for the Cope Tract and distinguish between the overlay concept which will be identified and discussed in the preliminary design section of the master plan report.
- A. Mears reviewed the plan updates which were very minor. Notable changes included identification of stormwater management areas, delineation of required ADA parking areas, areas for the development of meadows to reduce mowing and provide visual linkages between the various areas of the park. The mansion footprint was updated to show the entire footprint of the building. Detail planting beds and decorative pavement areas and treatments will be developed as part any sketch plans for defined work areas.
- A. Mears reviewed the phasing plan and associated development costs which was previously provided to the committee for review prior to the meeting. The draft summary is attached as presented.

Operations and Maintenance Plan

- A. Toole presented the Operations and Maintenance Plan and highlighted key sections.
- There were several questions and discussion on benchmarking figures, budgets, revenue generated by the mansion, and the need for increased maintenance personnel. The complete report including all facts and figures discussed is attached for review and comment by the committee.

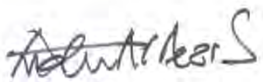
Discussion

- J. Altshul noted concerns for the overlay concept for long term maintenance of the potential facilities shown for consideration and discussion, primarily the dog park and disc golf course.
- J. Weidinger noted that the garden club will not consider moving to Cope Tract unless farming practices are organic.
- M. Hanney noted she views the Cope Tract as a wilderness within the overall park that need to be better promoted and signed. She questioned the need for additional infrastructure and the pavilion. It was noted that the existing infrastructure is already located in the adjacent street and only service connections would be required. The proposed pavilion and water service will provide comfort facilities to support both gardeners and park users.
- C. Gin asked what funding opportunities would be available for park improvements. A, Toole provided an overview of the two major funding sources including DCNR and DCED and discussed limits and matching requirements.
- T. Sennett voiced concern for how to keep momentum moving for the project. A. Mears noted that the design team is discussing a low hanging fruit recommendation to be included in the master plan. However, given passed development patterns and the lack of stormwater management within the park it will be difficult and not cost effective to develop individual facilities.

Next Steps

- Complete draft master plan report for submission to the BOS for January 21, 2021 meeting.
- *The Operations and Management, and design chapters will be submitted to the committee for comments prior to final compilation of the draft report to be submitted to the BOS. The phasing plan, cost estimates, and draft values, vision, mission and goal statements were previously provided to the committee.*

  The above represents a true and accurate account of the discussion during this meeting to the best of my knowledge. If there are any conflicts, misrepresentations, or omissions with the above statements, please contact the undersigned within ten (10) days of this date.



Andrew A. Mears 01.05.2021
Date

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Attendees
Project File
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APPENDIX M: EXISTING CONDITIONS MAP AND PHOTO INVENTORY

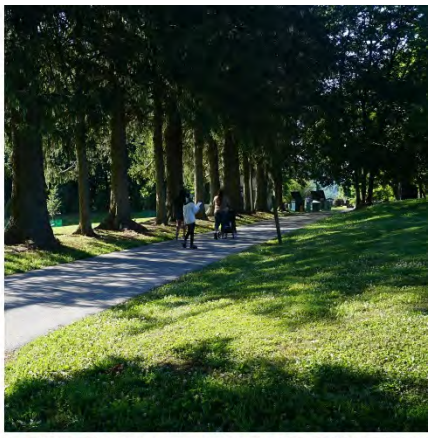
Analyses / Existing Conditions

Photo Inventory / Existing Conditions







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Runners Park





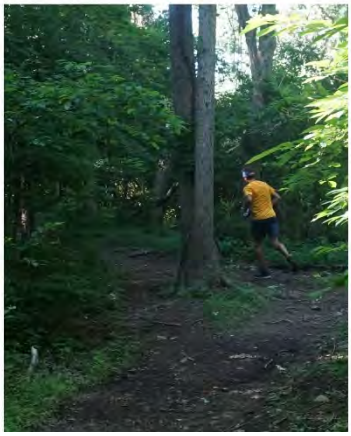
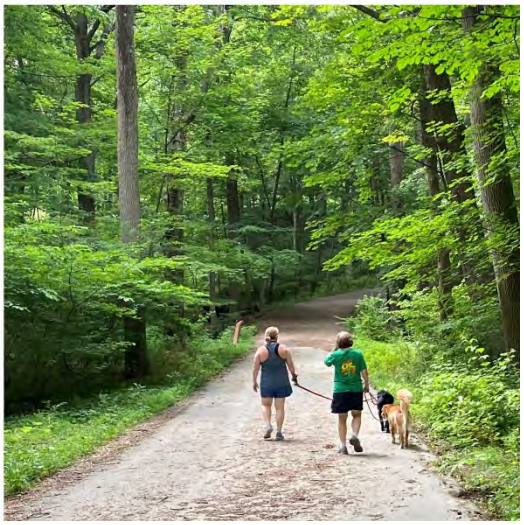
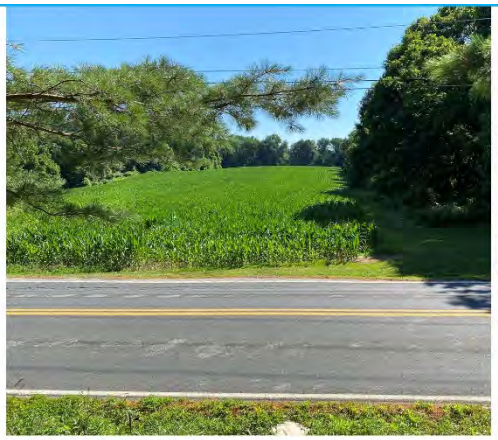




Photo Inventory / Existing Conditions



Neighborhood Access Points

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APPENDIX N: PROBABLE CONSTRUCTION COST ESTIMATES

Oakbourne Park Module 1 - Athletic Core

Budget Estimate

DATE: January, 2021

ITEM	DESCRIPTION		EST. QTY.	UNITS	UNIT PRICE	TOTAL COST
A.	**Site Improvements**					
A.1	**General Requirements**					**$249,083**
	A.1.1	Bond, Mobilization	1	LS	$231,683	$231,683
	A.1.2	Survey/Construction Layout	10	DAY	$1,000	$10,000
	A.1.3	Testing	1	LS	$3,000	$3,000
	A.1.4	Submittals/Shop Drawings	12	MONTH	$300	$3,600
	A.1.5	Project Sign	1	EA	$800	$800
A.2	**Site Preparation and Demolition**					**$42,500**
	A.2.1	Clearing and Grubbing	4	AC	$3,000	$12,000
	A.2.2	Remove Trees	1	LS	$20,000	$20,000
	A.2.3	Strip and Stockpile Topsoil (6" deep)	3,500	CY	$3	$10,500
A.3	**Erosion and Sedimentation**					**$75,000**
	A.3.1	Soil Stabilization and Controls	1	LS	$75,000	$75,000
A.4	**Earthwork**					**$52,000**
	A.4.1	Bulk Excavation and Fill				
		A.4.1.1 Bulk Cut (Common Earth)	8,000	CY	$3	$20,000
		A.4.1.2 Bulk Fill (Common Earth)	8,000	CY	$4	$32,000
		Balance:	0	CY		
A.5	**Site Concrete Construction**					**$529,720**
	A.5.1	Concrete Pavement				
		A.5.1.1 Walks	5,500	SF	$9	$49,500
		A.5.1.2 Shelter Pad	1,250	SF	$12	$15,000
		A.5.1.3 Dumpster Pad	225	SF	$12	$2,700
	A.5.2	Concrete Unit Pavers (Decorative Paving)				
		A.5.2.1 Flag Pole Area	4,000	SF	$16	$64,000
		A.5.2.2 Building Plaza Area	5,800	SF	$16	$92,800
		A.5.2.3 Basketball Area	3,800	SF	$16	$60,800
	A.5.3	Aggregate Paver Base				
		A.5.3.1 Flag Pole Area	4,000	SF	$4	$16,000
		A.5.3.2 Building Plaza Area	5,800	SF	$4	$23,200
		A.5.3.3 Basketball Area	3,800	SF	$4	$15,200
	A.5.4	Concrete Steps				
		A.5.4.1 Steps with Cheek Wall (Stair A)	25	RISER	$280	$7,000
		A.5.4.2 Steps with Cheek Wall (Stair B)	18	RISER	$280	$5,040
		A.5.4.3 Steps with Cheek Wall (Stair C)	18	RISER	$280	$5,040
		A.5.4.4 Steps with Cheek Wall (Stair D)	8	RISER	$280	$2,240

	A.5.4.5	Steps with Cheek Wall (Stair E)	15	RISER	$280	$4,200
	A.5.5	Concrete Curb	2,000	LF	$35	$70,000
	A.5.6	Concrete ADA Ramp	3	EA	$2,000	$6,000
	A.5.7	Concrete Retaining Wall (Basketball)	140	CY	$650	$91,000
A.6	**Bituminous Pavement**					**$532,680**
	A.6.1	Parking Area				
		A.6.1.1 Bituminous Paving and Base	6,900	SY	$40	$276,000
		A.6.1.2 Pavement Markings/Stalls	148	EA	$10	$1,480
		A.6.1.3 Traffic Control Signage	3	EA	$400	$1,200
	A.6.2	8 ' Wide Bituminous Walkways				
		A.6.2.1 Bituminous Paving and Base	3,400	SY	$50	$170,000
	A.6.3	Basketball Courts				
		A.6.3.1 Bituminous Paving and Base	1,500	SY	$40	$60,000
	A.6.4	Pickleball Courts				
		A.6.4.1 Bituminous Paving and Base	600	SY	$40	$24,000
A.7	**Storm Drainage**					**$445,000**
	A.7.1	Stormwater Management	1	LS	$225,000	$225,000
	A.7.2	Stormwater Basin	1	EA	$60,000	$60,000
	A.7.2	Rain Garden	2	EA	$30,000	$60,000
	A.7.3	Existing Basin Retrofit	1	LS	$100,000	$100,000
A.8	**Landscaping**					**$64,300**
	A.8.1	Spread Topsoil, Fine Grade, Fertilize	3,500	CY	$3	$10,500
	A.8.2	Seeding				
		A.8.2.1 Lawn / General	30,000	SF	$0.11	$3,300
		A.8.2.2 Upland Meadow	75,000	SF	$0.25	$18,750
	A.8.3	Street/Parking Area Trees	20	EA	$500	$10,000
	A.8.4	Ornamental Trees	10	EA	$250	$2,500
	A.8.5	Ornamental Shrubs	50	EA	$85	$4,250
	A.8.6	Rain Gardens	1	LS	$15,000	$15,000
A.9	**Site Amenities**					**$47,300**
	A.9.1	Picnic Tables (4 ADA)	8	EA	$2,000	$16,000
	A.9.2	Plaza Tables	8	EA	$1,800	$14,400
	A.9.3	Benches	6	EA	$1,200	$7,200
	A.9.4	Trash Receptacle	4	EA	$800	$3,200
	A.9.5	Jug Filler / Water Fountain	1	EA	$5,000	$5,000
	A.9.6	Bicycle Rack	3	EA	$500	$1,500
A.10	**Tot Lot**					**$68,437**
	A.10.1	Play Equipment (2-5 Year Old)	1	LS	$40,000	$40,000
		A.10.1.1 Play Equipment Installation	1	LS	$20,000	$20,000
	A.10.2	Edging	150	LF	$15	$2,250
	A.10.3	Underdrain	50	LF	$31	$1,525
	A.10.4	Safety Surface (Mulch)	65	CY	$43	$2,795
	A.10.5	Stone Base and Filter Fabric	180	SY	$10	$1,867

A.11	**Basketball Courts**					**$33,900**
	A.11.1	Posts, Goals and Nets	4	EA	$3,700	$14,800
	A.11.2	6' High Chain Link Fence	300	LF	$42	$12,600
	A.11.3	Court Painting	1	LS	$1,500	$1,500
	A.11.4	Preserve Existing Ruins (Wall)	1	LS	$5,000	$5,000
A.12	**Pickleball Courts**					**$31,400**
	A.12.1	Posts and Nets	2	EA	$1,000	$2,000
	A.12.2	8' High Chain Link Fence	380	LF	$50	$19,000
	A.12.3	Court Surfacing	5,200	SF	$2	$10,400
A.13	**Miscellaneous Site Improvements**					**$141,900**
	A.13.1	Site Identification Sign	1	EA	$5,000	$5,000
	A.13.2	Relocate Flag Pole	1	EA	$5,000	$5,000
	A.13.3	Removable Bollards	4	EA	$350	$1,400
	A.13.4	Parking Lot - Utility Access Gates	2	EA	$2,500	$5,000
	A.13.5	Concrete Wheel Stops	6	EA	$250	$1,500
	A.13.6	Ramp Handrail	310	LF	$125	$38,750
	A.13.7	Step Handrail	160	LF	$125	$20,000
	A.13.8	Guardrail	125	LF	$150	$18,750
	A.13.9	Resurface Existing Tennis Courts	15,500	SF	$3	$46,500
					Subtotal Site Improvements (A):	**$2,313,220**
B.	**Structures**					
B.1	**Structures**					**$559,000**
	B.1.1	Storage, Viewing and Restroom Building	2,500	SF	$200	$500,000
	B.1.2	30'x30' Pavilion	1	EA	$36,000	$36,000
		B.1.2.1 Pavilion Installation	1	EA	$18,000	$18,000
	B.1.3	Relocate Batting Cage	1	LS	$5,000	$5,000
					Subtotal Structure Improvements (B):	**$559,000**
C.	**Water Service Improvements**					
C.1	**Water Service**					**$35,000**
	C.1.1	On Site Water Service Improvements	1	LS	$35,000	$35,000
					Subtotal Water Service Improvements (C):	**$35,000**
D.	**Utilities**					
D.1	**Utility Connections**					**$50,000**
	D.1.1	Sanitary Line	1	LS	$50,000	$50,000
					Subtotal Utility Relocation Improvements (D):	**$50,000**

E.	**Electric**					
E.1	**Site Electric**					**$170,500**
	E.1.1	Utility Power Extension	1	LS	$50,000	$50,000
	E.1.2	Service Panel and Meter	1	LS	$10,000	$10,000
	E.1.3	Receptacle Pedestals	1	LS	$3,500	$3,500
	E.1.4	Security Lighting	1	LS	$10,000	$10,000
	E.1.5	Walkway Lighting	1	LS	$40,000	$40,000
	E.1.6	Wiring and Conduit	1	LS	$15,000	$15,000
	E.1.7	15' Pole Lighting	12	EA	$3,500	$42,000
					Subtotal Electric Improvements (E):	**$170,500**
					SUBTOTAL (A-E):	**$3,127,720**
					10% DESIGN CONTINGENCY:	**$312,772**
					TOTAL PROBABLE COST (BASE BID):	**$3,440,491**
1	Professional Design Fees				10%	**$344,049**
2	Construction Contingency Fund				5%	**$172,025**
3	Miscellaneous Costs				2.5%	**$86,012**
	Includes but is not limited to:					
	Site Surveying, Test Borings, Sink Hole Investigation, Builders Risk Insurance, Building Permit, Labor and Industry Fee, Document Printing, Construction Testing, Storm Water Permit					
4	**Total Soft Costs**				17.5%	**$602,086**
	TOTAL PROJECT ESTIMATE					**$4,042,577**

Note: Probable cost for site work does not include the following:

1. Rerouting gas, CATV, or phone lines. Additional improvements as may be required by municipal or other reviewing agencies having jurisdiction
2. Utility service and or connection fees.
3. Interpretive signage design.
4. Removal of unsuitable materials, sink hole remediation, or on lot disposal system designs.
5. Irrigation of athletic fields, and water reels
6. Project financing costs
7. Water Meter Pit and Tap cost are not included.

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

Oakbourne Park Module 2 - Cope Tract

Budget Estimate

DATE: January, 2021

ITEM	DESCRIPTION		EST. QTY.	UNITS	UNIT PRICE	TOTAL COST
A.	**Site Improvements**					
A.1	**General Requirements**					**$126,208**
	A.1.1	Bond, Mobilization	1	LS	$110,008	$110,008
	A.1.2	Survey/Construction Layout	10	DAY	$1,000	$10,000
	A.1.3	Testing	1	LS	$3,000	$3,000
	A.1.4	Submittals/Shop Drawings	8	MONTH	$300	$2,400
	A.1.5	Project Sign	1	EA	$800	$800
A.2	**Site Preparation and Demolition**					**$17,000**
	A.2.1	Clearing and Grubbing	2	AC	$3,000	$6,000
	A.2.2	Remove Trees	1	LS	$5,000	$5,000
	A.2.3	Strip and Stockpile Topsoil (6" deep)	2,000	CY	$3	$6,000
A.3	**Erosion and Sedimentation**					**$30,000**
	A.3.1	Soil Stabilization and Controls	1	LS	$30,000	$30,000
A.4	**Earthwork**					**$32,500**
	A.4.1	Bulk Excavation and Fill				
		A.4.1.1 Bulk Cut (Common Earth)	5,000	CY	$3	$12,500
		A.4.1.2 Bulk Fill (Common Earth)	5,000	CY	$4	$20,000
		Balance:	0	CY		
A.5	**Site Concrete Construction**					**$15,000**
	A.5.1	Concrete Pavement				
		A.5.1.1 Shelter Pad	1,250	SF	$12	$15,000
A.6	**Bituminous Pavement**					**$274,080**
	A.6.1	Parking, Shared Access Drive, Turnaround and Turn Lane				
		A.6.1.2 Bituminous Paving and Base	2,800	SY	$40	$112,000
		A.6.1.3 Pavement Markings/Stalls	8	EA	$10	$80
		A.6.1.4 Traffic Control Signage	4	EA	$500	$2,000
	A.6.2	8 ' Wide Bituminous Walkways				
		A.6.2.1 Bituminous Paving and Base	3,200	SY	$50	$160,000
A.7	**Storm Drainage**					**$165,000**
	A.7.1	Stormwater Management	1	LS	$75,000	$75,000
	A.7.2	Stormwater Basin	1	EA	$60,000	$60,000
	A.7.3	Rain Garden	1	EA	$30,000	$30,000

A.8	**Landscaping**					**$683,875**
	A.8.1	Spread Topsoil, Fine Grade, Fertilize	1,000	CY	$3.0	$3,000
	A.8.2	Seeding				
		A.8.2.1 Lawn / General	50,000	SF	$0.11	$5,500
		A.8.2.2 Upland Meadow	60,000	SF	$0.25	$15,000
	A.8.3	Stabilized Lawn Parking	11,500	SF	$3	$34,500
	A.8.3	Street/Parking Area Trees	15	EA	$500	$7,500
	A.8.4	Ornamental Trees	8	EA	$250	$2,000
	A.8.5	Shrubs	75	EA	$85	$6,375
	A.8.6	Rain Gardens	1	LS	$10,000	$10,000
	A.8.7	Streambank / Wetland Restoration	300,000	SF	$2.00	$600,000
A.9	**Site Amenities**					**$39,400**
	A.9.1	Picnic Tables	4	EA	$2,000	$8,000
	A.9.2	Benches	4	EA	$1,200	$4,800
	A.9.3	Trash Receptacle	2	EA	$800	$1,600
	A.9.4	Jug Filler / Water Fountain	1	EA	$5,000	$5,000
	A.9.5	Community Gardens	1	LS	$20,000	$20,000
A.10	**Miscellaneous Site Improvements**					**$23,050**
	A.10.1	Site Identification Sign	1	EA	$5,000	$5,000
	A.10.2	Removable Bollards	3	EA	$350	$1,050
	A.10.3	Concrete Wheel Stops	8	EA	$250	$2,000
	A.10.4	Private Driveway Entry	1	LS	$10,000	$10,000
	A.10.5	ADA Signage	4	EA	$500	$2,000
	A.10.6	Pedestrian Road Crossing	1	LS	$3,000	$3,000
					Subtotal Site Improvements (A):	**$1,406,113**
B.	**Structures**					
B.1	**Structures**					**$54,000**
	B.1.1	30'x30' Pavilion	1	EA	$36,000	$36,000
		B.1.1.1 Pavilion Installation	1	EA	$18,000	$18,000
					Subtotal Structure Improvements (B):	**$54,000**
C.	**Water Service Improvements**					
C.1	**Water Service**					**$25,000**
	C.1.1	On Site Water Service Improvements	1	LS	$25,000	$25,000
					Subtotal Water Service Improvements (C):	**$25,000**
					SUBTOTAL (A-C):	**$1,485,113**
					10% DESIGN CONTINGENCY:	**$148,511**
					TOTAL PROBABLE COST (BASE BID):	**$1,633,625**

1	Professional Design Fees	10%	**$163,362**
2	Construction Contingency Fund	5%	**$81,681**
3	Miscellaneous Costs	2.5%	**$40,841**
	Includes but is not limited to:		
	Site Surveying, Test Borings, Sink Hole Investigation,		
	Builders Risk Insurance, Building Permit,		
	Labor and Industry Fee, Document Printing,		
	Construction Testing, Storm Water Permit		
4	**Total Soft Costs**	17.5%	**$285,884**
	TOTAL PROJECT ESTIMATE		**$1,919,509**

Note: Probable cost for site work does not include the following:

1. Rerouting gas, CATV, or phone lines. Additional improvements as may be required by municipal or other reviewing agencies having jurisdiction
2. Utility service and or connection fees.
3. Interpretive signage design.
4. Removal of unsuitable materials, sink hole remediation, or on lot disposal system designs.
5. Irrigation of athletic fields, and water reels
6. Project financing costs
7. Water Meter Pit and Tap cost are not included.

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Oakbourne Park Module 3 - Pond Core

Budget Estimate

DATE: January, 2021

ITEM	DESCRIPTION		EST. QTY.	UNITS	UNIT PRICE	TOTAL COST
A.	**Site Improvements**					
A.1	**General Requirements**					**$52,731**
	A.1.1	Bond, Mobilization	1	LS	$36,531	$36,531
	A.1.2	Survey/Construction Layout	10	DAY	$1,000	$10,000
	A.1.3	Testing	1	LS	$3,000	$3,000
	A.1.4	Submittals/Shop Drawings	8	MONTH	$300	$2,400
	A.1.5	Project Sign	1	EA	$800	$800
A.2	**Site Preparation and Demolition**					**$14,000**
	A.2.1	Clearing and Grubbing	2	AC	$3,000	$6,000
	A.2.2	Remove Trees	1	LS	$8,000	$8,000
A.3	**Erosion and Sedimentation**					**$15,000**
	A.3.1	Soil Stabilization and Controls	1	LS	$15,000	$15,000
A.4	**Earthwork**					**$56,500**
	A.4.1	Bulk Excavation and Fill				
		A.4.1.1 Bulk Cut (Common Earth)	5,000	CY	$3	$12,500
		A.4.1.2 Bulk Fill (Common Earth)	2,000	CY	$4	$8,000
		A.4.1.3 Spoil Excess Cut on Property	3,000	CY	$12	$36,000
A.5	**Site Concrete Construction**					**$9,925**
	A.5.1	Concrete ADA Parking	550	SF	$9	$4,950
	A.5.2	Concrete Curb	75	LF	$35	$2,625
	A.5.3	Mountable Curb	10	LF	$35	$350
	A.5.4	ADA Ramp	1	EA	$2,000	$2,000
A.6	**Bituminous Pavement**					**$77,750**
	A.6.1	8 ' Wide Bituminous Walkways	1,555	SY	$50	$77,750
A.7	**Storm Drainage**					**$100,000**
	A.7.1	Stormwater Management	1	LS	$25,000	$25,000
	A.7.2	Pond Expansion for Stormwater Improvements	1	LS	$75,000	$75,000
A.8	**Landscaping**					**$20,410**
	A.8.1	Spread Topsoil, Fine Grade, Fertilize	1,000	CY	$2.2	$2,200
	A.8.2	General Lawn Seeding	11,000	SF	$0.11	$1,210
	A.8.3	Ornamental Trees	5	EA	$500	$2,500
	A.8.4	Wetland Plantings	12,000	SF	$1	$12,000
	A.8.5	Basin Riparian Seeding	10,000	SF	$0.25	$2,500

A.9	**Site Amenities**					**$8,000**
	A.9.1	Picnic Tables	2	EA	$2,000	$4,000
	A.9.2	Benches	2	EA	$1,200	$2,400
	A.9.3	Trash Receptacle	2	EA	$800	$1,600
A10	**Miscellaneous Site Improvements**					**$4,850**
	A.10.1	Small Site Identification Sign	1	EA	$3,000	$3,000
	A.10.2	Removable Bollards	1	EA	$350	$350
	A.10.3	ADA Signage	2	EA	$500	$1,000
	A.10.4	Concrete Wheel Stops	2	EA	$250	$500
					Subtotal Site Improvements (A):	**$359,166**
B.	**Structures**					
B.1	**Structures**					**$134,000**
	B.1.1	ADA Accessible Fishing Dock	1	EA	$40,000	$40,000
		B.1.1.1 Install Fishing Dock	1	EA	$15,000	$15,000
	B.1.2	Boardwalk	80	LF	$300	$24,000
	B.1.3	Bridge	1	LS	$40,000	$40,000
		B.1.3.1 Install Bridge	1	LS	$15,000	$15,000
					Subtotal Structure Improvements (B):	**$134,000**
					SUBTOTAL (A-B):	**$493,166**
					10% DESIGN CONTINGENCY:	**$49,317**
					TOTAL PROBABLE COST (BASE BID):	**$542,482**
1	Professional Design Fees				10%	**$54,248**
2	Construction Contingency Fund				5%	**$27,124**
3	Miscellaneous Costs				2.5%	**$13,562**
	Includes but is not limited to: Site Surveying, Test Borings, Sink Hole Investigation, Builders Risk Insurance, Building Permit, Labor and Industry Fee, Document Printing, Construction Testing, Storm Water Permit					
4	**Total Soft Costs**				17.5%	**$94,934**
	TOTAL PROJECT ESTIMATE					**$637,417**

Note: Probable cost for site work does not include the following:

1. Rerouting gas, CATV, or phone lines. Additional improvements as may be required by municipal or other reviewing agencies having jurisdiction
2. Utility service and or connection fees.

3. Interpretive signage design.
4. Removal of unsuitable materials, sink hole remediation, or on lot disposal system designs.
5. Irrigation of athletic fields, and water reels
6. Project financing costs
7. Water Meter Pit and Tap cost are not included.

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Oakbourne Park Module 4 - Mansion Core

Budget Estimate

DATE: January, 2021

ITEM	DESCRIPTION		EST. QTY.	UNITS	UNIT PRICE	TOTAL COST
A.	**Site Improvements**					
A.1	**General Requirements**					**$304,036**
	A.1.1	Bond, Mobilization	1	LS	$286,636	$286,636
	A.1.2	Survey/Construction Layout	10	DAY	$1,000	$10,000
	A.1.3	Testing	1	LS	$3,000	$3,000
	A.1.4	Submittals/Shop Drawings	12	MONTH	$300	$3,600
	A.1.5	Project Sign	1	EA	$800	$800
A.2	**Site Preparation and Demolition**					**$45,300**
	A.2.1	Clearing and Grubbing	9	AC	$3,000	$27,000
	A.2.2	Remove Trees	1	LS	$12,000	$12,000
	A.2.3	Strip and Stockpile Topsoil (6" deep)	2,100	CY	$3	$6,300
A.3	**Erosion and Sedimentation**					**$70,000**
	A.3.1	Soil Stabilization and Controls	1	LS	$70,000	$70,000
A.4	**Earthwork**					**$58,500**
	A.4.1	Bulk Excavation and Fill				
		A.4.1.1 Bulk Cut (Common Earth)	9,000	CY	$3	$22,500
		A.4.1.2 Bulk Fill (Common Earth)	9,000	CY	$4	$36,000
		Balance:	*0*	CY		
A.5	**Site Concrete Construction**					**$751,000**
	A.5.1	Concrete Pavement				
		A.5.1.1 Walks	7,500	SF	$9	$67,500
		A.5.1.2 Shelter Pads	3,000	SF	$12	$36,000
	A.5.2	Concrete Unit Pavers (Decorative Paving)				
		A.5.2.1 Mansion Core	17,000	SF	$16	$272,000
		A.5.2.2 Sundial Garden	5,000	SF	$16	$80,000
		A.5.2.3 Event Space	6,000	SF	$16	$96,000
	A.5.3	Aggregate Unit Pavers Base				
		A.5.3.1 Mansion Core	17,000	SF	$4	$68,000
		A.5.3.2 Sundial Garden	5,000	SF	$4	$20,000
		A.5.3.3 Event Space	6,000	SF	$4	$24,000
	A.5.4	Concrete Curb				
		A.5.4.1 Parking Area (Outside)	1,100	LF	$35	$38,500
	A.5.5	Concrete Retaining Walls (SRW)				
		A.5.5.1 Seat Wall	150	LF	$300	$45,000
	A.5.6	Concrete ADA Ramp	2	EA	$2,000	$4,000

A.6	**Bituminous Pavement**					**$579,940**
	A.6.1	Parking Area and Access Drive				
		A.6.1.1 Bituminous Paving and Base	8,600	SY	$40	$344,000
		A.6.1.2 Pavement Markings/Stalls	94	EA	$10	$940
	A.6.2	8 ' Wide Bituminous Walkways				
		A.6.2.1 Bituminous Paving and Base	4,700	SY	$50	$235,000
A.7	**Storm Drainage**					**$510,000**
	A.7.1	Stormwater Management	1	LS	$450,000	$450,000
	A.7.2	Rain Gardens	2	EA	$30,000	$60,000
A.8	**Landscaping**					**$149,500**
	A.8.1	Spread Topsoil, Fine Grade, Fertilize	3,000	CY	$3.0	$9,000
	A.8.2	Seeding				
		A.8.2.1 Lawn / General	175,000	SF	$0.11	$19,250
		A.8.2.2 Upland Meadow Seeding	100,000	SF	$0.25	$25,000
	A.8.3	Street/Parking Area Trees	35	EA	$600	$21,000
	A.8.4	Ornamental Trees	15	EA	$500	$7,500
	A.8.5	Hedge	1,000	LF	$20	$20,000
	A.8.6	Kitchen Gardens	1	LS	$25,000	$25,000
	A.8.7	Ornamental Plantings				
		A.8.7.1 Manson Area	75	EA	$85	$6,375
		A.8.7.2 Other Ornamental Shrubs	75	EA	$85	$6,375
		A.8.7.3 Sundial Garden	1	LS	$10,000	$10,000
	A.8.8	Rain Gardens	1	LS	$15,000	$15,000
A.9	**Site Amenities**					**$53,200**
	A.9.1	Plaza Tables	12	EA	$1,800	$21,600
	A.9.2	Picnic Tables	8	EA	$2,000	$16,000
	A.9.3	Benches	4	EA	$1,200	$4,800
	A.9.4	Trash Receptacle	6	EA	$800	$4,800
	A.9.5	Drinking Water Fountain	1	EA	$5,000	$5,000
	A.9.6	Bicycle Rack	2	EA	$500	$1,000
A.10	**Iconic Playground**					**$487,334**
	A.10.1	Play Equipment	1	LS	$200,000	$200,000
	A.10.2	Play Equipment Installation	1	LS	$100,000	$100,000
	A.10.3	Edging	300	LF	$25	$7,500
	A.10.4	Underdrain	150	LF	$31	$4,575
	A.10.5	Safety Surface (Poured In Place)	6,000	SF	$28	$168,000
	A.10.6	Stone Base and Filter Fabric	700	SY	$10	$7,259
A.11	**Nature Based Play Area**					**$180,271**
	A.11.1	Play Equipment	1	LS	$100,000	$100,000
	A.11.2	Play Equipment Installation	1	LS	$50,000	$50,000
	A.11.3	Edging	300	LF	$15	$4,500
	A.11.4	Underdrain	150	LF	$31	$4,575
	A.11.5	Safety Surface (Mulch)	300	CY	$43	$12,900
	A.11.6	Stone Base and Filter Fabric	800	SY	$10	$8,296

A.12	**Miscellaneous Site Improvements**					**$154,000**
	A.12.1	Parking Lot - Utility Access Gates	2	EA	$2,500	$5,000
	A.12.2	Concrete Wheel Stops	68	EA	$250	$17,000
	A.12.3	Relocate and Restore Historic Fountain	1	LS	$60,000	$60,000
	A.12.4	Small Group Gathering Area with Fire Pit	1	LS	$20,000	$20,000
	A.12.5	ADA Signage	4	EA	$500	$2,000
	A.12.6	Sundial Sculpture	1	LS	$50,000	$50,000
					Subtotal Site Improvements (A):	**$3,343,081**
B.	**Structures**					
B.1	**Structures**					**$355,000**
	B.1.1	Overlook Deck	1	EA	$20,000	$20,000
		B.1.1.1 Deck Installation	1	EA	$10,000	$10,000
	B.1.2	30'x50' Pavilion	2	EA	$50,000	$100,000
		B.1.2.1 Pavilion Installation	2	EA	$25,000	$50,000
	B.1.3	Carriage House Conversion to Restrooms	1	LS	$175,000	$175,000
					Subtotal Structure Improvements (B):	**$355,000**
C.	**Water Service Improvements**					
C.1	**Water Service**					**$20,000**
	C.1.1	On Site Water Service Improvements	1	LS	$20,000	$20,000
					Subtotal Water Service Improvements (C):	**$20,000**
D.	**Utilities**					
D.1	**Utility Connections**					**$25,000**
	D.1.1	Sanitary Line	1	LS	$25,000	$25,000
					Subtotal Utility Relocation Improvements (D):	**$25,000**
E.	**Electric**					
E.1	**Site Electric**					**$126,500**
	E.1.1	Utility Power Extension	1	LS	$30,000	$30,000
	E.1.2	Service Panel and Meter	1	LS	$10,000	$10,000
	E.1.3	Receptacle Pedestals	1	LS	$3,500	$3,500
	E.1.4	Security Lighting	1	LS	$10,000	$10,000
	E.1.5	Walkway Lighting	1	LS	$30,000	$30,000
	E.1.6	Wiring and Conduit	1	LS	$15,000	$15,000
	E.1.7	15' Pole Lighting	8	EA	$3,500	$28,000
					Subtotal Electric Improvements (E):	**$126,500**

		SUBTOTAL (A-E):	**$3,869,581**
		10% DESIGN CONTINGENCY:	**$386,958**
		TOTAL PROBABLE COST (BASE BID):	**$4,256,539**
1	Professional Design Fees	10%	**$425,654**
2	Construction Contingency Fund	5%	**$212,827**
3	Miscellaneous Costs	2.5%	**$106,413**
	Includes but is not limited to: Site Surveying, Test Borings, Sink Hole Investigation, Builders Risk Insurance, Building Permit, Labor and Industry Fee, Document Printing, Construction Testing, Storm Water Permit		
4	**Total Soft Costs**	17.5%	**$744,894**
	TOTAL PROJECT ESTIMATE		**$5,001,433**

Note: Probable cost for site work does not include the following:

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2. Utility service and or connection fees.
3. Interpretive signage design.
4. Removal of unsuitable materials, sink hole remediation, or on lot disposal system designs.
5. Irrigation of athletic fields, and water reels
6. Project financing costs
7. Water Meter Pit and Tap cost are not included.

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Oakbourne Park - Cope Tract Overlay

Budget Estimate

DATE: January, 2021

ITEM	DESCRIPTION			EST. QTY.	UNITS	UNIT PRICE	TOTAL COST
A.	**Site Improvements**						
A.1	**Site Preparation and Demolition**						**$38,100**
	A.1.1	Clearing and Grubbing		11	AC	$3,000	$33,000
	A.1.2	Strip and Stockpile Topsoil (6" deep)		1,700	CY	$3	$5,100
A.2	**Erosion and Sedimentation**						**$15,000**
	A.2.1	Soil Stabilization and Controls		1	LS	$15,000	$15,000
A.3	**Earthwork**						**$9,750**
	A.3.1	Bulk Excavation and Fill					
		A.3.1.1	Bulk Cut (Common Earth)	1,500	CY	$3	$3,750
		A.3.1.2	Bulk Fill (Common Earth)	1,500	CY	$4	$6,000
			Balance:	0	CY		
A.4	**Site Concrete Construction**						**$15,000**
	A.4.1	Concrete Pavement					
		A.4.1.1	Shelter Pad	1,250	SF	$12	$15,000
A.5	**Bituminous Pavement**						**$74,420**
	A.5.1	Parking					
		A.5.1.2	Bituminous Paving and Base	1,350	SY	$40	$54,000
		A.5.1.3	Pavement Markings/Stalls	42	EA	$10	$420
	A.5.2	8 ' Wide Bituminous Walkways					
		A.5.2.1	Bituminous Paving and Base	400	SY	$50	$20,000
A.6	**Landscaping**						**$118,500**
	A.6.1	Spread Topsoil, Fine Grade, Fertilize		1,700	CY	$3.0	$5,100
	A.6.2	Seeding					
		A.6.2.1	Lawn / General	90,000	SF	$0.11	$9,900
		A.6.2.2	Upland Meadow	330,000	SF	$0.25	$82,500
	A.6.3	Shade Trees		35	EA	$600	$21,000
A.7	**Site Amenities**						**$13,600**
	A.7.1	Picnic Tables		4	EA	$2,000	$8,000
	A.7.2	Benches		4	EA	$1,200	$4,800
	A.7.3	Trash Receptacle		1	EA	$800	$800

A.8	**Miscellaneous Site Improvements**					**$91,300**
	A.8.1	Concrete Wheel Stops	42	EA	$250	$10,500
	A.8.2	Disc Golf Holes	9	EA	$1,200	$10,800
	A.8.3	8' High Chain Link Fence	1,400	LF	$50	$70,000
					Subtotal Site Improvements (A):	**$375,670**
B.	**Structures**					
B.1	**Structures**					**$54,000**
	B.1.1	30'x30' Pavilion	1	EA	$36,000	$36,000
		B.1.1.1 Pavilion Installation	1	EA	$18,000	$18,000
					Subtotal Structure Improvements (B):	**$54,000**
					SUBTOTAL (A-B):	**$429,670**
					10% DESIGN CONTINGENCY:	**$42,967**
					TOTAL PROBABLE COST:	**$472,637**

1	Professional Design Fees	10%	**$47,264**
2	Construction Contingency Fund	5%	**$23,632**
3	Miscellaneous Costs	2.5%	**$11,816**
	Includes but is not limited to: Site Surveying, Test Borings, Sink Hole Investigation, Builders Risk Insurance, Building Permit, Labor and Industry Fee, Document Printing, Construction Testing, Storm Water Permit		
4	**Total Soft Costs**	17.5%	**$82,711**
	TOTAL PROJECT ESTIMATE		**$555,348**

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1. Rerouting gas, CATV, or phone lines. Additional improvements as may be required by municipal or other reviewing agencies having jurisdiction
2. Utility service and or connection fees.
3. Interpretive signage design.
4. Removal of unsuitable materials, sink hole remediation, or on lot disposal system designs.
5. Irrigation of athletic fields, and water reels
6. Project financing costs
7. Water Meter Pit and Tap cost are not included.