

SIMONE COLLINS
LANDSCAPE ARCHITECTURE
119 EAST LAFAYETTE STREET NORRISTOWN, PA 19401
PHONE: 610.239.7601 FAX: 610.239.7606
WWW. SIMONECOLLINS.COM

MEETING NOTES

| | | | |
|-----------|----------------------------|--------------------|----------------------------------|
| Project: | Menlo and Lenape Parks | Project No.: | 15066.10 |
| Location: | Perkasie Borough Building | Meeting Date/Time: | 11/12/2015 7PM-8:30PM |
| Topic: | Study Committee Meeting #1 | Issue Date: | 5/4/2016 |

NOTES:

- W Rock Rec Commission
 - Operates Holiday House
- Pennridge H.S. pool
 - Odd hours for public use
 - Penn Ridge Aquatics
- Stakeholders
 - Little league
 - American Legion baseball
 - Connie Mac baseball
 - Chamber of Commerce
 - Perkiomen Economic Improvement Association
 - Add others....
- Joe Ferry
 - Bus association
 - Communications
 - Editorials in Herald – publicity
- Tom Skiffington
 - Runs Community Day
- K.P. interview nominees
 - Rick Doll Historical Society
 - Larry at Perkiomen Restaurant
 - Add others...
- Historical Society
 - Carousel, cover bridge, photos
- Fire Company
 - Carnival
- Dog Park
 - Borough is now responsible since March 2015 ([501c3] user group disbanded)

- 1937 Park & Recreation Commission – origin of park
 - Lenape Park WPA
 - Built pavilion
 - Built skate rink
 - Built dam
- Lions Pavilion – near carousel
- BSA
 - Cabins, conservation project
 - Troops 1, 79, 88?
- Girl scouts of America – active in park
- Churches
 - Calvary – service in park by member (add representative to stakeholders)
- Skate Park
 - Borough has an email list of skaters
 - Heavily-used
 - Was moved (twice) to reconfigure layout
 - Trash issues – source from park or road is unsure
 - McDonalds offered maintenance of skate park area
- Bucks County Bike Coalition
 - Sponsor a Bike Safety Day
- Appalachian Mountain Club
 - Walkabouts
 - John Bruner
 - Highland Trail
- Pennsylvania Environmental Council – Patrick Starr
- DVRPC – the Menlo Park Trail is on the Circuit
- East Coast Greenway– Andy Hamilton.
- Liberty Bell Trail
 - The trail feasibility study needs to be updated
 - 20 municipalities along entire route, some not interested
- Montgomery County Planning Commission - interested
- Montgomery County Municipalities – not interested
- Bucks County Planning Commission – Paul Gordon
- Central Bucks Trail – Thru East Rockhill Township alignment
- Acquisition Goals - \$338,000 remaining in Bucks County Open Space Funds – need to be invested by December 2017
 - Can be used for acquisition
 - Planning uses - tbd
 - Cannot be used for development
- 2010 Bucks County Open Space Plan
- Pocket parks (3) next to Landis Supermarket - under development
- PA Horticulture Society / DVRPC
 - DCNR Grant – stream bank stabilization planting
- Car Club

- Good Time Motivators – 1 show/ year
- Church – soft ball league
- Bucks County Tennis Association
- Cross Country – Lenape park used for H.S. wrestling training
- 5K Fundraisers about 12 times per year
- Disc Frisbee
 - Sellersville – currently features 18 holes
 - Disc players want an additional 9 holes – possibly in Perkasio
- Disc golf clubs – volunteer maintenance?
- Basketball summer league
- Stream bank stabilization
 - Fishing
 - 1st fishing derby in 2015
 - F&B stocks – Spring & Fall
 - Very shallow for boating
 - No talks of dredging – DEP objections
 - PECO Diversion – 77 cubic feet/second original permit .
 - Still being diverted?
- DCNR App – April, 2016 projects TBD
- Goal – ADA access to creek
- Borough fee in lieu \$1,500/ reserved per lot
- Dept. of Community Economic Development
 - Greenway Trail Recreation Program (GTRP)
- DVRPC / PennDOT District 6 – Transportation Alternatives Program
- H.S. Easement for Trail
 - Priority Project, potential funding
 - DCNR – C2P2
 - BCPC – OS funds – probably not
 - TAP funds - possible
- Multi-modal grants – DCED, PennDOT
- Pedestrian access to Town Center
 - Down 8th St.
 - Previously submitted DCED multi-modal
- Meeting on 12/1/2015
 - Perkasio meeting with DVRPC at PennDOT King Of Prussia
- Liberty Bell Trail / Link
 - Need improvements - potential funding
 - T.A.P. construction 80%
 - DCNR 20%
 - DCED up to \$250
- ADA creek access – priority need – potential funds
 - DCNR
 - DCED
 - Fee in lieu
- Fed \$ - for Lenape Park TBD

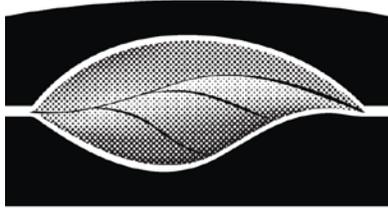
- Liberty Bell Trail
 - Application by Perkasio with a group of support municipalities
 - Needs Feasibility study update
 - Say \$70,000
 - DCNR – 30K
 - BCPC – 30K
 - DCED – GTRP – 10K
 - Fee in lieu (Perkasio)
 - Other municipalities
- Pool - \$25,000 Net income (gross)
 - Borough Electric Company pays the debt service on pool
 - Electric Service to pool - pro bono
- Carousel
 - Historical Society Maintenance Dept.
 - Rich Don
 - Bere???
 - Borough owns
 - Open 1 month and special events / proms
- Weddings
 - 20/ year approximately
 - Covered bridge – on dry land
 - Roebling Bridge over creek
 - Minimum charges by Borough
- THWY of park users – by Carolyn
- Public Meetings – dates to be proposed and confirmed
 - #1 – January (not December)
 - #2 – March
 - #3 – May (in park)
 - #4 – June (not August)
- Carolyn – set all dates & advertises all at once
- FYI – Mondays & Wednesdays = Borough meetings
- Committee meetings – linked to public meetings
- Public survey – Simone Collins to draft for community meeting review
 - Borough has email data base – for email blast

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Sincerely,
SIMONE COLLINS, INC.
LANDSCAPE ARCHITECTURE

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Pankaj (PJ) Jobanputra
Project Manager



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MEETING NOTES

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|-----------|----------------------------|--------------------|------------------------------|
| Project: | Menlo and Lenape Parks | Project No.: | 15066.10 |
| Location: | Perkasie Borough Building | Meeting Date/Time: | 2/16/2016 7PM-8PM |
| Topic: | Study Committee Meeting #2 | Issue Date: | 5/4/2016 |

NOTES:

Presented Powerpoint with two preliminary concept diagrams

- 1910 Harbor Act - Navigable water ways – ACOE
- Chap 105 PA regulation
 - Joint permit process
 - DEP
 - ACOE
 - General permits
- Aerial Photos of Menlo and Lenape Parks
 - Larger lake
 - Historic aerials (Penn Pilot)
 - 1938
 - 1958
- Wetlands – “Community of special concern”?
- North side – is steep slopes, not wetland
- Streambank stabilization projects (previous tree plantings)
- Hillside erosion channels need stabilization
- Perhaps stormwater BMPs can be created at the top of slope near the intersection of Walnut St and Constitution Ave.
- Limited “development” of almost any kind in wetlands?
- A toilet is located next to ball field on south side
- Limited sight distance at park entrance near the intersection of Constitution and Walnut
- Loss of girl’s softball (church league) in Concept?
- Constitution Ave – needs to be labeled on plan
- Concept – replace dog park with relocated ice hockey, also serve roller hockey
- Is playground good in Concept 2?
- Ordinance allows varying buffer widths
- Phase in buffer plantings
- Map different buffers on plans
- Storm system

- Ephemeral “stream” channel restoration on hillsides
- Add picnic tables
- Wind generator – was a demonstration grant

Other Notes:

The Committee thought the analyses were helpful and the concepts were moving in good directions.

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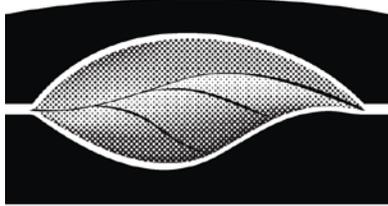


Pankaj (PJ) Jobanputra
Project Manager

Menlo and Lenape Parks Master Site Development Plan

Study Committee Meeting 2 - Sign In Sheet February 16, 2016

| Name | Email Address | Attendance (Please check) ✓ |
|------------------------------|---------------|-------------------------------------|
| Carolyn Hanel | | <input checked="" type="checkbox"/> |
| Scott Bomboy | | <input checked="" type="checkbox"/> |
| Chris Uncango | | <input checked="" type="checkbox"/> |
| Flo Ann Frei | | <input checked="" type="checkbox"/> |
| Richard Hendricks | | <input checked="" type="checkbox"/> |
| Kris Baker | | <input checked="" type="checkbox"/> |
| Mary Pappas | | |
| Stephen Barth | | |
| Bill Collins, Simone Collins | | |
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MEETING NOTES

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|-----------|------------------------|--------------------|------------------------------|
| Project: | Menlo and Lenape Parks | Project No.: | 15066.10 |
| Location: | Perkasie Borough Hall | Meeting Date/Time: | 3/29/2016 7PM-8PM |
| Topic: | Study Committee Mtg #3 | Issue Date: | 5/4/2016 |

NOTES:

Presented composite plan. Comments/recommendations from Committee below:

- ADA parking by twin bridges
- Thru boardwalk within wetlands
- Southside Constitution Ave. sidewalks?
- ADA parking close to bandshell
- ADA control at trail intersection
- Restaurant/pavilion into hillside?
- Plantings
- Pollenators
- Interpretive environmental plantings
- Bringing north side drop-off closer inside site to better accommodate bandshell

Other Notes:

The committee wanted the team to take a closer look at the proposed vehicular circulation within the park.

Future Public Meeting Dates:

Public Meeting #3 – Tuesday, April 5th

Public Meeting #4 – Tuesday, May 24th

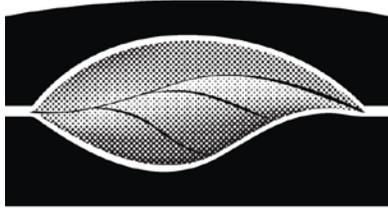
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MEETING NOTES

Project: Menlo and Lenape Parks Project No.: **15066.10**
Location: Pennridge Community Center Meeting Date/Time: **2/2/2016 12PM-1PM**
Topic: Stakeholder Meeting #1-Seniors Issue Date: **5/2/2016**

NOTES:

Goals:

- Master Site Development Plan
 - Linkage to community
 - Preserve resources
-

Facts:

- Lenape Pow wow-yearly
 - Paul Clymer - friend
 - Canoe race – previous event
 - Veterans-Memorial Day
 - Eagle/Boy Scouts of America projects
 - Picnics
 - Flooding near Sellersville
 - Lions Club-chicken BBQ
 - Summer-Quakertown band/concert-temporary stage
 - Skate park
 - Carnival/car show
 - Restrooms (3), one located in Menlo and two in Lenape
 - Too much volume-peak use
 - Not entirely ADA accessible
 - Parking issue for Little League
 - Kulp ball field-90' base path
 - Local school uses?
 - 4th of July Fest in past-now Pennridge Community Day
 - Create loop Trail behind Armory
 - Existing gym at Armory- is a needed facility in the community
 - 5th and Arthur @ Menlo: sliding board is too high
-

Concepts:

- School picnics-in the past
- Fish stocking?
- Boating-past
- Fitness walk w/apparatus
- Access-walking from neighborhoods
- Minimum commercial
- Some new play apparatus
- Nature preserve-priority
- ADA access to Memorial
- Entry-needs upgrade-signage/visibility/aesthetic
- App for park/walking trail
- Frisbee golf expansion?
- Sidewalk on Constitution?
- Zip line on old toboggan run

- Night lighting?
 - Deeper outfield for Little League?
 - Private-reserve events-\$ for non-reservations, \$x2 for reservations
 - Ice rink with pump from Creek
 - People want historic uses
 - Habitat for bat houses, birds, bees, butterflies
 - \$10,000 donation for bandshell
 - Wildflowers
-

Partners (potential)

- Sellersville
- East Rockhill
- West Rockhill
- Hilltown
- DCNR
- Pennridge Community Center
- National Guard Armory
- Boy/Girl Scouts

Other Notes:

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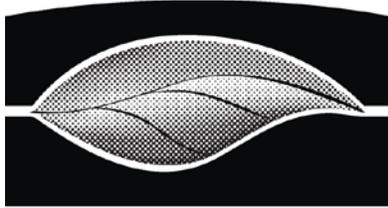
Pankaj (PJ) Jobanputra
Project Manager

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Menlo and Lenape Parks Master Site Development Plan

Senior Stakeholders Meeting - Sign In Sheet February 2, 2016

| Name | Email Address | Attendance (Please check) ✓ |
|-------------------|------------------------|-----------------------------|
| TED HEMBACH | bvalley69@gmail.com | ✓ |
| FRED WERTERMAN | | ✓ |
| Leo Inglin | | ✓ |
| Jim RAVE | | ✓ |
| Raymond Breker | | ✓ |
| Regina Schlitz | | ✓ |
| Robert Schlitz | rschlitz@comcast.net | ✓ |
| Robert Burdick | rburd39@yahoo.com | ✓ |
| Richard Sell | | ✓ |
| Leo Inglin | | ✓ |
| Dale Rozales | droades18944@yahoo.com | ✓ |
| Jean Balger | nana.balger@yahoo.com | ✓ |
| Arnold J. Blenden | arnold@blenden.com | ✓ |
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MEETING NOTES

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|-----------|-----------------------------|--------------------|-----------------------------|
| Project: | Menlo and Lenape Parks | Project No.: | 15066.10 |
| Location: | Pennridge High School | Meeting Date/Time: | 3/8/2016 6PM-7PM |
| Topic: | Stakeholder Mtg #2-Students | Issue Date: | 5/2/2016 |

NOTES:

Presented two preliminary concept diagrams. Public comment below:

- 5-6 tennis courts at Kulp Park
- 2015 was the first year for Bucks County Tennis Association (BCTA) activities in Perkasio
- BCTA was active for 8 years in Quakertown
- Dog park tends to become a mud pit but gets a lot of use; 50% from Perkasio
- People don't want their dogs to get muddy
- USTA provides grants for blended line courts-system used for kids of different ages
- BCTA is a non-profit, part of USTA
- Tennis courts are popular, used heavily
- No organized tennis leagues locally
- BCTA ran 1 program for 1 hour
- The dog park non-profit dissolved
- Perkasio Parks & Recreation feels Township could use more basketball
- Basketball at Kulp is packed on weekends; courts are next to tennis courts
- The basketball camp at Kulp has been in operation for 20-30 years
- Basketball program at Kulp has about 60 teams (100 at 1 point) that play on 3 courts
- Had to feed the light meter for them to stay on-they're now on a timer till 10, used to be 11
- Basketball league runs from mid-June to mid-August, every weeknight
- Other municipalities also started leagues
- Area for ice skating in the park is still flooded; it was used a handful of times this season
- Halfway house on Constitution Ave.
- People still walk where there are no sidewalks
- Chicken coops on hilltop-was a trolley stop across from coops?
- Tennis court template-lights closer to Walnut
- Crossing problem at Walnut and Constitution-no way to cross safely with bike

- Cross trail under bridge-would be beautiful
- When you're coming off opposite of Constitution, there's no adjacent crosswalk
- No negotiation with PennDOT in 10 years with Perkasio on bridge-what is head room?
- What type of face is abutment?
- Want to avoid traffic when traversing trail
- Bridge on Walnut-what is SW mitigation?
- Creek on the Sellersville side is armored with large concrete blocks, it's one culvert
- Stream bank restoration and trail spur could happen at Pleasant Spring-how many properties are affected?
- Parking lot across from Menlo at Arthur and Elm-some contamination-Borough owns it-connect it upstream from lower parks for tennis
- Delbar's owns the empty lots on Spruce between 4th and 5th
- Perkasio wants trails to bring people downtown
- Highlands/Liberty Bell/Circuit alignment-this is Highlands now
- Scott Bomboy trying to get trolley station on NRHP
- In 20s, there was talk of a station in the middle of the park-never happened
- New Sellersville bridge-8' sidewalks-grading down to memorial
- Disc golf is popular-talking to David Rivet about expanding to Druckenmiller
- Nice to have connection under rail bridge past fire house
- SEPTA used a lease model for the Newtown Trail
- What is stored in the freight tankers-perception they could be empty-could they be nitro cars or maybe natural gas?
- New tennis helps promote BCTA
- Baseball and tennis happen together in June-park is full
- There was parking adjacent to Kulp
- People also park by the minor fields
- Restoration grant for covered bridge
- Is county fund-raising for fire protection? Dry hydrant?
- Concerns for organized hockey league? Should we have this or other fields?
- Design for flexibility-see what emerges?
- Are little leagues for other sports still popular?
- Disc golf, if bigger, could be a national thing
- Tournaments in Sellersville for disc golf
- Scout cabin has disc golf map
- Can we sneak some of the course into Lenape?
- If the Sellersville disc golf group installed the Tyler Park course, did they negotiate the right to host tournaments?
- Is National Guard armory going to be retired? Maybe become a community center?

Other Notes:

The public was generally receptive to the concept plans and in the ideas being presented.

Future Public Meeting Dates:

Public Meeting #3 – Tuesday, April 5th

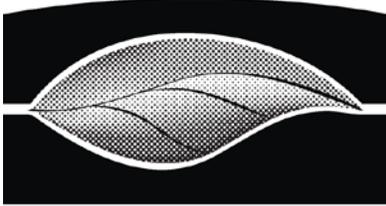
Public Meeting #4 – Tuesday, May 10th

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MEETING NOTES

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| Project: | Menlo and Lenape Parks | Project No.: | 15066.10 |
| Location: | Perkasie Borough Hall | Meeting Date/Time: | 3/22/2016 6PM-7PM |
| Topic: | Stakeholder Mtg #3-Admin | Issue Date: | 5/2/2016 |

NOTES:

Presented two preliminary concept diagrams. Public comment below:

- The concrete structure on the hilltop in Sellersville is a pump house-an attractive nuisance
- Sellersville bridge-December 2016
- Perkasie required 8' wide sidewalk on the new Walnut St Bridge
- Ice skating-pay money for river water
- 30 days of ice skating this season
- Relocation of the dog park is wetter
- Dog park is popular with fence; drainage issues
- No under-14 use
- Keep park visible
- Disc golf-respected
- Improve parking near disc golf, include ADA
- Volleyball Concept 1 area-never used
- Feature turtle
- Hatfield pavilion
- Pavilion open thru
- Stone pavilion (existing)-graffiti issue
- Use of bandshell?
- Pavilion location on the south side
 - Double outfield as spectator area
- Identify and add fishing locations, including accessibility
- "Fire ring"
- Opposite side boat launch on south side
 - Shallow in this location
- South side of island-silt
- Deeper towards Sellersville
- Sellersville dam plans
- Habitat structures in creek for fish

- Stream bank restoration
- Overflow for high flows
- Aquatic planting
- Marriages on the island
- rentals

Other Notes:

The stakeholders were generally receptive to the concept plans and in the ideas being presented.

Future Public Meeting Dates:

Public Meeting #3 – Tuesday, April 5th

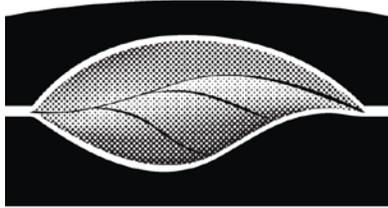
Public Meeting #4 – Tuesday, May 24th

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MEETING NOTES

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| Project: | Menlo and Lenape Parks | Project No.: | 15066.10 |
| Location: | Perkasie Borough Building | Meeting Date/Time: | 1/12/2016 7:30 PM-8:30PM |
| Topic: | Public Meeting #1 | Issue Date: | 5/2/2016 |

NOTES:

Goals:

- Master Site Development Plan
 - Linkage to community
 - Preserve resources
-

Facts:

- Floodplains/wetlands
- Steep slopes
- Existing play areas
- Skate Park as “babysitter”
- WPA pavilion
- Library site was home to a “casino” building, bowling
- People from other towns visit the parks frequently
- Trail extension behind the Sellersville firehouse to Druckenmiller Park?
- Park ties into public utilities
- No sidewalk connection along Constitution Ave in Sellersville
- New Walnut St. Bridge will have sidewalks on both sides (so pedestrians “stay” in the park)
- East Branch Perkiomen is a registered trout stream
- Fall Festival is October
- Parks have 2 sets of restrooms – both on the north side of the Creek, one near Carousel and one near little league fields.
- Historic Society says Covered Bridge needs repairs
- Covered Bridge is oldest covered bridge in state
- Covered Bridge is not ADA accessible onto deck
- Tennis, baseball, basketball at Kulp Park
- Rail last passed through Perkasie in 1982
- Trolley ran till 1951
- Original carousel opened in 1892, new carousel is 65 years old
- Boats operated in Lake Lenape until the early 1950s
- Creek was wider-this was Lake Lenape,
- WPA built bridges/island
- There was an amusement park in the upper level, lower level had amusement as well
- There is sometimes water around the bridge
- The Aquatic Center runs swim meets at the same time as other

- events-shouldn't have to make choice
- Community Day-1st Sunday after July 4th
- Area roadway bridge replacements surrounding the park will be happening concurrently
- New development across Constitution Ave from park will have sidewalks
- Skate Park built with user input
- Outdoor storage area beyond ice skating belongs to Borough
- Who owns Sellersville RR station?
- Original idea for bandshell-between station and Treasure Trove
- Twin bridges are Roebling design that locals built
- Electrification requirements as reason for not resuming SEPTA regional rail service through Perkasié
- Popular disc golf course (in Sellersville)
- Accessibility needs to be essentially universal
- Seasonal activities

Concepts:

- Improved vehicular access
- Upgrade athletic facilities
- Usable, accessible, friendly to community
- Locate bandshell within 100 yards from restroom
- Possibly making Covered Bridge ADA
- Make a trail connection at the trolley head
- Constitution Ave entrance-improve park sign
- Menlo playground needs improvements
- Appropriate screening at Skate Park (visible & stylish)
- Tutorial for new users of Skate Park
- Murals, canopies at Skate Park
- Build bandshell into side of hill across from island
- Hillside bandshell might be difficult to access
- Bandshell next to ice skating area (floodway)?
- Bike share facility?
- Regional trail-through the park or through the town?
- Use Sellersville RR station to build bike share station to link to Perkasié
- Create a trail loop with Sellersville on the south side of the Creek?
- Tie in history of "turtle" as interpretive theme
- Use Souderton bandshell as example for new bandshell
- Put an older group use next to the Skate Park as a way to keep an eye on it
- Accessibility for ADA/elderly
- Make the entrance driveway more conventional – possible realignment
- Roebling bridges should be accented-part of interpretation (wedding pictures taken there)
- Covered Bridge as an entranceway-it's an icon
- Skate Park needs improvements
- Playground – add splashpad for families
- Stormwater BMPs
- Rail and greenway corridors
- Boardwalk through wetlands
- History and environmental education

Partners (potential)

- Sellersville
- East Rockhill
- West Rockhill
- Hilltown
- DCNR
- Sellersville Fire House
- Sellersville Mayor and Manager
- Pennridge Little League
- Other rec groups
- Church league
- National Guard Armory
- Boy/Girl Scouts

Other Notes:

It was decided by present members of the Study Committee and SC to move the meeting start time up to 7PM from 7:30PM.

Future Public Meeting Dates:

Public Meeting #2 - Tuesday, February 23rd

Public Meeting #3 - Tuesday, April 5th

Public Meeting #4 - Tuesday, May 10th

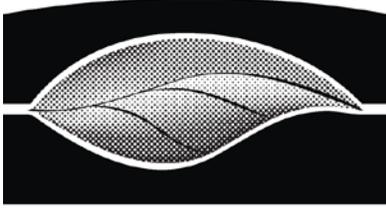
Please submit any written comments by end of day on Tuesday, January 26th.

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MEETING NOTES

| | | | |
|-----------|---------------------------|--------------------|------------------------------|
| Project: | Menlo and Lenape Parks | Project No.: | 15066.10 |
| Location: | Perkasie Borough Building | Meeting Date/Time: | 2/23/2016 7PM-8PM |
| Topic: | Public Meeting #2 | Issue Date: | 5/2/2016 |

NOTES:

Presented Powerpoint with two preliminary concept diagrams. Public comment below:

- Covered bridge is 3rd oldest in the state and oldest in Bucks County
- 3 restrooms in the park
- Concrete structures on the hilltop in Lake Lenape Park could be chicken houses
- Sellersville bridge-lay banks back so people can walk on sidewalk
- In Concept 2, is the relocated dog park in the wetland? If so, it would have to be adjusted
- People usually drive their dogs to the dog park so car access/parking proximity is key
- In Concept 2, the dog park may be hidden by trees, will people be aware of it?
- Need walkway by the hill/carousel-may not be possible for it to be ADA
- As the park is in close proximity to Kulp Park, there is a need to look at what facilities are nearby and avoid overdevelopment
- Keep the skate park as a park and more of a confined space, not a plaza like in Bethlehem
- Senior citizens love watching their grandkids at the skate park
- Pavilion improvements received positive reception
- Provide parking for the dog park
- Is there enough parking for the bandshell?
 - Site is not able to accommodate 1,000 cars (using max capacity of 2,500 people at an event/2.5 people per car) but there is no need to accommodate this amount
 - People can walk from the neighborhoods, park in the shopping center, park on the north lawn (75-100 cars) or shuttle in
- There is shade on the north side
- South side is close to most of the parking
- Because of the presence of the wetlands, where would opportunities for stream access for events be situated?
 - Trails as laid out by riparian buffers can be used

- Stream banks are steep so remediation must occur
- River is currently disconnecting from the flood plain-these lower elevations could be accessible
- It might be swampy in these areas
- Fishing access would be different
- People claim fishing is better on the other side of Walnut St. from the park
- Need to include adequate access to the stream edge
- If there is a proposal to remove the creek dams, a recommendation on how to re-establish a natural character could be considered
- Is Perkasio aware of the Rivers Conservation Plan funded by DCNR?
- Shaun McAdams noted there is a derelict sewer in the park that could be daylighted
- Covered bridge is one of the first covered bridge restoration projects in the country
- Bridge should be part of the trail system
- Area around the bridge should be landscaped
- Install heavy duty swing benches on the island (ex. park in Perrysburg, OH)
- Park was built in the 1930s with help from the WPA and is 128 acres with half in Perkasio and half in Sellersville

Other Notes:

The public was generally receptive to the concept plans and in the ideas being presented.

Future Public Meeting Dates:

Public Meeting #3 – Tuesday, April 5th

Public Meeting #4 – Tuesday, May 10th

This report represents the Professional's summation of the proceedings and is not a transcript. Unless written notice of any correction or clarification is received by the Professional within ten days of issue, the report shall be considered factually correct and shall become part of the official project record.

Sincerely,
SIMONE COLLINS, INC.
LANDSCAPE ARCHITECTURE

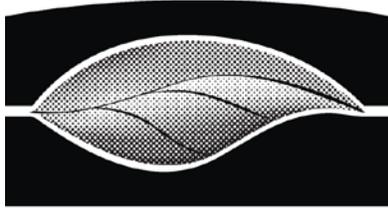


Pankaj (PJ) Jobanputra
Project Manager

Menlo and Lenape Parks Master Plan

Public Meeting #2 - Sign In Sheet February 23, 2016

| Name | Email | Group Affiliation or Place of Residence |
|-----------------------|-----------------------------|---|
| 1. HOLLENBACH, NELSON | boyalbert@comcast.net | PERKASIE PARK & RECY |
| 2. Vesely Jim | woritzvsey@verizon.net | Rennridge Rowatic Club |
| 3. TOM McNAVAGE | tmcnavage@comcast.net | SELLERSVILLE |
| 4. David Rivet | drivet@sellersvilleboro.org | Sellersville |
| 5. Judy Decker | jed2884@gmail.com | Perkasie |
| 6. Scott Bombay | sbombay@yahoo.com | Perkasie |
| 7. Shannon Rupp | srupp09@gmail.com | Abington |
| 8. Mischelle Tiedeken | cottage45@icloud.com | Perkasie |
| 9. Tom Trainer | tomtrainer615@gmail.com | Perkasie |
| 10. CHRIS CHANGCO | TIREOLEBOVES@AOL | PERKASIE |
| 11. FLO ANN FREE | flb.ann@verizon.net | PERKASIE |
| 12. Walters, Lisa | Lisa.walters22@gmail.com | Perkasie |
| 13. PAPPAS, MARY | mary.pappas@foxroachi.com | Perkasie |
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SIMONE COLLINS
LANDSCAPE ARCHITECTURE
119 EAST LAFAYETTE STREET NORRISTOWN, PA 19401
PHONE: 610.239.7601 FAX: 610.239.7606
WWW. SIMONECOLLINS.COM

MEETING NOTES

| | | | |
|-----------|---------------------------|--------------------|-----------------------------|
| Project: | Menlo and Lenape Parks | Project No.: | 15066.10 |
| Location: | Perkasie Borough Building | Meeting Date/Time: | 4/5/2016 7PM-8PM |
| Topic: | Public Meeting #3 | Issue Date: | 5/2/2016 |

NOTES:

Presented Powerpoint with composite plan, phasing plan, costs and illustrative sketches. Public comment below:

- Perkasie talked to County Commissioners about Walnut Street and Main Street Bridge construction happening at the same time
- General reception to a path on the old trolley line
- Ravines carved into the hillside-roots exposed
- Little League fields on the Perkasie side-Little League wanted to extend fence-this is shown in the new plan with a 220' outfield
- ADA fishing access does flood
- We would keep the driveway to the pool gate in Menlo; no problems with people driving back
- Wetlands boardwalk wood can be pressure treated; there is a cost issue; it's an initial investment vs. long-term maintenance
- Army Corps of Engineers prefer recycled wood
- Grant money is available for stormwater runoff measures
- Wetlands boardwalk is not lit
- Gate by pavilion in place to keep people from entering the back
- Comments against taking away the Main Street Bridge stairway
- Hatfield bandshell uses laminated wood
- Quakertown and Hatfield bandshells have walls behind them
- Removing the pumping stations on the hill in Sellersville would have a cost

Other Notes:

The public was generally receptive to the composite plan and the phasing of the improvements. There was general discussion on the types of funding sources available, like grants, to help pay for the improvements.

Future Public Meeting Dates:
Public Meeting #4 – Tuesday, May 24th

This report represents the Professional's summation of the proceedings and is not a transcript. Unless written notice of any correction or clarification is received by the Professional within ten days of issue, the report shall be considered factually correct and shall become part of the official project record.

Sincerely,
SIMONE COLLINS, INC.
LANDSCAPE ARCHITECTURE

A handwritten signature in black ink, appearing to be 'PJ Jobanputra', written in a cursive style.

Pankaj (PJ) Jobanputra
Project Manager

Menlo and Lenape Parks Master Plan

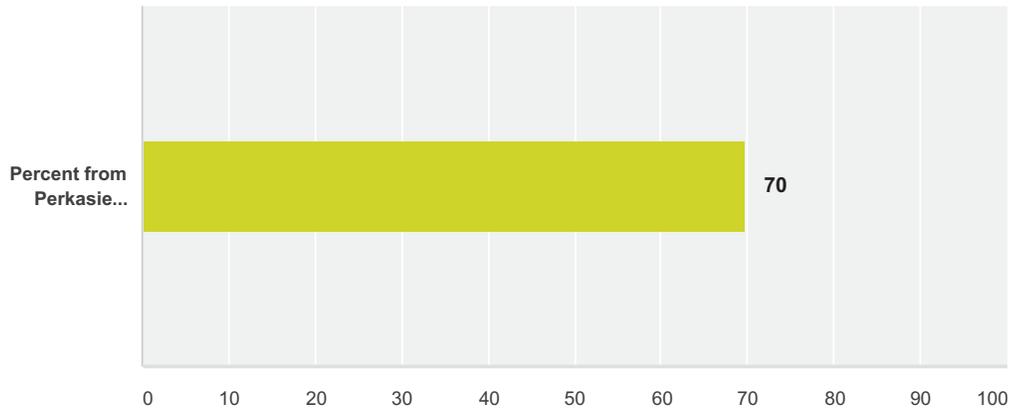
Public Meeting #3 - Sign In Sheet

April 5, 2016

| Name | Email | Group Affiliation or Place of Residence |
|--------------------|----------------------------------|---|
| Allison Yannaccone | --- | MENIO AQUATICS CENTER MANAGER |
| Valarie Linaberry | - | Perkasie Perkasie |
| Tim Morrison | | |
| Denise Darrell | ddarrell2a@gmail.com | Resident / Perkasie |
| Karen Silk | | Resident / Perkasie |
| Nelson Hollenbach | | Perkasie |
| Jennifer Feath | edonnell13@comcast.net | Perkasie |
| Scott Ambrey | | Perkasie |
| Shannon Rupp | shupp09@gmail.com | Perkasie |
| BARRY GERHART | | PERKASIE |
| Donna Pirone | | Perkasie |
| Dan Gilbert | publicworks@perkasie borough.org | Perkasie |
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Q1 What is the name of the municipality you live in?

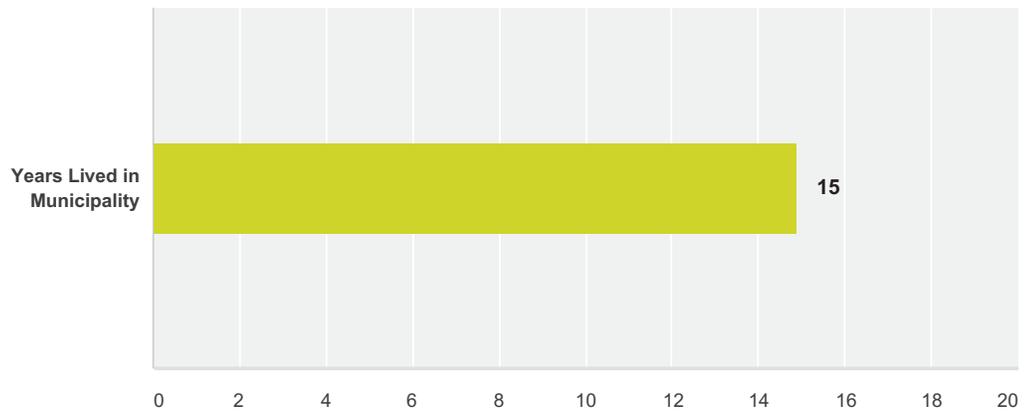
Answered: 188 Skipped: 16



| | Perkasie Borough | Sellersville Borough | East Rockhill Township | West Rockhill Township | Hilltown Township | Total | Weighted Average |
|-------------------------------|------------------|----------------------|------------------------|------------------------|-------------------|-------|------------------|
| Percent from Perkasio Borough | 69.68% 131 | 9.04% 17 | 9.57% 18 | 2.66% 5 | 9.04% 17 | 188 | 69.68 |

Q2 How many years have you lived in your current municipality?

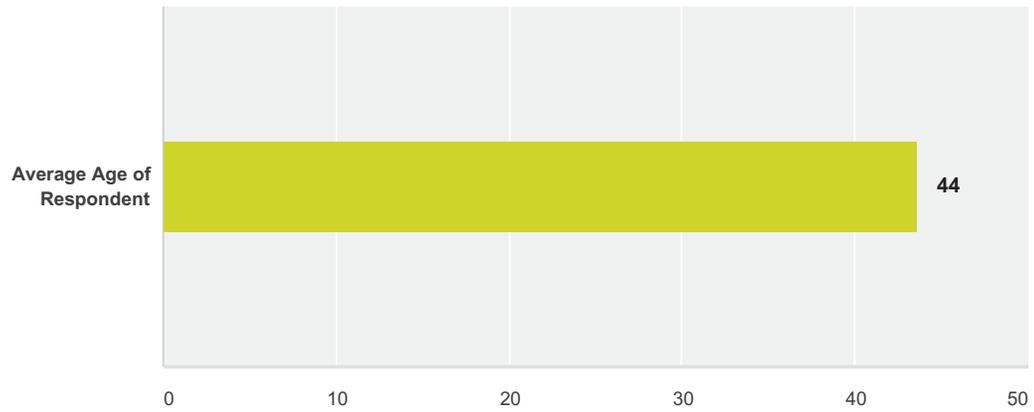
Answered: 204 Skipped: 0



| | 0-5 | 6-10 | 11-20 | 21-30 | 31-40 | 41-50 | 51+ | Total | Weighted Average |
|-----------------------------|--------------|--------------|--------------|--------------|-------------|------------|------------|-------|------------------|
| Years Lived in Municipality | 25.49% 52 | 23.53% 48 | 21.57% 44 | 17.65% 36 | 5.39% 11 | 4.41% 9 | 1.96% 4 | 204 | 14.91 |

Q3 What is your age

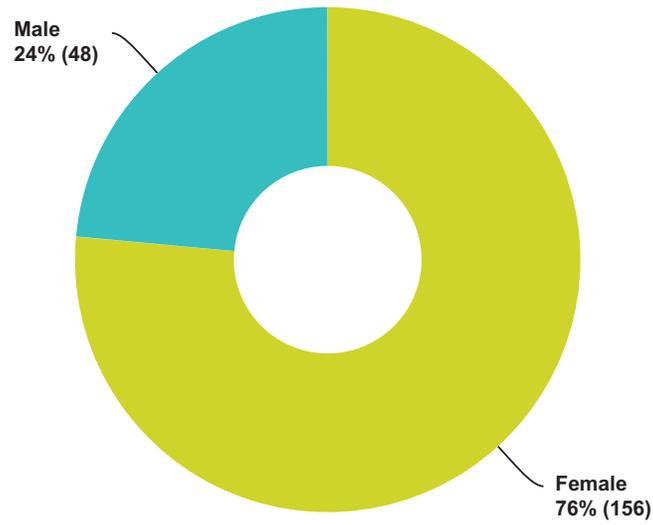
Answered: 204 Skipped: 0



| | >12 | 13-18 | 18-24 | 25-34 | 35-44 | 45-54 | 55-64 | 65+ | Total | Weighted Average |
|---------------------------|------------|------------|------------|--------------|--------------|--------------|--------------|-------------|-------|------------------|
| Average Age of Respondent | 0.00% 0 | 0.49% 1 | 3.43% 7 | 18.63% 38 | 37.75% 77 | 21.57% 44 | 13.24% 27 | 4.90% 10 | 204 | 43.64 |

Q4 What is your gender?

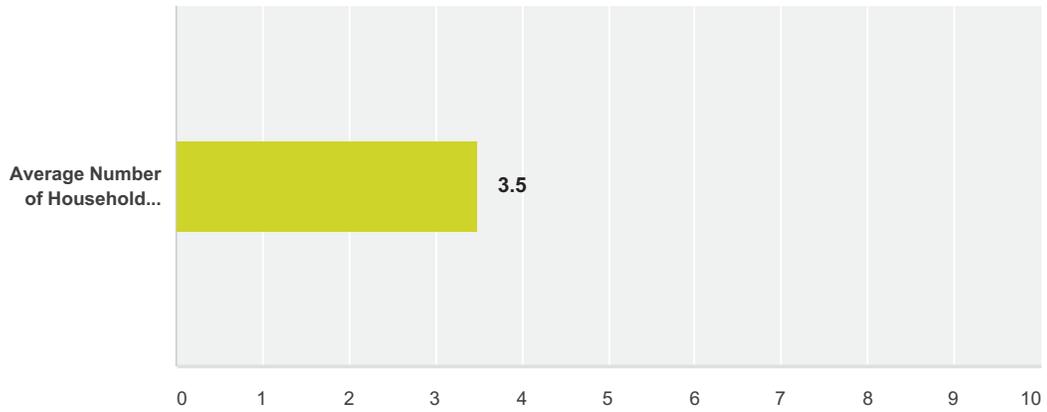
Answered: 204 Skipped: 0



| Answer Choices | Responses | |
|----------------|-----------|------------|
| Female | 76% | 156 |
| Male | 24% | 48 |
| Total | | 204 |

Q5 How many people currently live in your household?

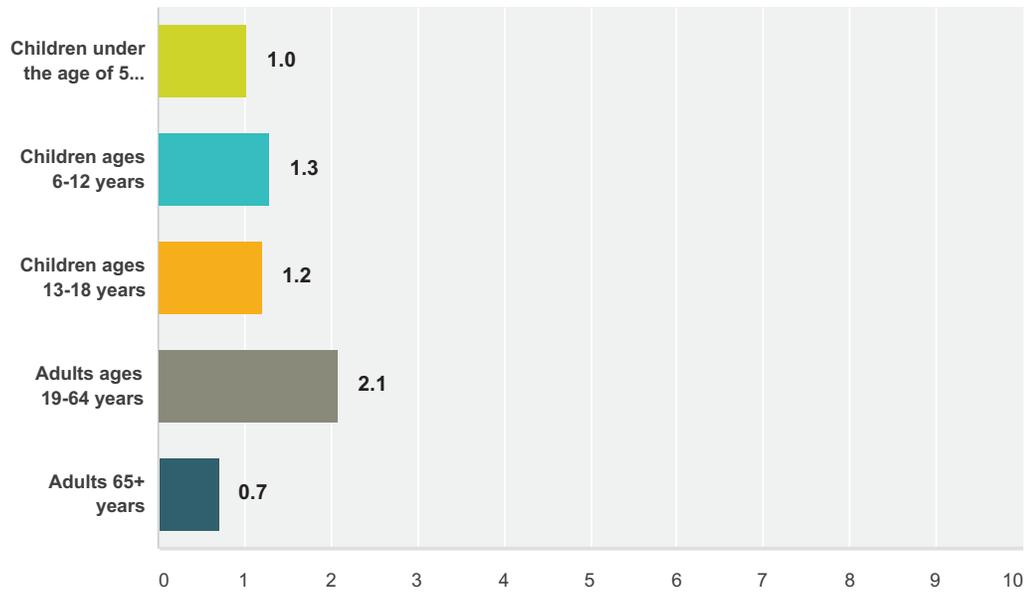
Answered: 204 Skipped: 0



| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10+ | Total | Weighted Average |
|-------------------------------------|-------------|--------------|--------------|--------------|--------------|------------|------------|------------|------------|------------|-------|------------------|
| Average Number of Household Members | 5.39% 11 | 22.55% 46 | 20.59% 42 | 31.37% 64 | 14.22% 29 | 4.41% 9 | 0.00% 0 | 0.49% 1 | 0.00% 0 | 0.98% 2 | 204 | 3.49 |

Q6 Please indicate how many people of each age group currently live in your household?

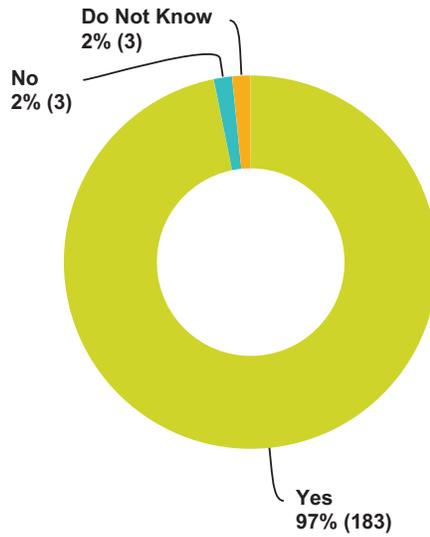
Answered: 202 Skipped: 2



| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10+ | NA | Total | Weighted Average | |
|-----------------------------------|--------------|---------------|--------------|------------|------------|------------|------------|------------|------------|------------|------------|--------------|------------------|------|
| Children under the age of 5 years | 38.37% 33 | 20.93% 18 | 3.49% 3 | 0.00% 0 | 1.16% 1 | 36.05% 31 | 86 | 1.02 |
| Children ages 6-12 years | 35.85% 38 | 30.19% 32 | 4.72% 5 | 0.94% 1 | 0.00% 0 | 0.00% 0 | 0.94% 1 | 0.00% 0 | 0.00% 0 | 0.00% 0 | 0.94% 1 | 26.42% 28 | 106 | 1.30 |
| Children ages 13-18 years | 44.58% 37 | 19.28% 16 | 1.20% 1 | 1.20% 1 | 0.00% 0 | 1.20% 1 | 0.00% 0 | 0.00% 0 | 0.00% 0 | 1.20% 1 | 1.20% 1 | 30.12% 25 | 83 | 1.22 |
| Adults ages 19-64 years | 10.94% 21 | 71.88% 138 | 10.94% 21 | 2.60% 5 | 0.52% 1 | 0.00% 0 | 0.52% 1 | 0.00% 0 | 0.00% 0 | 0.00% 0 | 0.52% 1 | 2.08% 4 | 192 | 2.09 |
| Adults 65+ years | 17.07% 7 | 26.83% 11 | 0.00% 0 | 0.00% 0 | 0.00% 0 | 0.00% 0 | 0.00% 0 | 0.00% 0 | 0.00% 0 | 0.00% 0 | 0.00% 0 | 56.10% 23 | 41 | 0.71 |

Q7 In the past 12 months, has any member of your household participated in any activities in parks, natural areas or open space areas in or around Perkasio Borough? This would include any recreational activity, such as walking, biking, participating in team sports, swimming, bird watching, boating, etc.

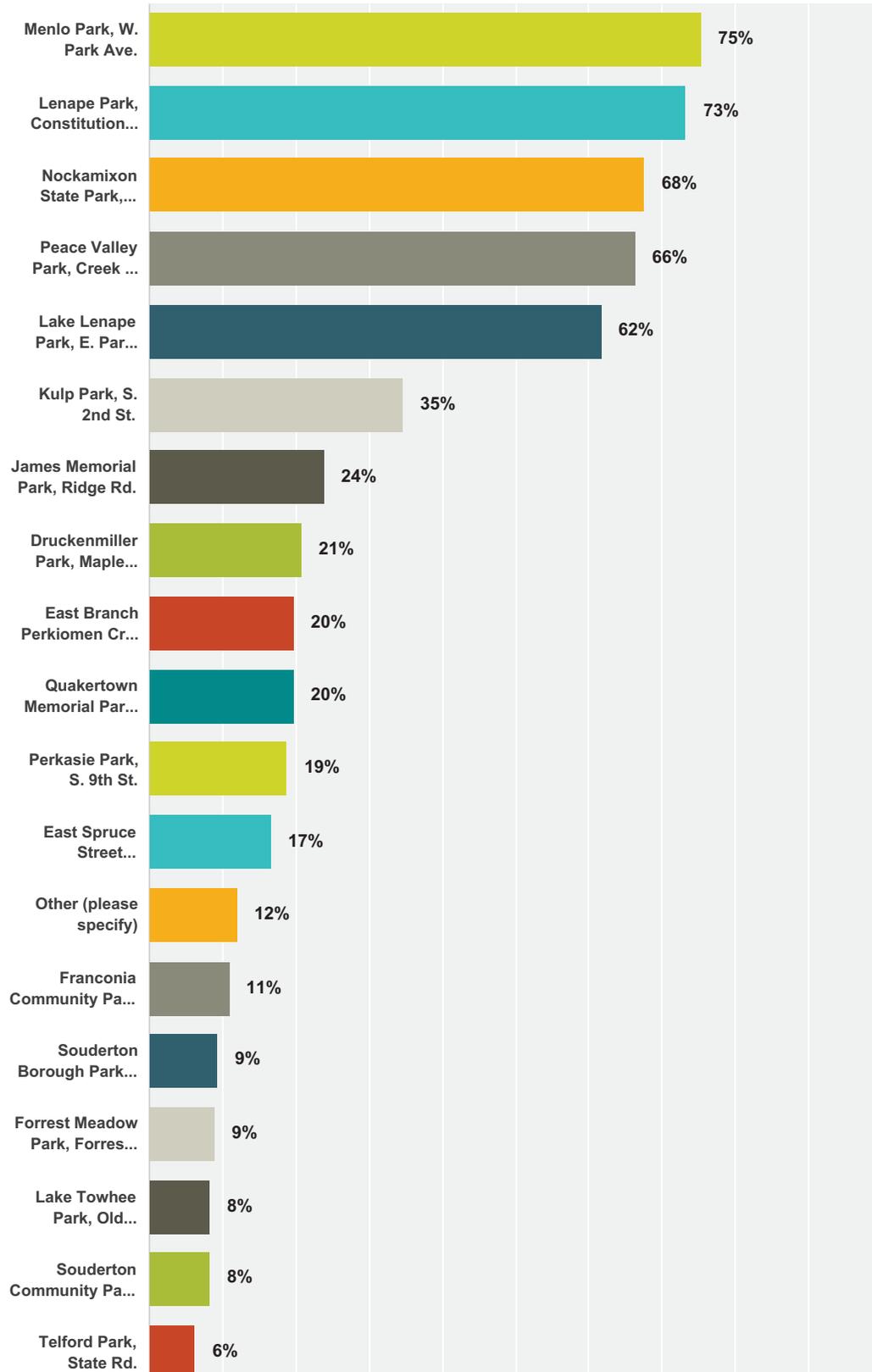
Answered: 189 Skipped: 15

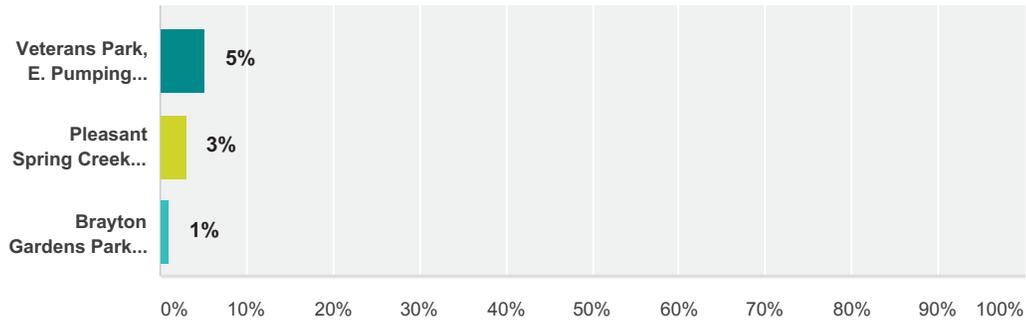


| Answer Choices | Responses |
|----------------|------------|
| Yes | 97% 183 |
| No | 2% 3 |
| Do Not Know | 2% 3 |
| Total | 189 |

Q8 Which parks, natural areas or open space areas do you visit for recreation purposes? (Please check all that apply)

Answered: 191 Skipped: 13

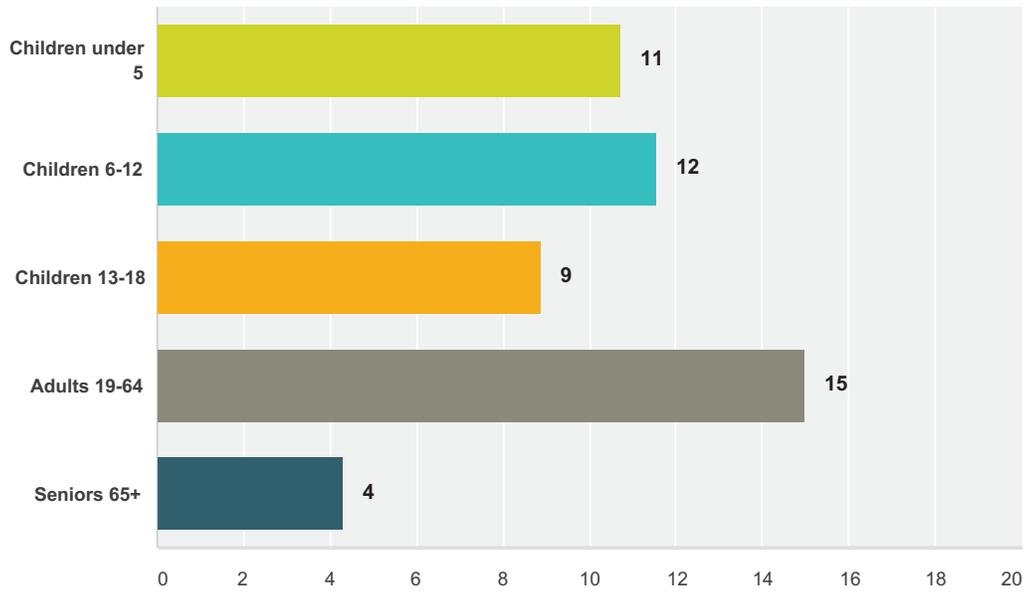




| Answer Choices | Responses | Count |
|--|-----------|-------|
| Menlo Park, W. Park Ave. | 75% | 144 |
| Lenape Park, Constitution Ave. | 73% | 140 |
| Nockamixon State Park, Mountain View Dr. | 68% | 129 |
| Peace Valley Park, Creek Rd. | 66% | 127 |
| Lake Lenape Park, E. Park Ave. | 62% | 118 |
| Kulp Park, S. 2nd St. | 35% | 66 |
| James Memorial Park, Ridge Rd. | 24% | 46 |
| Druckenmiller Park, Maple Ave. | 21% | 40 |
| East Branch Perkiomen Creek Greenway | 20% | 38 |
| Quakertown Memorial Park, W. Mill St. | 20% | 38 |
| Perkasie Park, S. 9th St. | 19% | 36 |
| East Spruce Street Playground, E. Spruce St. | 17% | 32 |
| Other (please specify) | 12% | 23 |
| Franconia Community Park, Godshall Rd. | 11% | 21 |
| Souderton Borough Park, Wile Ave. | 9% | 18 |
| Forrest Meadow Park, Forrest Rd. | 9% | 17 |
| Lake Towhee Park, Old Bethlehem Rd. | 8% | 16 |
| Souderton Community Park, West St. | 8% | 16 |
| Telford Park, State Rd. | 6% | 12 |
| Veterans Park, E. Pumping Station Rd. | 5% | 10 |
| Pleasant Spring Creek Greenway | 3% | 6 |
| Brayton Gardens Park, Dovecote Dr. | 1% | 2 |
| Total Respondents: 191 | | |

Q9 Thinking about members of your household who are in the age groups below, how many trips in total have the members of your household made to parks, natural areas and open space areas in the past 12 months? For example, a family of 4 visiting a park equals 4 separate trips in the appropriate age groups below.

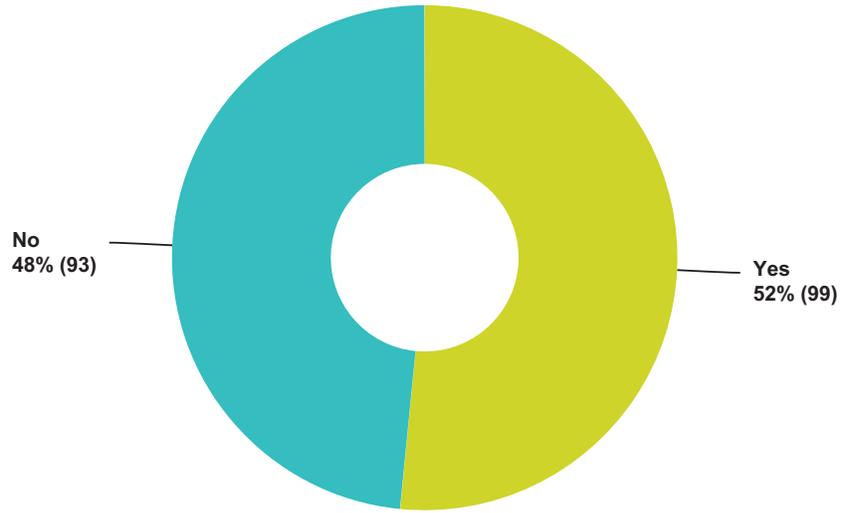
Answered: 187 Skipped: 17



| | 1-5 | 6-10 | 11-20 | 20 or more | N/A | Total | Weighted Average |
|------------------|--------------|--------------|--------------|--------------|--------------|-------|------------------|
| Children under 5 | 5.88% 5 | 5.88% 5 | 9.41% 8 | 43.53% 37 | 35.29% 30 | 85 | 10.71 |
| Children 6-12 | 6.38% 6 | 7.45% 7 | 8.51% 8 | 47.87% 45 | 29.79% 28 | 94 | 11.56 |
| Children 13-18 | 8.11% 6 | 17.57% 13 | 13.51% 10 | 27.03% 20 | 33.78% 25 | 74 | 8.91 |
| Adults 19-64 | 11.56% 20 | 13.87% 24 | 17.92% 31 | 54.91% 95 | 1.73% 3 | 173 | 14.99 |
| Seniors 65+ | 7.32% 3 | 2.44% 1 | 9.76% 4 | 12.20% 5 | 68.29% 28 | 41 | 4.29 |

Q10 Do you ride bike trails?

Answered: 192 Skipped: 12



| | Yes | No | Total | Weighted Average |
|------------|-----------|-----------|-------|------------------|
| (no label) | 52% 99 | 48% 93 | 192 | 1.52 |

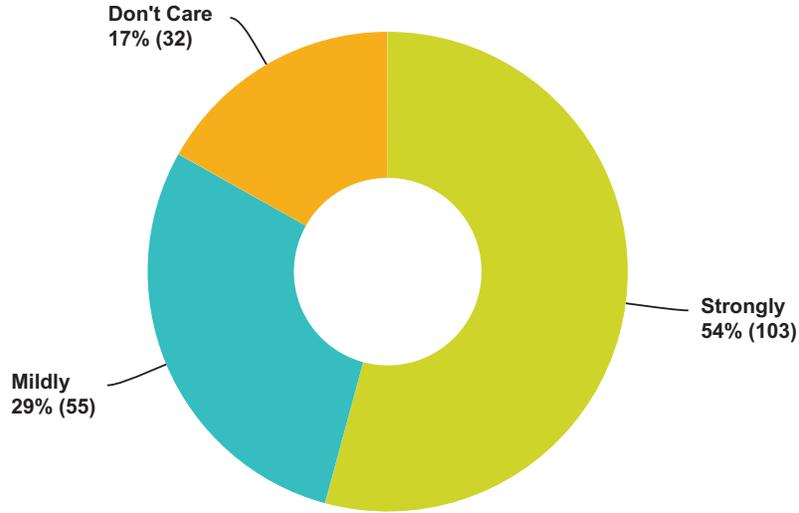
Q11 If you do ride bike trails, list the nearest ones you ride?

Answered: 83 Skipped: 121

| Answer Choices | Responses | |
|----------------|-----------|----|
| 1 | 100.00% | 83 |
| 2 | 44.58% | 37 |
| 3 | 20.48% | 17 |

Q12 Would you appreciate a regional bike trail to be extended through Perkasio Borough?

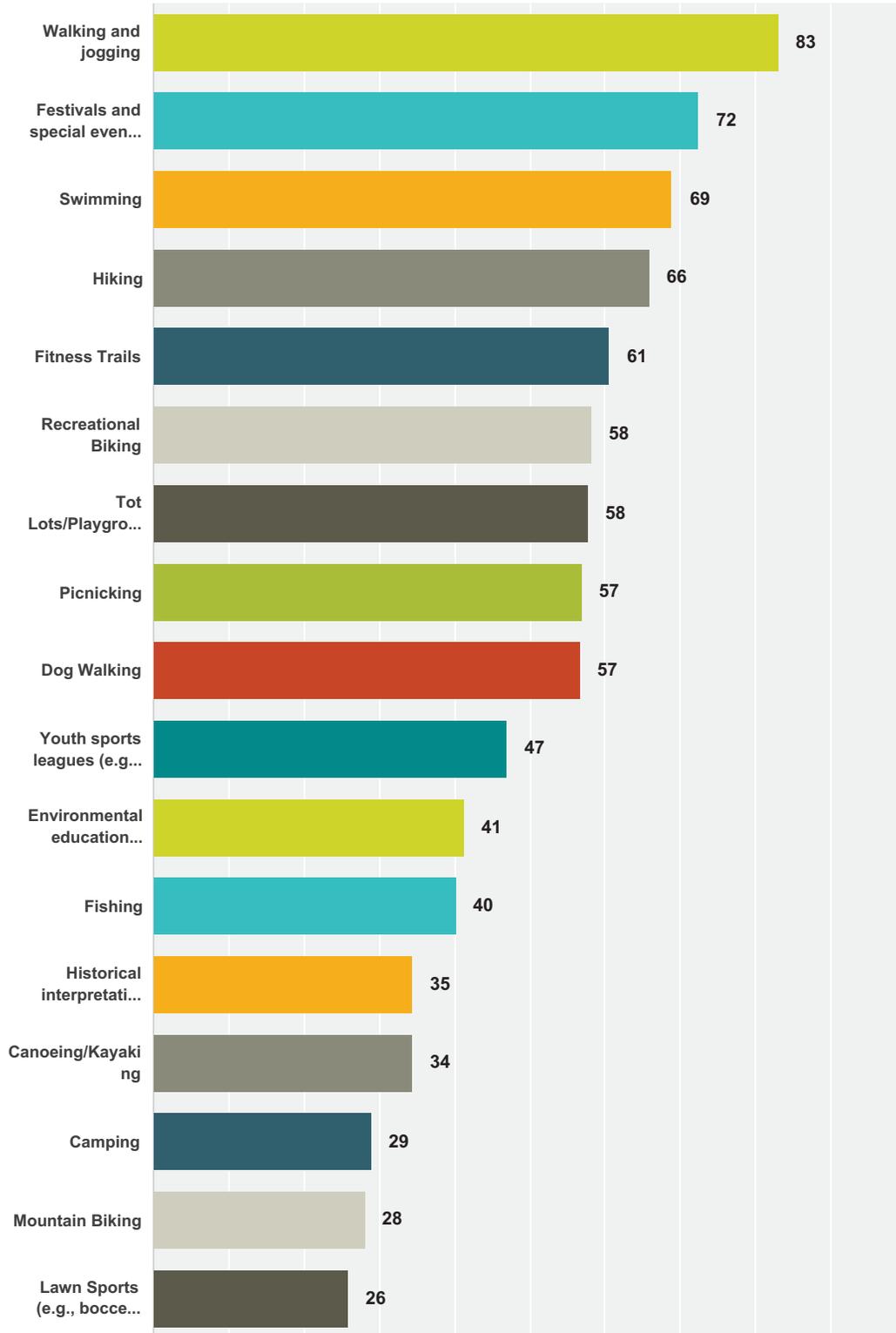
Answered: 190 Skipped: 14

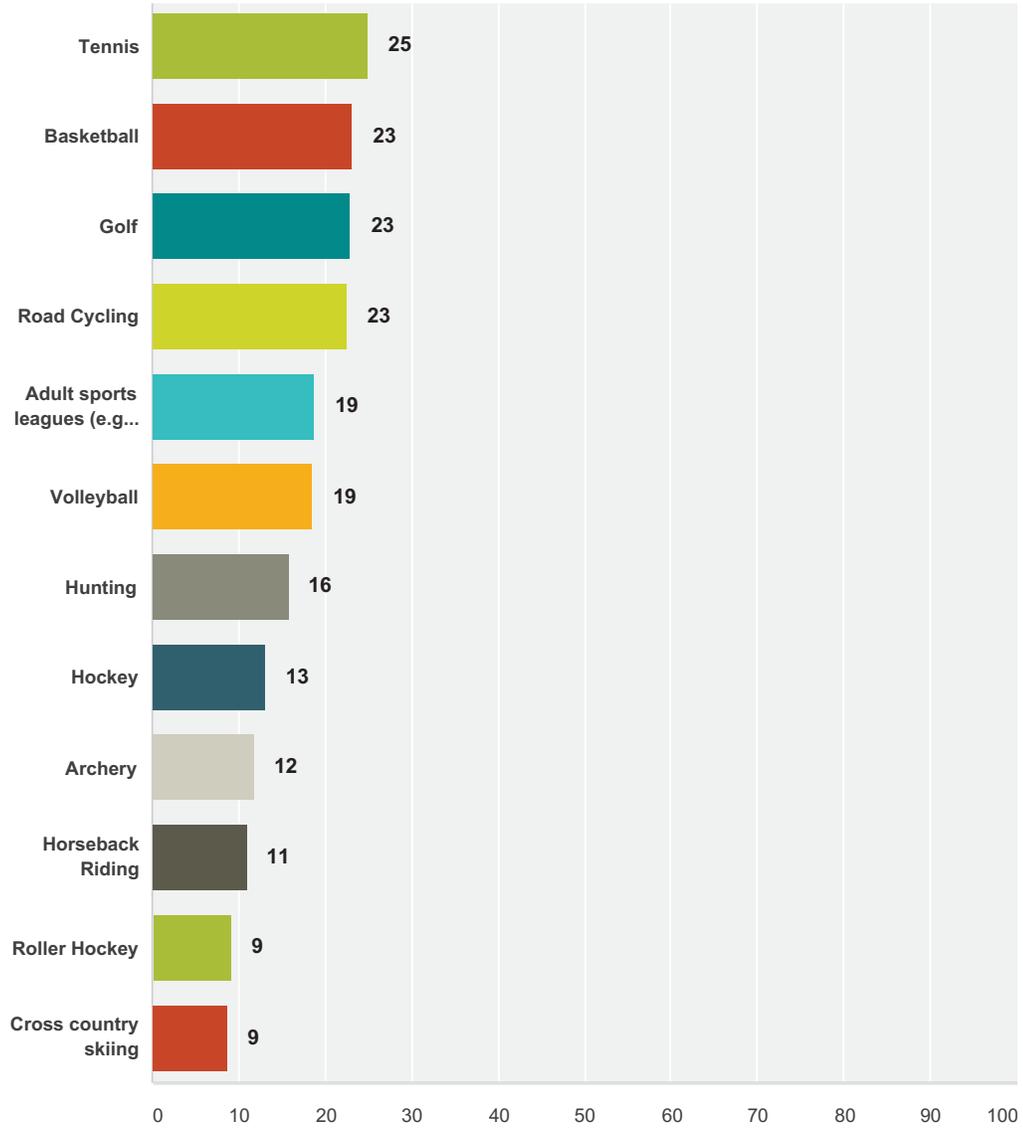


| | Strongly | Mildly | Don't Care | Total | Weighted Average |
|------------|------------|-----------|------------|-------|------------------|
| (no label) | 54% 103 | 29% 55 | 17% 32 | 190 | 68.68 |

Q13 The following is a list of outdoor activities often found in parks, natural areas, open space areas or recreational facilities. What activities do you participate in and around Perkaskie Borough?

Answered: 177 Skipped: 27



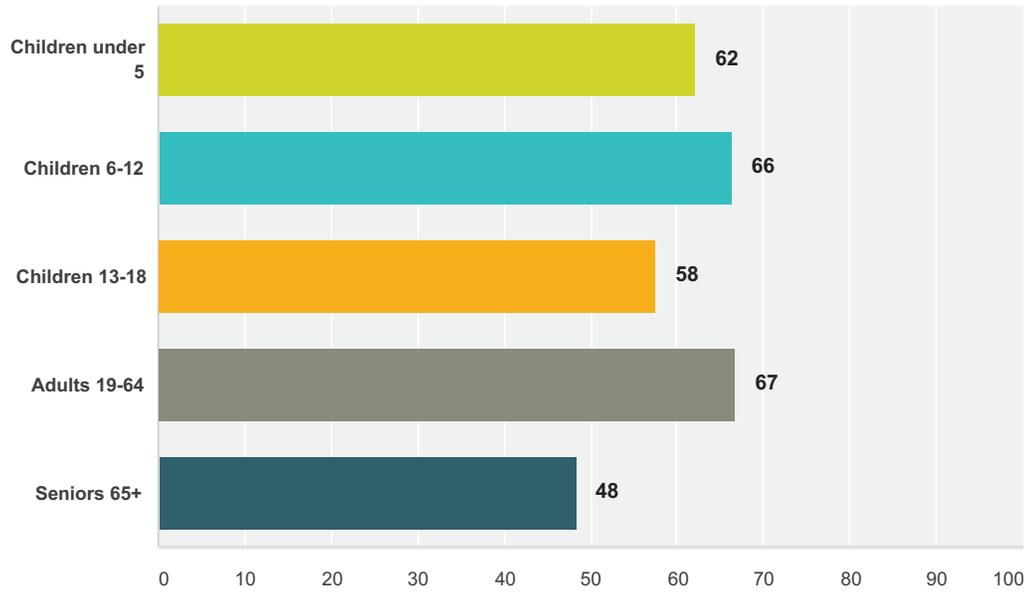


| | Frequently | Occasionally | Rarely | Never | Total | Weighted Average |
|--|---------------|--------------|--------------|--------------|-------|------------------|
| Walking and jogging | 63.69% 107 | 26.79% 45 | 4.17% 7 | 5.36% 9 | 168 | 83.05 |
| Festivals and special events (e.g., concerts, theater) | 38.65% 63 | 43.56% 71 | 13.50% 22 | 4.29% 7 | 163 | 72.42 |
| Swimming | 46.41% 71 | 28.10% 43 | 10.46% 16 | 15.03% 23 | 153 | 68.79 |
| Hiking | 43.62% 65 | 27.52% 41 | 11.41% 17 | 17.45% 26 | 149 | 65.94 |
| Fitness Trails | 36.73% 54 | 27.89% 41 | 14.97% 22 | 20.41% 30 | 147 | 60.51 |
| Recreational Biking | 34.69% 51 | 29.25% 43 | 11.56% 17 | 24.49% 36 | 147 | 58.22 |
| Tot Lots/Playgrounds | 41.10% 60 | 19.18% 28 | 11.64% 17 | 28.08% 41 | 146 | 57.90 |
| Picnicking | 22.76% 33 | 40.69% 59 | 20.69% 30 | 15.86% 23 | 145 | 57.06 |

| | | | | | | |
|---|---------------------|---------------------|---------------------|----------------------|-----|-------|
| Dog Walking | 43.62% 65 | 16.11% 24 | 6.71% 10 | 33.56% 50 | 149 | 56.70 |
| Youth sports leagues (e.g., baseball, lacrosse, soccer, softball) | 35.14% 52 | 11.49% 17 | 12.16% 18 | 41.22% 61 | 148 | 46.97 |
| Environmental education (e.g., nature studying, bird watching) | 18.06% 26 | 23.61% 34 | 22.22% 32 | 36.11% 52 | 144 | 41.43 |
| Fishing | 17.14% 24 | 25.00% 35 | 18.57% 26 | 39.29% 55 | 140 | 40.21 |
| Historical interpretation (e.g., farmsteads, mills) | 9.35% 13 | 24.46% 34 | 25.90% 36 | 40.29% 56 | 139 | 34.55 |
| Canoeing/Kayaking | 10.79% 15 | 27.34% 38 | 15.83% 22 | 46.04% 64 | 139 | 34.49 |
| Camping | 11.85% 16 | 17.78% 24 | 15.56% 21 | 54.81% 74 | 135 | 29.05 |
| Mountain Biking | 14.29% 19 | 15.04% 20 | 11.28% 15 | 59.40% 79 | 133 | 28.20 |
| Lawn Sports (e.g., bocce, horse shoes) | 4.41% 6 | 22.06% 30 | 19.85% 27 | 53.68% 73 | 136 | 25.94 |
| Tennis | 5.30% 7 | 17.42% 23 | 23.48% 31 | 53.79% 71 | 132 | 24.96 |
| Basketball | 9.02% 12 | 14.29% 19 | 13.53% 18 | 63.16% 84 | 133 | 23.20 |
| Golf | 6.02% 8 | 19.55% 26 | 11.28% 15 | 63.16% 84 | 133 | 22.95 |
| Road Cycling | 9.63% 13 | 14.07% 19 | 10.37% 14 | 65.93% 89 | 135 | 22.59 |
| Adult sports leagues (e.g., baseball, lacrosse, soccer, softball) | 6.57% 9 | 11.68% 16 | 13.14% 18 | 68.61% 94 | 137 | 18.86 |
| Volleyball | 1.53% 2 | 13.74% 18 | 22.90% 30 | 61.83% 81 | 131 | 18.52 |
| Hunting | 6.40% 8 | 10.40% 13 | 7.20% 9 | 76.00% 95 | 125 | 15.82 |
| Hockey | 3.01% 4 | 9.02% 12 | 12.03% 16 | 75.94% 101 | 133 | 13.14 |
| Archery | 2.36% 3 | 9.45% 12 | 9.45% 12 | 78.74% 100 | 127 | 11.91 |
| Horseback Riding | 3.08% 4 | 7.69% 10 | 8.46% 11 | 80.77% 105 | 130 | 11.11 |
| Roller Hockey | 1.52% 2 | 7.58% 10 | 7.58% 10 | 83.33% 110 | 132 | 9.17 |
| Cross country skiing | 2.31% 3 | 5.38% 7 | 8.46% 11 | 83.85% 109 | 130 | 8.79 |

Q14 In general, how well do you think the age groups listed below are served by parks, recreation, and open space in or near Perkasié Borough?

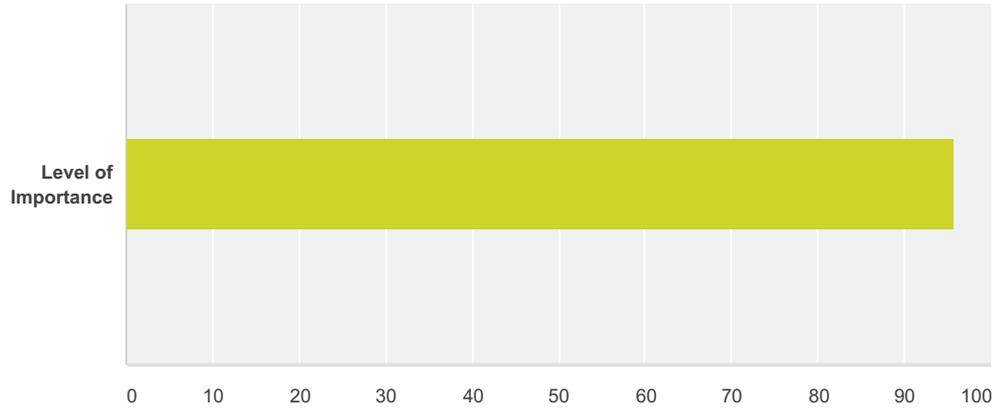
Answered: 172 Skipped: 32



| | Very Well | Well | Somewhat Well/Poorly | Poorly | Very Poorly | Do Not Know | Total | Weighted Average |
|------------------|--------------|--------------|----------------------|-------------|-------------|--------------|-------|------------------|
| Children under 5 | 15.09% 24 | 47.17% 75 | 21.38% 34 | 4.40% 7 | 0.63% 1 | 11.32% 18 | 159 | 62.26 |
| Children 6-12 | 20.25% 32 | 48.73% 77 | 17.72% 28 | 2.53% 4 | 1.27% 2 | 9.49% 15 | 158 | 66.30 |
| Children 13-18 | 16.88% 26 | 40.91% 63 | 16.88% 26 | 6.49% 10 | 2.60% 4 | 16.23% 25 | 154 | 57.63 |
| Adults 19-64 | 15.48% 26 | 52.38% 88 | 23.81% 40 | 0.60% 1 | 3.57% 6 | 4.17% 7 | 168 | 66.82 |
| Seniors 65+ | 14.29% 20 | 30.00% 42 | 22.14% 31 | 2.14% 3 | 1.43% 2 | 30.00% 42 | 140 | 48.39 |

Q15 In general, how important do you feel public parks, natural areas and open space areas are to the well-being and quality of life in Perkasio Borough?

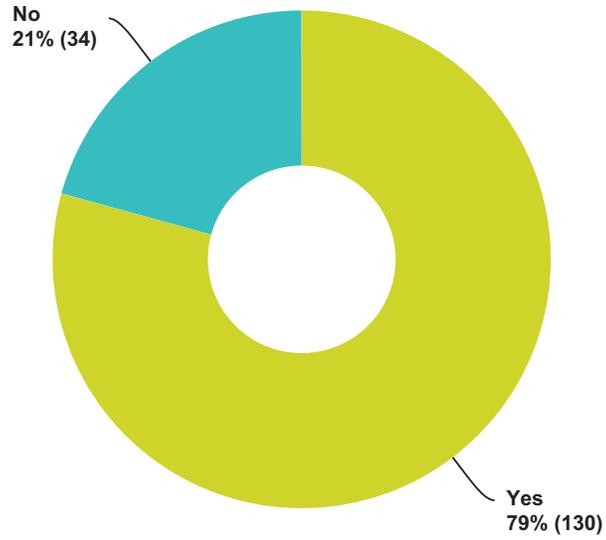
Answered: 164 Skipped: 40



| | Very Important | Important | Somewhat Important/Unimportant | Unimportant | Very Unimportant | Do Not Know | Total | Weighted Average |
|---------------------|----------------|--------------|--------------------------------|-------------|------------------|-------------|-------|------------------|
| Level of Importance | 84.15% 138 | 14.63% 24 | 1.22% 2 | 0.00% 0 | 0.00% 0 | 0.00% 0 | 164 | 95.73 |

Q16 Generally, are your recreational needs being met in or around Perkasio Borough?

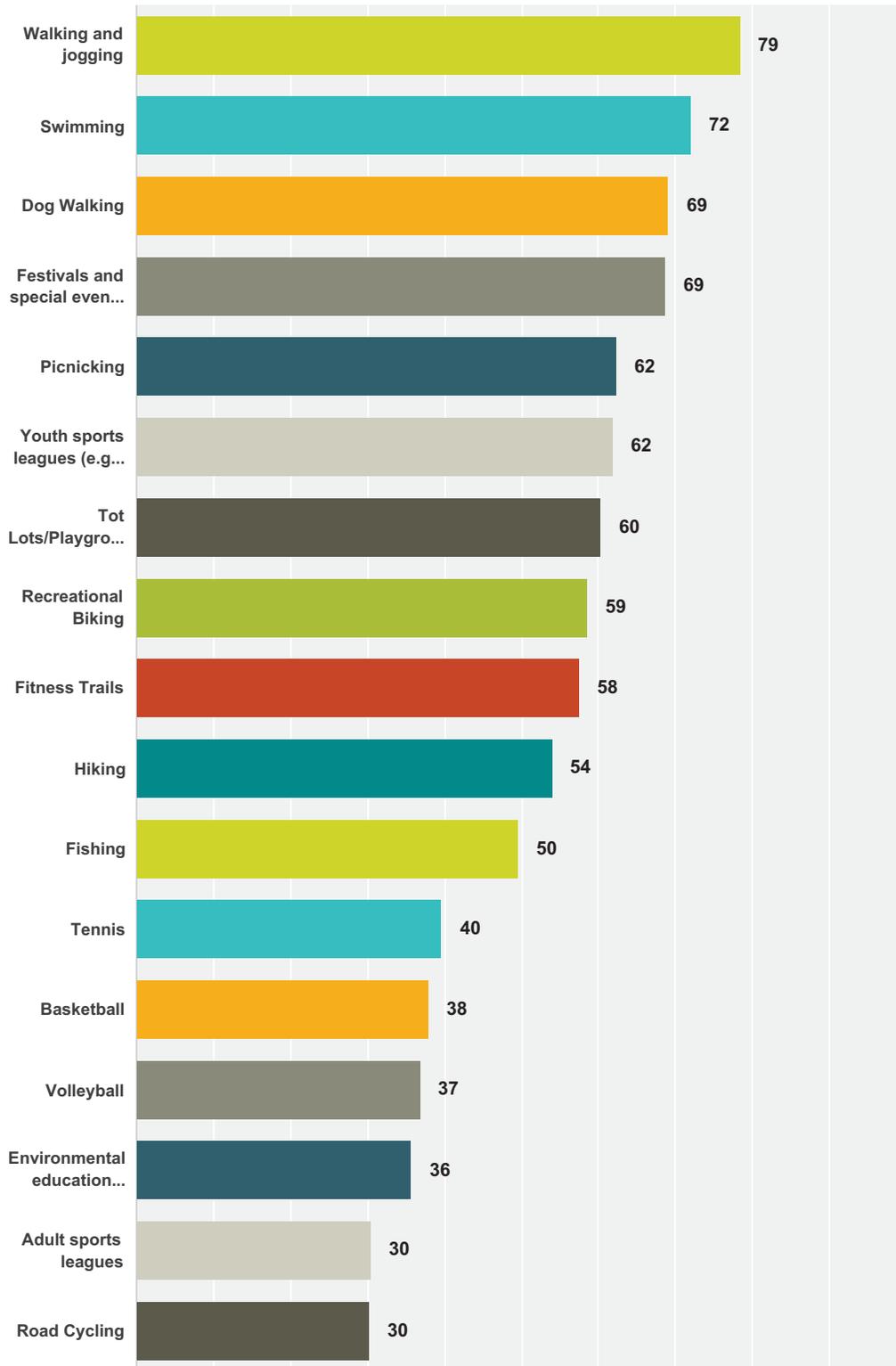
Answered: 164 Skipped: 40

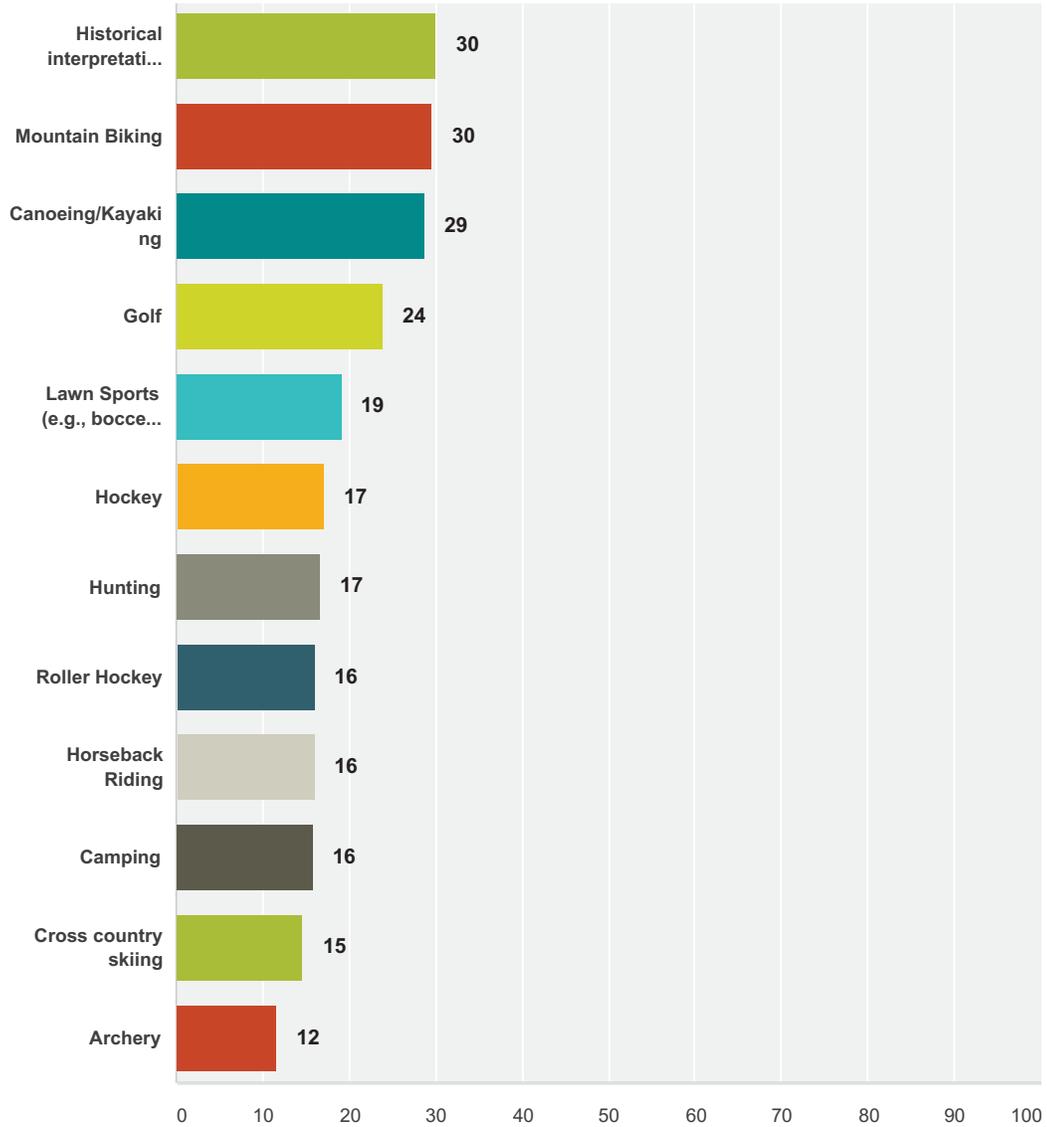


| | Yes | No | Total | Weighted Average |
|------------|------------|-----------|-------|------------------|
| (no label) | 79% 130 | 21% 34 | 164 | 1.79 |

Q17 The following is a list of outdoor activities often found in parks, natural areas, open space areas or recreation facilities. How well is each activity provided for in or around Perkasio Borough?

Answered: 156 Skipped: 48



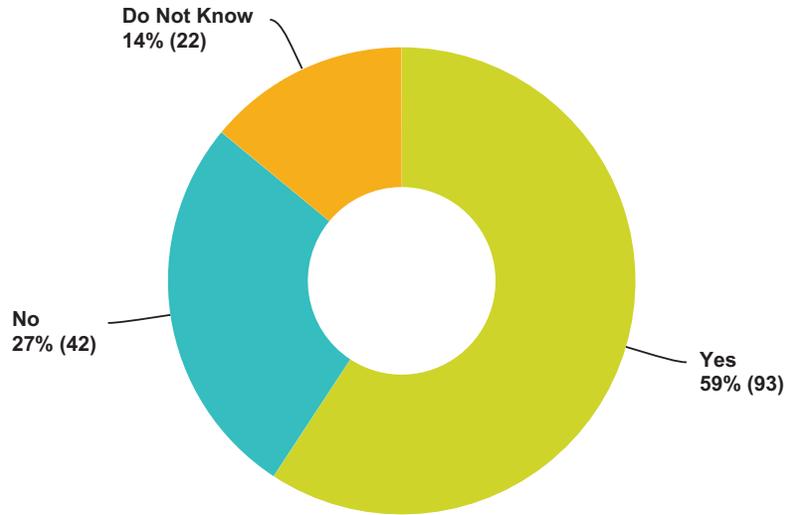


| | Very Well | Well | Somewhat Well/Poorly | Poorly | Very Poorly | Do Not Know | Total | Weighted Average |
|---|--------------|--------------|----------------------|-------------|-------------|--------------|-------|------------------|
| Walking and jogging | 36.05% 53 | 48.30% 71 | 12.24% 18 | 0.68% 1 | 0.00% 0 | 2.72% 4 | 147 | 78.57 |
| Swimming | 36.73% 54 | 36.73% 54 | 14.97% 22 | 1.36% 2 | 2.72% 4 | 7.48% 11 | 147 | 72.11 |
| Dog Walking | 34.00% 51 | 40.00% 60 | 10.00% 15 | 0.67% 1 | 1.33% 2 | 14.00% 21 | 150 | 69.17 |
| Festivals and special events (e.g., concerts, theater) | 27.03% 40 | 41.22% 61 | 19.59% 29 | 4.05% 6 | 0.00% 0 | 8.11% 12 | 148 | 68.75 |
| Picnicking | 25.00% 36 | 36.81% 53 | 15.97% 23 | 6.94% 10 | 1.39% 2 | 13.89% 20 | 144 | 62.33 |
| Youth sports leagues (e.g., baseball, lacrosse, soccer, softball) | 22.45% 33 | 46.26% 68 | 8.16% 12 | 3.40% 5 | 0.68% 1 | 19.05% 28 | 147 | 62.07 |
| Tot Lots/Playgrounds | 16.78% 25 | 42.28% 63 | 21.48% 32 | 4.70% 7 | 2.68% 4 | 12.08% 18 | 149 | 60.40 |

| | | | | | | | | |
|--|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-----|-------|
| Recreational Biking | 21.53% 31 | 38.89% 56 | 14.58% 21 | 2.78% 4 | 2.08% 3 | 20.14% 29 | 144 | 58.68 |
| Fitness Trails | 18.62% 27 | 35.86% 52 | 21.38% 31 | 5.52% 8 | 2.07% 3 | 16.55% 24 | 145 | 57.59 |
| Hiking | 14.48% 21 | 33.79% 49 | 24.83% 36 | 6.90% 10 | 2.76% 4 | 17.24% 25 | 145 | 53.97 |
| Fishing | 15.17% 22 | 31.03% 45 | 19.31% 28 | 6.21% 9 | 0.69% 1 | 27.59% 40 | 145 | 49.66 |
| Tennis | 8.28% 12 | 28.97% 42 | 16.55% 24 | 5.52% 8 | 2.76% 4 | 37.93% 55 | 145 | 39.66 |
| Basketball | 5.52% 8 | 30.34% 44 | 17.24% 25 | 4.83% 7 | 0.00% 0 | 42.07% 61 | 145 | 38.10 |
| Volleyball | 7.69% 11 | 20.28% 29 | 25.17% 36 | 5.59% 8 | 0.70% 1 | 40.56% 58 | 143 | 36.89 |
| Environmental education (e.g., nature studying, bird watching) | 5.56% 8 | 20.83% 30 | 24.31% 35 | 9.72% 14 | 2.78% 4 | 36.81% 53 | 144 | 35.76 |
| Adult sports leagues | 4.76% 7 | 16.33% 24 | 22.45% 33 | 8.84% 13 | 0.68% 1 | 46.94% 69 | 147 | 30.44 |
| Road Cycling | 7.86% 11 | 15.00% 21 | 17.86% 25 | 8.57% 12 | 7.86% 11 | 42.86% 60 | 140 | 30.18 |
| Historical interpretation (e.g., farmsteads, mills) | 4.26% 6 | 14.18% 20 | 23.40% 33 | 13.48% 19 | 1.42% 2 | 43.26% 61 | 141 | 29.96 |
| Mountain Biking | 7.75% 11 | 15.49% 22 | 16.20% 23 | 8.45% 12 | 5.63% 8 | 46.48% 66 | 142 | 29.58 |
| Canoeing/Kayaking | 5.56% 8 | 14.58% 21 | 17.36% 25 | 14.58% 21 | 7.64% 11 | 40.28% 58 | 144 | 28.82 |
| Golf | 2.13% 3 | 11.35% 16 | 21.28% 30 | 10.64% 15 | 4.96% 7 | 49.65% 70 | 141 | 23.94 |
| Lawn Sports (e.g., bocce, horse shoes) | 0.00% 0 | 7.14% 10 | 20.71% 29 | 14.29% 20 | 4.29% 6 | 53.57% 75 | 140 | 19.29 |
| Hockey | 1.42% 2 | 4.96% 7 | 17.73% 25 | 12.06% 17 | 7.09% 10 | 56.74% 80 | 141 | 17.02 |
| Hunting | 0.72% 1 | 10.79% 15 | 9.35% 13 | 12.95% 18 | 7.19% 10 | 58.99% 82 | 139 | 16.73 |
| Roller Hockey | 0.00% 0 | 7.09% 10 | 14.89% 21 | 13.48% 19 | 4.96% 7 | 59.57% 84 | 141 | 16.13 |
| Horseback Riding | 3.57% 5 | 4.29% 6 | 11.43% 16 | 14.29% 20 | 8.57% 12 | 57.86% 81 | 140 | 16.07 |
| Camping | 0.71% 1 | 5.67% 8 | 14.18% 20 | 15.60% 22 | 12.77% 18 | 51.06% 72 | 141 | 15.96 |
| Cross country skiing | 0.72% 1 | 5.80% 8 | 13.77% 19 | 10.87% 15 | 4.35% 6 | 64.49% 89 | 138 | 14.67 |
| Archery | 0.72% 1 | 1.45% 2 | 10.14% 14 | 18.84% 26 | 7.25% 10 | 61.59% 85 | 138 | 11.59 |

Q18 Do you think that more public parks, natural areas, and open space areas are needed in Perkasio Borough?

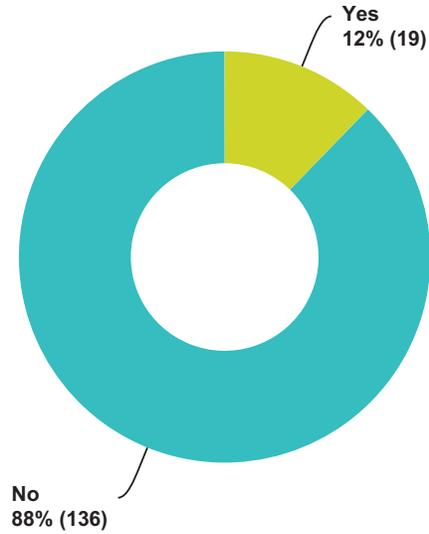
Answered: 157 Skipped: 47



| | Yes | No | Do Not Know | Total | Weighted Average |
|------------|-----------|-----------|-------------|-------|------------------|
| (no label) | 59% 93 | 27% 42 | 14% 22 | 157 | 1.45 |

Q19 Are there any parks, natural areas, or open space in or around the Borough that you wish you had easier access too?

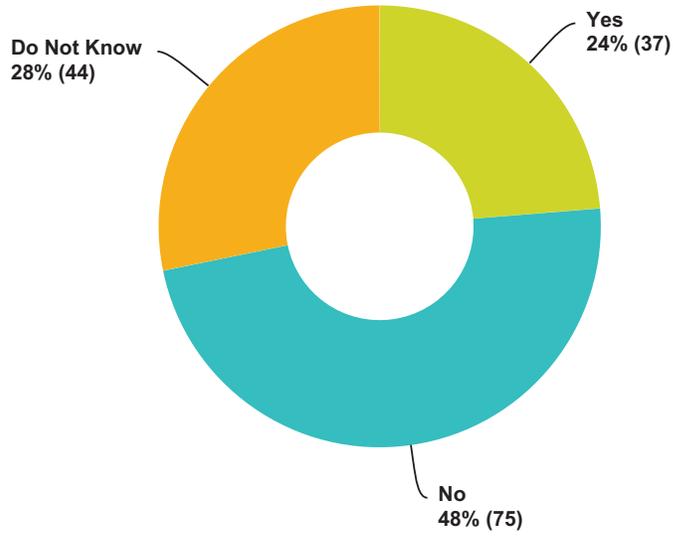
Answered: 155 Skipped: 49



| | Yes | No | Total | Weighted Average |
|------------|-----------|------------|-------|------------------|
| (no label) | 12% 19 | 88% 136 | 155 | 1.12 |

Q20 Do you think that Perkasio Borough needs more sports fields (soccer, baseball, football, etc.)?

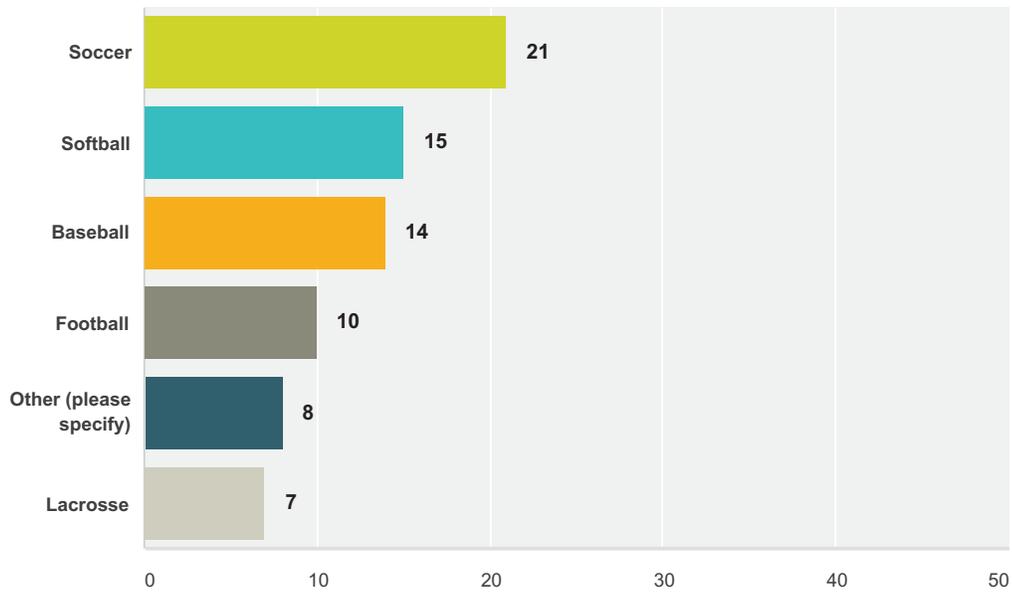
Answered: 156 Skipped: 48



| | Yes | No | Do Not Know | Total | Weighted Average |
|------------|-----------|-----------|-------------|-------|------------------|
| (no label) | 24% 37 | 48% 75 | 28% 44 | 156 | 0.96 |

Q21 If you answered yes on the previous question, which sports do you feel are in need of fields (check all that apply)?

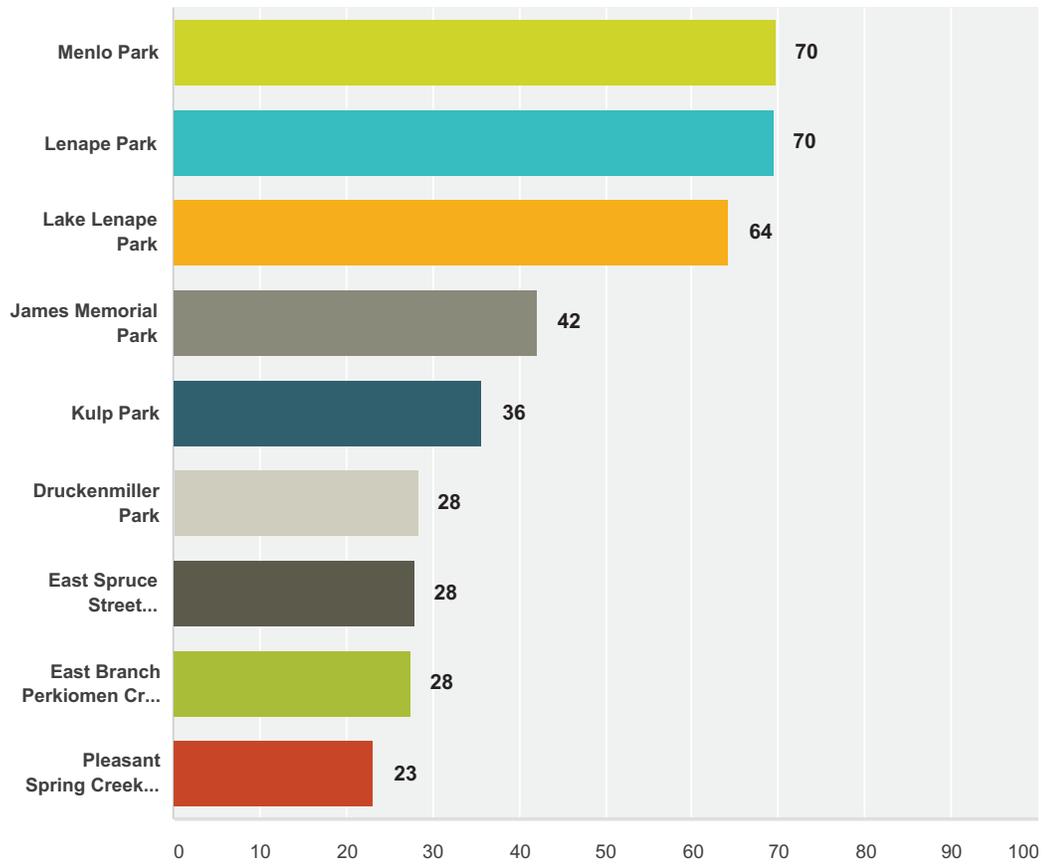
Answered: 41 Skipped: 163



| Answer Choices | Responses |
|------------------------------|-----------|
| Soccer | 51% 21 |
| Softball | 37% 15 |
| Baseball | 34% 14 |
| Football | 24% 10 |
| Other (please specify) | 20% 8 |
| Lacrosse | 17% 7 |
| Total Respondents: 41 | |

Q22 How would you rate the maintenance at the following recreational facilities in and around Perkasio Borough?

Answered: 154 Skipped: 50

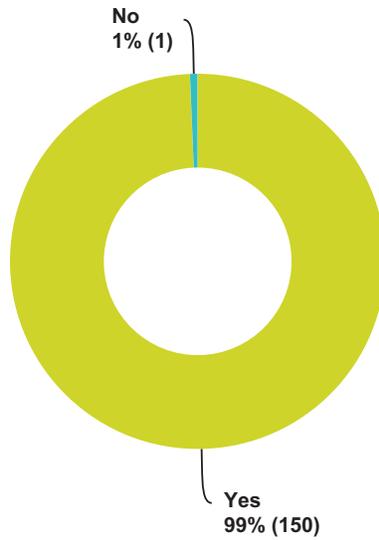


| | Very Well | Well | Somewhat Well/Poorly | Poor | Very Poor | Do Not Know | Total | Weighted Average |
|--------------------------------------|--------------|--------------|----------------------|-------------|------------|--------------|-------|------------------|
| Menlo Park | 24.68% 38 | 46.10% 71 | 17.53% 27 | 6.49% 10 | 1.30% 2 | 3.90% 6 | 154 | 69.64 |
| Lenape Park | 23.84% 36 | 48.34% 73 | 16.56% 25 | 4.64% 7 | 1.32% 2 | 5.30% 8 | 151 | 69.54 |
| Lake Lenape Park | 21.77% 32 | 48.98% 72 | 10.20% 15 | 2.72% 4 | 2.04% 3 | 14.29% 21 | 147 | 64.29 |
| James Memorial Park | 15.27% 20 | 29.77% 39 | 8.40% 11 | 1.53% 2 | 0.00% 0 | 45.04% 59 | 131 | 42.18 |
| Kulp Park | 7.86% 11 | 25.71% 36 | 12.86% 18 | 8.57% 12 | 2.86% 4 | 42.14% 59 | 140 | 35.71 |
| Druckenmiller Park | 4.32% 6 | 20.86% 29 | 12.95% 18 | 7.91% 11 | 2.88% 4 | 51.08% 71 | 139 | 28.42 |
| East Spruce Street Playground | 8.70% 12 | 19.57% 27 | 8.70% 12 | 0.72% 1 | 2.17% 3 | 60.14% 83 | 138 | 27.90 |
| East Branch Perkiomen Creek Greenway | 8.70% 12 | 18.84% 26 | 8.70% 12 | 1.45% 2 | 0.72% 1 | 61.59% 85 | 138 | 27.54 |

| | | | | | | | | |
|--------------------------------|-------------------|---------------------|--------------------|-------------------|-------------------|---------------------|-----|-------|
| Pleasant Spring Creek Greenway | 5.84% 8 | 18.25% 25 | 7.30% 10 | 0.00% 0 | 0.73% 1 | 67.88% 93 | 137 | 23.18 |
|--------------------------------|-------------------|---------------------|--------------------|-------------------|-------------------|---------------------|-----|-------|

Q23 Are you familiar with Menlo and Lenape Parks in Perkasio Borough?

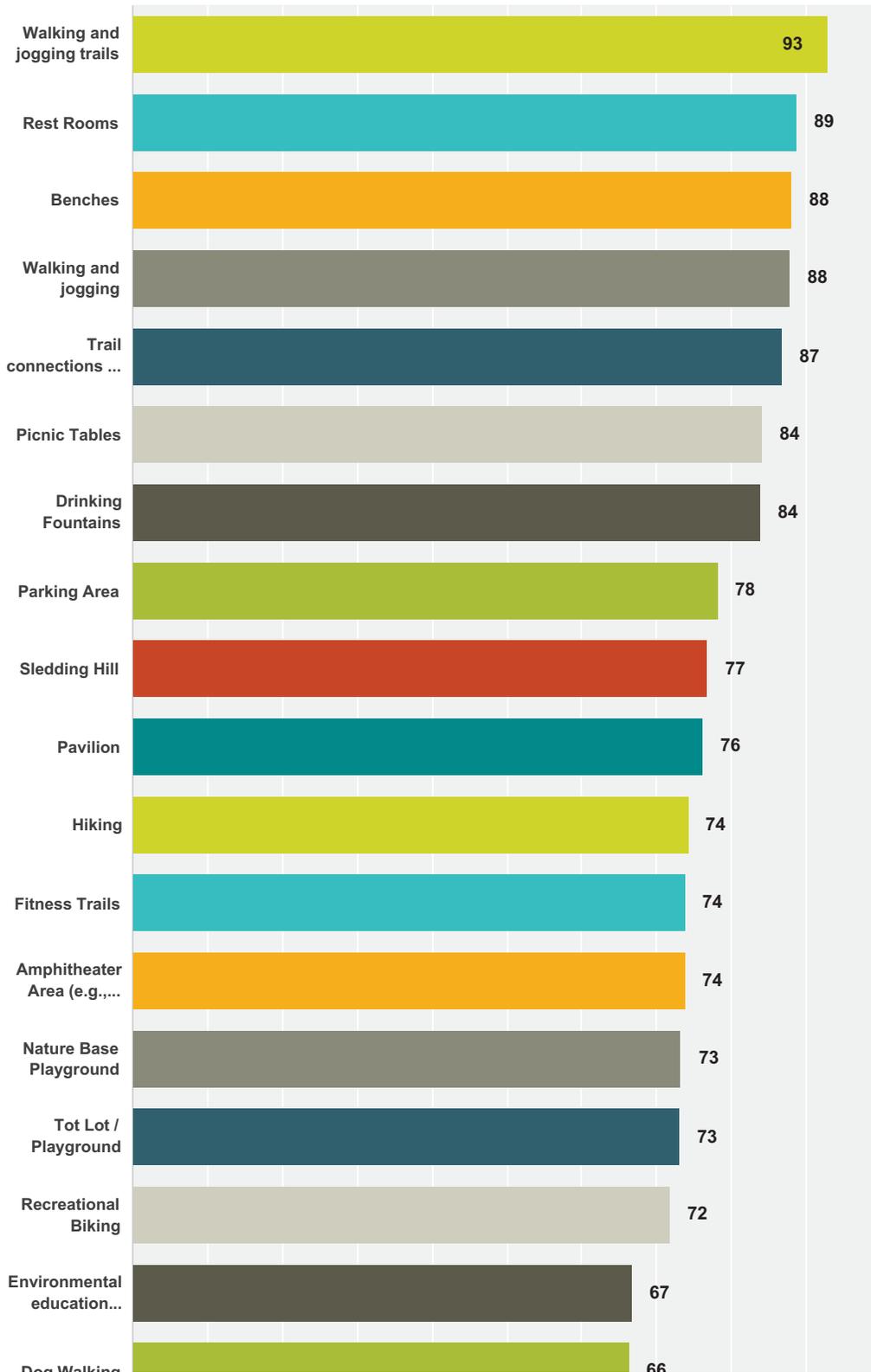
Answered: 151 Skipped: 53

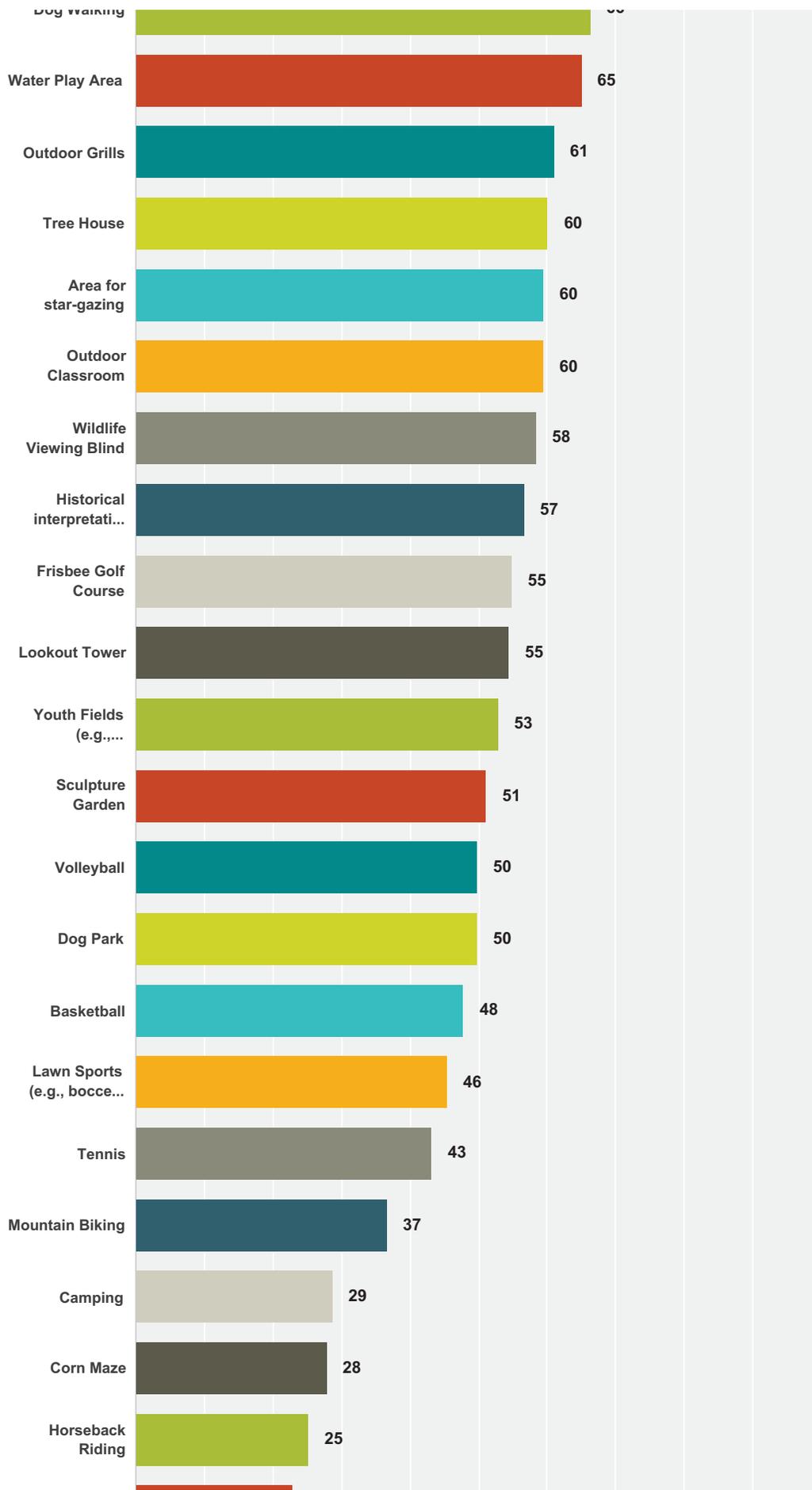


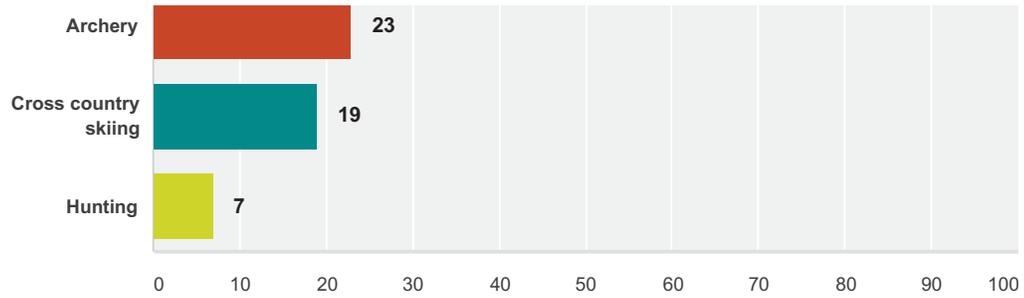
| | Yes | No | Total | Weighted Average |
|------------|------------|---------|-------|------------------|
| (no label) | 99% 150 | 1% 1 | 151 | 1.99 |

Q24 Specifically regarding the master plan for Menlo and Lenape Parks, which facilities and activities do you think should be considered?

Answered: 152 Skipped: 52





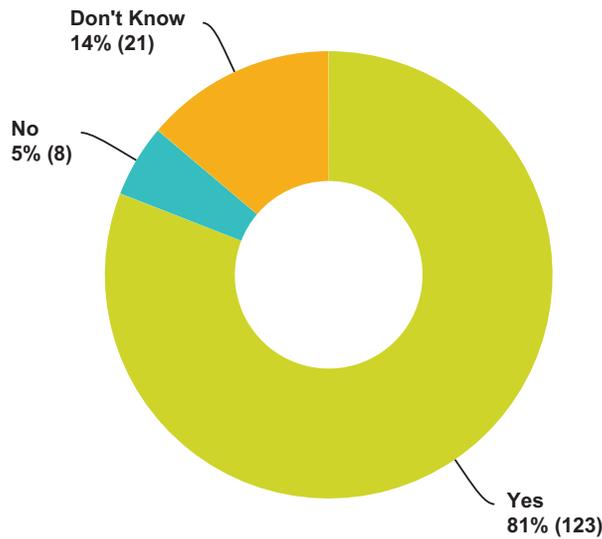


| | Yes | No | Do Not Know | Total | Weighted Average |
|--|---------------|--------------|--------------|-------|------------------|
| Walking and jogging trails | 92.91% 131 | 4.26% 6 | 2.84% 4 | 141 | 92.91 |
| Rest Rooms | 88.65% 125 | 7.09% 10 | 4.26% 6 | 141 | 88.65 |
| Benches | 88.11% 126 | 6.99% 10 | 4.90% 7 | 143 | 88.11 |
| Walking and jogging | 87.86% 123 | 6.43% 9 | 5.71% 8 | 140 | 87.86 |
| Trail connections to regional parks and open space | 86.86% 119 | 5.11% 7 | 8.03% 11 | 137 | 86.86 |
| Picnic Tables | 84.17% 117 | 12.23% 17 | 3.60% 5 | 139 | 84.17 |
| Drinking Fountains | 83.92% 120 | 12.59% 18 | 3.50% 5 | 143 | 83.92 |
| Parking Area | 78.20% 104 | 15.79% 21 | 6.02% 8 | 133 | 78.20 |
| Sledding Hill | 76.92% 110 | 15.38% 22 | 7.69% 11 | 143 | 76.92 |
| Pavilion | 76.12% 102 | 17.16% 23 | 6.72% 9 | 134 | 76.12 |
| Hiking | 74.26% 101 | 14.71% 20 | 11.03% 15 | 136 | 74.26 |
| Fitness Trails | 73.94% 105 | 14.08% 20 | 11.97% 17 | 142 | 73.94 |
| Amphitheater Area (e.g., concerts, theater, special events) | 73.94% 105 | 16.90% 24 | 9.15% 13 | 142 | 73.94 |
| Nature Base Playground | 73.33% 99 | 11.11% 15 | 15.56% 21 | 135 | 73.33 |
| Tot Lot / Playground | 72.99% 100 | 16.06% 22 | 10.95% 15 | 137 | 72.99 |
| Recreational Biking | 71.85% 97 | 13.33% 18 | 14.81% 20 | 135 | 71.85 |
| Environmental education (e.g., nature studying, bird watching) | 66.91% 91 | 22.79% 31 | 10.29% 14 | 136 | 66.91 |
| Dog Walking | 66.42% 91 | 22.63% 31 | 10.95% 15 | 137 | 66.42 |
| Water Play Area | 65.22% 90 | 25.36% 35 | 9.42% 13 | 138 | 65.22 |

| | | | | | |
|---|---------------------|---------------------|---------------------|-----|-------|
| Outdoor Grills | 61.07% 80 | 25.19% 33 | 13.74% 18 | 131 | 61.07 |
| Tree House | 60.15% 80 | 30.08% 40 | 9.77% 13 | 133 | 60.15 |
| Area for star-gazing | 59.56% 81 | 25.74% 35 | 14.71% 20 | 136 | 59.56 |
| Outdoor Classroom | 59.56% 81 | 26.47% 36 | 13.97% 19 | 136 | 59.56 |
| Wildlife Viewing Blind | 58.39% 80 | 27.74% 38 | 13.87% 19 | 137 | 58.39 |
| Historical interpretation (e.g., farmsteads, mills) | 56.72% 76 | 26.87% 36 | 16.42% 22 | 134 | 56.72 |
| Frisbee Golf Course | 54.89% 73 | 26.32% 35 | 18.80% 25 | 133 | 54.89 |
| Lookout Tower | 54.55% 72 | 30.30% 40 | 15.15% 20 | 132 | 54.55 |
| Youth Fields (e.g., baseball, lacrosse, soccer, softball) | 53.13% 68 | 30.47% 39 | 16.41% 21 | 128 | 53.13 |
| Sculpture Garden | 51.13% 68 | 35.34% 47 | 13.53% 18 | 133 | 51.13 |
| Volleyball | 50.00% 64 | 30.47% 39 | 19.53% 25 | 128 | 50.00 |
| Dog Park | 50.00% 66 | 36.36% 48 | 13.64% 18 | 132 | 50.00 |
| Basketball | 47.73% 63 | 31.06% 41 | 21.21% 28 | 132 | 47.73 |
| Lawn Sports (e.g., bocce, horse shoes) | 45.59% 62 | 33.82% 46 | 20.59% 28 | 136 | 45.59 |
| Tennis | 43.18% 57 | 36.36% 48 | 20.45% 27 | 132 | 43.18 |
| Mountain Biking | 36.72% 47 | 36.72% 47 | 26.56% 34 | 128 | 36.72 |
| Camping | 28.80% 36 | 52.80% 66 | 18.40% 23 | 125 | 28.80 |
| Corn Maze | 27.91% 36 | 53.49% 69 | 18.60% 24 | 129 | 27.91 |
| Horseback Riding | 25.20% 32 | 51.97% 66 | 22.83% 29 | 127 | 25.20 |
| Archery | 22.90% 30 | 51.15% 67 | 25.95% 34 | 131 | 22.90 |
| Cross country skiing | 19.05% 24 | 47.62% 60 | 33.33% 42 | 126 | 19.05 |
| Hunting | 7.09% 9 | 75.59% 96 | 17.32% 22 | 127 | 7.09 |

Q25 As part of the park planning process, there is consideration to add an event space or venue that could host musical acts, shows, school performances, movie screenings and other events for the community. This space would be similar to the Maurice W. Foulke Bandshell in Souderton. Would you attend events at this new performance space?

Answered: 152 Skipped: 52



| | Yes | No | Don't Know | Total | Weighted Average |
|------------|------------|---------|------------|-------|------------------|
| (no label) | 81% 123 | 5% 8 | 14% 21 | 152 | 1.67 |

Q26 Please share any additional thoughts, comments, or ideas you would like to share for Menlo and Lenape Parks.

Answered: 42 Skipped: 162

Memorandum

Memo To: Simone/Collins, Landscape Architects **Date:** May 3, 2016

From: Shaun McAdams
Project Environmental Scientist **File:** 1850.001.001

Re: Wetland Delineation Memorandum
Menlo & Lenape Parks Master Plan
Perkasie, Bucks County, Pennsylvania

Introduction

Barton & Loguidice, D.P.C. (B&L), has been retained by the Simone/Collins on behalf of the Borough of Perkasie, Bucks County, Pennsylvania, to provide a delineation of wetland resources within the boundaries of Menlo and Lenape Parks within the Borough of Perkasie. The portion of the larger park complex that includes the adjoining parcel of Lake Lenape Park in the Borough of Sellersville was not included within the Survey Area.

The objectives of this delineation and corresponding wetland delineation report are to:

- identify the locations and extents of jurisdictional water resources within the Parks, in order to assure that proposed improvements included in the Master Plan do not impact wetland resources;
- prepare a wetland delineation report to support future permitting efforts associated with implementation of any aspects of the Master Plan (or other developments) that may impact jurisdictional water resources; and,
- develop recommendations within the Master Plan that showcase the existing wetland resources as opportunities for public outreach and education, improved aesthetics, and habitat / cover type diversity within the Parks.

Figure 1 depicts the project location within the Borough of Perkasie.

The project area can also be found on the U.S. Geological Survey's (USGS) 7.5-minute Telford (PA) Quadrangle and at the following coordinates (NAD 83 datum): 40° 21' 50" N and 75 ° 18' 08" W. Topographic mapping (Figure 2) depicts relatively flat relief through the majority of the project area along the East Branch Perkiomen Creek and adjacent floodplains. The Parks are bordered to the north by a low, relatively-steep escarpment adjacent to the right bank (facing downstream) of the Creek. The surrounding areas are primarily flat and highly developed, with residential development dominating to the north and a mixed residential/commercial community to the south. The elevation ranges from a low of 300 feet above mean sea level (amsl) to 380 feet amsl.



A wetland field delineation of the depicted Survey Area was completed by a B&L Environmental Scientist on February 11 and April 11, 2016, in support of the Menlo & Lenape Parks Master Plan Project. Lands within the Survey Area were reviewed for the presence of jurisdictional wetlands, Waters of the Commonwealth and other Waters of the U.S.

Survey Area Information

Surface Waters

The Survey Area is comprised entirely within the boundaries of Menlo and Lenape Parks within the Borough of Perkasio. The portion of the larger park complex that includes the adjoining parcel of Lake Lenape Park in the Borough of Sellersville is not included within the Survey Area.

This Survey Area is located entirely within the Schuylkill River Watershed (HUC 02040203) and within the East Branch Perkiomen Creek Primary Watershed. The primary watercourse traversing the Survey Area is the East Branch Perkiomen Creek. Designated uses for the East Branch Perkiomen Creek, as established under Chapter 93 of the Pennsylvania Code, are Trout-Stocked Fishery, Migratory Fishes (TSF-MF). This designation encompasses the entire East Branch Perkiomen Creek basin (including the entire Survey Area). Two tributaries join the main stem of East Branch Perkiomen Creek within Lenape Park, including an unnamed tributary in the vicinity of Main Street as well as Pleasant Spring Creek, which meets the East Branch Perkiomen Creek from the south at the Constitution Street Bridge (located at the eastern boundary of the Park). Mapped surface water resources are included in Figure 3.

Soils

The Natural Resource Conservation Service's (NRCS) Web Soil Survey of Bucks County, Pennsylvania was reviewed to determine mapped soil units within the Survey Area. Soil types mapped within and near the Survey Area are detailed in Table 1, below, and are provided in Figure 4.

| Soil Name | Map Unit | Hydric Status (NRCS, 2016) | Drainage Classification |
|--|----------|----------------------------|-------------------------|
| Bowmansville-Knauers silt loams | Bo | Hydric | Poorly drained |
| Croton silt loam, occasionally ponded, 0 to 3 percent slopes | CwA | Hydric | Poorly drained |

| Table 1. Mapped Soil Types | | | |
|--|----------|----------------------------|-------------------------|
| Soil Name | Map Unit | Hydric Status (NRCS, 2016) | Drainage Classification |
| Penn-Klinesville channery silt loams, 8 to 15 percent slopes | PkC | Hydric | Well-drained |
| Readington silt loams, 3 to 8 percent slopes | ReB | Hydric | Moderately well-drained |
| Rowland silt loam | Ro | Hydric | Moderately well-drained |
| Urban land-Abbottstown complex, 0 to 8 percent slopes | UgB | Hydric | Somewhat poorly-drained |
| Water | W | Hydric | N/A |

Wetland Mapping

Desktop reviews of available freshwater wetland mapping resources were completed. A large National Wetland Inventory (NWI) wetland complex is present within the Survey Area, namely within the western portion of Lenape Park adjacent to the south (left) bank of East Branch Perkiomen Creek. This complex is comprised of three (3) distinct NWI wetland/deep water types:

- Palustrine Forested – Broad-leaved deciduous, Temporarily Flooded (PFO1A)
- Palustrine Emergent – *Phragmites australis*, Seasonally Flooded (PEM5C)
- Palustrine Emergent – *Phragmites australis*, Unconsolidated Bottom / Semi-permanently Flooded (PEM5/UBF)

The portion of East Branch Perkiomen Creek is listed in NWI as Lacustrine/Limnetic – Unconsolidated Bottom / Permanently Flooded, Diked / Impounded (L1UBHh).

Mapped wetland resources are shown in Figure 3.

Wetland Field Delineation

Methodology

The wetland field delineation of the Survey Area was performed in accordance with the methodologies set forth in the U.S. Army Corps of Engineers’ (USACE) *Routine Wetlands*

Determination Method with Onsite Inspection (Environmental Laboratory, 1987) and the USACE's *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region, Version 2.0* (USACE, 2012). These methodologies were used to identify wetlands located within the Survey Area that are subject to federal jurisdiction by the USACE and state jurisdiction by the Pennsylvania Department of Environmental Protection (PA DEP). A B&L Environmental Scientist performed a delineation of the wetland boundaries during fieldwork conducted on February 11 and April 11, 2016. Visual observations of vegetative communities, soils, and hydrology were used to determine the wetland boundaries in the field.

Site Ecology

The Survey Area is located within the U.S. Department of Agriculture – Natural Resource Conservation Service (USDA-NRCS) Land Resource Region (LRR) S – Northern Atlantic Slope Diversified Farming Region (USACE, 2012). Land Resource Regions are geographically associated groups of major land resource areas and consist mainly of areas that have very broadly related patterns of soil, climate, water resources, and land use. This information is used to determine which hydric soil indicators are appropriate for use in describing hydric soils within a given project area.

Within LLR_S, the Survey Area occupies a portion of Major Land Resource Area (MLRA) 148 – Northern Piedmont (USACE, 2012). Characteristics of MLRA 148 are provided in Table 2, below.

| Table 2. Characteristics of MLRA 148 – Northern Piedmont | |
|--|---|
| Physiography | Gently sloping or sloping, ridges and valleys |
| Elevation | Maximum local elevations are generally between 80 and 985 feet, but some ridgetops exceed 1,650 feet. |
| Vegetation | Deciduous hardwoods are the most extensive forest types |
| Precipitation | 37 to 52 inches |
| Climate | Temperate and humid |
| Land Use | Roughly 1/3 farms, 1/3 urbanized or developed, 1/3 forested |
| Geology | Lower Paleozoic / Precambrian sediments; igneous and metamorphic rock |

The Survey Area is situated within the Triassic Lowlands Eco-region (Level IV) of Pennsylvania (USEPA, 2010).

Delineation Results

One jurisdictional wetland resource and three stream resources were identified during the field delineation effort. These delineated feature boundaries are shown in Figure 5 – Delineated

Resources. Representative site photographs showing the cover types and wetland characteristics of the Survey Area are included in Attachment A. Information regarding hydrology, hydrophytic vegetation, and hydric soil indicators observed at the wetland and upland data plot locations are included on field datasheets provided in Attachment B.

Wetland A

Wetland A is classified as a palustrine forested wetland system, and is located to the south of East Branch Perkiomen Creek toward the western edge of the Survey Area boundary. This wetland is seasonally inundated due to its geomorphic position in a well-defined, concave depression within the floodplain of the Creek. Localized topography lends to the trapping and detention of water within this depressional basin, both from precipitation and from runoff derived from the surrounding upland portions of the Park, maintaining the hydrologic conditions necessary to support the wetland community.

Vegetation observed between both of the wetland data plots sampled (WET-1 & WET-2) within Wetland A included creeping jenny (*Lysimachia nummularia*), common rush (*Juncus effusus*), red maple (*Acer rubrum*), black gum (*Nyssa sylvatica*), swamp white oak (*Quercus bicolor*) and green ash (*Fraxinus pennsylvanica*). A dominance of hydrophytic vegetation was determined within Wetland A based on the dominance test. The following wetland hydrology indicators were observed within Wetland A at WET-1 and/or WET-2: surface water (A1), high water table (A2), saturation (A3), sparsely vegetated concave surface (B8), water-stained leaves (B9), geomorphic position (D2) and microtopographic relief (D4). Review of aerial imagery showed indications of inundation at both wetland sample plots (B7). The hydric soil indicator observed within both wetland data plots was redox depressions (F8). The soil texture at both wetland sample plots was loamy to a depth of 12"+, with no restrictive layer observed at or below the depth of investigation. Wetland datasheets documenting the characteristics of Wetland A from the field visit are included in Attachment B. Figure 5 shows the delineated Wetland A boundary in relation to the proposed Survey Area, and the data plot locations. No other wetland resources were found within the Survey Area.

Multiple small, isolated pockets (or "islands") of higher-elevation ground are scattered across the depressional basin comprising Wetland A, supporting upland flora (such as red oak, pignut hickory, black walnut, and multiflora rose) and lacking the necessary hydrology and soils conducive to wetlands. These small fragments of uplands were not delineated within the broader wetland complex.

Wetland A maintains a surface water connection to the East Branch Perkiomen Creek by discharging via a short (~40 foot) long section of channelized flow that joins Stream 2 just upstream of its confluence with the East Branch.

Stream 1

Stream 1 is the East Branch Perkiomen Creek. The section within the Parks exhibits minimal flow, and exists mostly as a backwater to the impoundment (dam) just downstream in Lake Lenape Park in the Borough of Sellersville. At the time of the site visit, the water depth was approximately three feet with a channel width of seventy-five feet. The bottom is comprised primarily of deposited silt, with interspersed small gravels. Designated use for this watercourse is TSF-MF.

Stream 2

Stream 2 is a small, unnamed stream flowing in a northward direction from the area south of Constitution Avenue, entering Lenape Park (and adjoining Wetland A) in the western portion of the Survey Area. This small, perennial stream was approximately 12 feet wide with a water depth of less than one foot at the time of the delineation. The channel exhibits a regular riffle/pool configuration, and is adjoined by a narrow but well-connected floodplain along the left (west) bank. The substrate consists of gravel. Designated use for this watercourse is TSF-MF.

This unnamed stream exits a culvert under Constitution Avenue, and flows generally north along the edge of a wooded residential lot to the east before meeting the Wetland A boundary. At that boundary, the stream turns abruptly 90 degrees to the west and enters a concrete inlet / headwall structure. The stream then travels approximately 240 feet due west through a buried culvert pipe, which passes under the earthen berm that forms the southern boundary of Wetland A in this vicinity. After passing through two manhole structures, the stream daylights briefly (for approximately 40 feet) before meeting the East Branch Perkiomen Creek. This daylighted portion of this stream (downstream of the manholes) receives surface flow from the interior of Wetland A, and acts as the primary surface hydrology connection between Wetland A and the East Branch Perkiomen Creek.

Stream 3

Stream 3 is Pleasant Spring Creek. This stream meets the East Branch Perkiomen Creek at the eastern end of Lenape Park, at the eastern limit of the Study Area. The water level in Pleasant Spring Creek is approximately 1-2 feet deep and the channel is 35 to 25 feet in width at the confluence with East Branch Perkiomen Creek. The bottom is comprised primarily of gravels and small cobbles, and the stream exhibits a regular occurrence of riffle and pool features. A small, lowhead dam is located just upstream of the Constitution Avenue bridge, outside of the Survey Area. Designated use for this watercourse is TSF-MF.

Summary

Information from various desktop resources was reviewed prior to the field delineation; the results of these resource reviews are summarized above. A wetland field delineation was completed for the Survey Area in support of the Master Plan Update for Menlo & Lenape Parks. This field effort resulted in the identification of one freshwater wetland resource. Based on field observations, this delineated resource meets the conditions for regulation by the PA DEP under Chapter 105 of the Pennsylvania Code, as well as by the USACE under Section 404 of the Clean Water Act. The three delineated stream resources also qualify as Waters of the Commonwealth and as Waters of the U.S., and are also regulated by the PA DEP under Chapter 105 of the Pennsylvania Code and the USACE under Section 404 of the Clean Water Act. A Chapter 105 / Section 404 Joint Permit and a Section 401 Water Quality Certification, regulated by the PA DEP, need to be obtained if any temporary or permanent impacts to the wetland or streams are proposed in the future. No other wetlands, Waters of the Commonwealth or Waters of the U.S. were identified in the field within the Survey Area. Permits will be required from the PA DEP and/or USACE for any proposed work within the delineated wetland boundaries. Additionally, a local permit will be required for any proposed work within the 100-foot buffer around Wetland A, as regulated by the Borough of Perkasié.

Works Cited

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- U.S. Environmental Protection Agency. Ecoregions of Pennsylvania Level IV. 2010. Pennsylvania Spatial Data Access. <http://www.pasda.psu.edu>.
- U.S. Fish and Wildlife Service (USFWS). 2015. National Wetlands Inventory (NWI) Mapping. <http://www.fws.gov/wetlands/Wetlands-Mapper.html>.

SPM/
Attachments

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Figure 1- Aerial Project Study Area Limits



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend

 Survey Area

Sources: 

Barton
loguidice, D.P.C.
 Engineers • Environmental Scientists • Planners • Landscape Architects



1 inch = 600 feet

Borough of Perkaskie

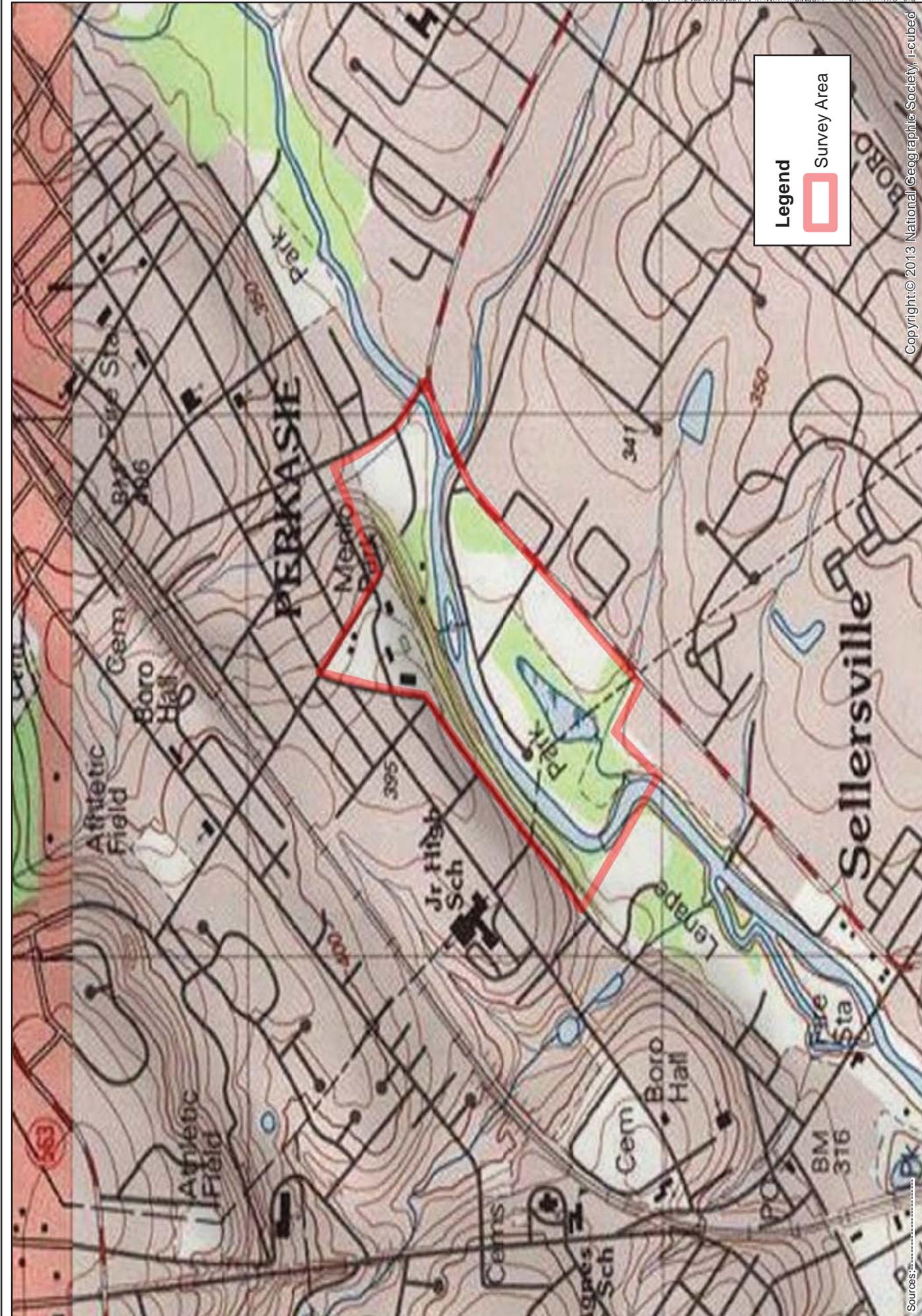
Survey Area - Menlo & Lenape Parks

Bucks County Pennsylvania

Figure 1
 Project No. 1850.001

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Figure 2- Topographic Project Study Area Limits



Sources:
 Copyright: © 2013 National Geographic Society, i-cubed

Figure
2
 Project
No.
1850.001

Borough of Perkasio

Survey Area - Menlo & Lenape Parks

Bucks County Pennsylvania

April 2016

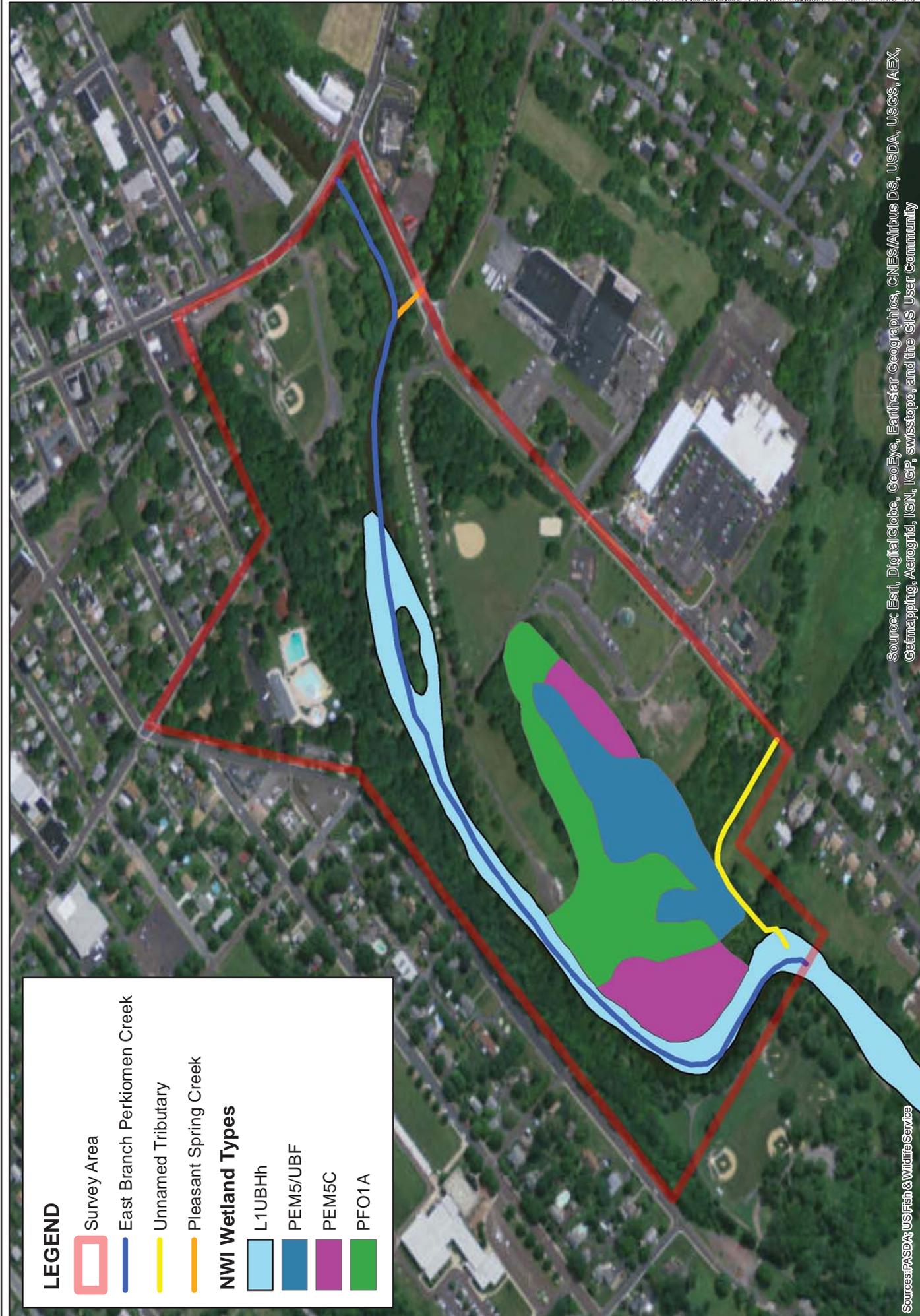


1 inch = 1,000 feet

Barton
B&L
 oguidice, D.P.C.
 Engineers • Environmental Scientists • Planners • Landscape Architects

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Figure 3- Mapped Resources



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

LEGEND

-  Survey Area
-  East Branch Perkiomen Creek
-  Unnamed Tributary
-  Pleasant Spring Creek

NWI Wetland Types

-  L1UBHh
-  PEM5/UBF
-  PEM5C
-  PFO1A



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Figure 4- Soil Mapping



Legend

Study Area

Soil Type

Bo

CwA

PKC

Ro

UgB

W

Sources: PASDA, US Fish & Wildlife Service



1 inch = 500 feet

Borough of Perkasio

Mapped Soils - Menlo & Lenape Parks

Bucks County

April 2016

Pennsylvania

Figure

4

Project No. 1850.001

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Figure 5- Delineated Resources



LEGEND

- Survey Area
- Wetland A
- Sample Plots
- Stream 1
- Stream 2
- Stream 3

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



1 inch = 500 feet

Borough of Perkaskie

Delineated Resources - Menlo & Lenape Parks

Bucks County Pennsylvania

April 2016

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Attachment A Site Photographs



Figure 1. Prevailing conditions (April 2016) at sample plot UPL-1. Plot is situated within a constructed basin / outdoor ice skating area. This area is planted in red fescue, and routinely mowed during the drier summer months.



Figure 2. View of sample plot WET-1. Soils across the site are naturally problematic due to influence of red parent material, but reflect redox depressions (when observed in a dry condition). Hydrophytic vegetation and hydrology indicators also are present.



Figure 3. View of soil pit at sample plot WET-1. Standing water is present in the pit, beginning at a depth four inches below the surface.



Figure 4. Example of topographic break defining the wetland / upland transition in the vicinity of WET-1.



Figure 5. View of prevailing conditions (April 2016) at sample plot UPL-2. In the early growing season, the herbaceous layer is dominated by fig buttercup (*Ranunculus ficaria*).



Figure 6. Typical upland conditions in the vicinity of UPL-2.



Figure 7. View of prevailing conditions (April 2016) at, and in the vicinity of, sample plot WET-2.



Figure 8. View of typical conditions within Wetland A (April 2016).



Figure 9. View of typical conditions within Wetland A (April 2016).



Figure 10. Typical conditions along East Branch Perkiomen Creek within the Survey Area, facing northwest from the general vicinity of UPL-2 (April 2016).

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Attachment B Field Datasheets

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Menlo/Lenape Park City/County: Perkasie, PA Sampling Date: 04/11/2016
 Applicant/Owner: Borough of Perkasie State: PA Sampling Point: UPL-1
 Investigator(s): McAdams (B&L) Section, Township, Range: n/a
 Landform (hillslope, terrace, etc.): floodplain / basin Local relief (concave, convex, none): concave Slope (%): 0-3%
 Subregion (LRR or MLRA): S_148 Lat: 40.365375° Long: 75.300948° Datum: NAD83
 Soil Map Unit Name: Rowland silt loam (Ro) NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks: Area is a routinely-mowed basin within Lenape Park constructed as an ice skating area. Vegetation dominated by introduced grasses (such as red fescue). <i>Lysimachia nummularia</i> , <i>Ranunculus ficaria</i> and <i>Phalaris arundinacea</i> present in small isolated clusters within the basin, but outside of sample plot area, and are not dominant. Soils are naturally problematic due to red parent material, lack typical low chroma of hydric soils, but reflect other hydric indicators (F8). | |

HYDROLOGY

| | |
|--|--|
| Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) | Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5) |
|--|--|

| | |
|---|--|
| Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>n/a</u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>n/a</u> Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0-6"</u> | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---|--|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 review of 2014 aerial imagery shows indications of inundation or saturation in this area

Remarks:
 Presence of wetland hydrology is consistent with intended purpose of this constructed basin, to capture and retain surface water. Verified through review of aerial imagery and saturation of the upper 6" of soil at the time of delineation (April 2016).
 Likely compaction of soils during construction of this depressional basin may contribute to retention of surface water following periods of inundation.

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: UPL-1

| <p><u>Tree Stratum</u> (Plot size: <u>30'</u>)</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:5%;">#</th> <th style="width:45%;">Species</th> <th style="width:10%;">Absolute % Cover</th> <th style="width:10%;">Dominant Species?</th> <th style="width:10%;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1.</td><td><u>n/a</u></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td><td></td></tr> <tr><td>6.</td><td></td><td></td><td></td><td></td></tr> </tbody> </table> <p style="text-align: right;">_____ = Total Cover</p> <p style="text-align: center;">50% of total cover: _____ 20% of total cover: _____</p> <p><u>Sapling Stratum</u> (Plot size: <u>15'</u>)</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:5%;">#</th> <th style="width:45%;">Species</th> <th style="width:10%;">Absolute % Cover</th> <th style="width:10%;">Dominant Species?</th> <th style="width:10%;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1.</td><td><u>n/a</u></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td><td></td></tr> <tr><td>6.</td><td></td><td></td><td></td><td></td></tr> </tbody> </table> <p style="text-align: right;">_____ = Total Cover</p> <p style="text-align: center;">50% of total cover: _____ 20% of total cover: _____</p> <p><u>Shrub Stratum</u> (Plot size: <u>15'</u>)</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:5%;">#</th> <th style="width:45%;">Species</th> <th style="width:10%;">Absolute % Cover</th> <th style="width:10%;">Dominant Species?</th> <th style="width:10%;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1.</td><td><u>n/a</u></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td><td></td></tr> <tr><td>6.</td><td></td><td></td><td></td><td></td></tr> </tbody> </table> <p style="text-align: right;">_____ = Total Cover</p> <p style="text-align: center;">50% of total cover: _____ 20% of total cover: _____</p> <p><u>Herb Stratum</u> (Plot size: <u>5'</u>)</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:5%;">#</th> <th style="width:45%;">Species</th> <th style="width:10%;">Absolute % Cover</th> <th style="width:10%;">Dominant Species?</th> <th style="width:10%;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1.</td><td><u>Festuca rubra</u></td><td><u>90</u></td><td><u>Y</u></td><td><u>FACU</u></td></tr> <tr><td>2.</td><td><u>Ranunculus ficaria</u></td><td><u>10</u></td><td><u>N</u></td><td><u>FAC</u></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td><td></td></tr> <tr><td>6.</td><td></td><td></td><td></td><td></td></tr> <tr><td>7.</td><td></td><td></td><td></td><td></td></tr> <tr><td>8.</td><td></td><td></td><td></td><td></td></tr> <tr><td>9.</td><td></td><td></td><td></td><td></td></tr> <tr><td>10.</td><td></td><td></td><td></td><td></td></tr> <tr><td>11.</td><td></td><td></td><td></td><td></td></tr> </tbody> </table> <p style="text-align: right;">_____ = Total Cover</p> <p style="text-align: center;">50% of total cover: <u>50</u> 20% of total cover: <u>20</u></p> <p><u>Woody Vine Stratum</u> (Plot size: <u>30'</u>)</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:5%;">#</th> <th style="width:45%;">Species</th> <th style="width:10%;">Absolute % Cover</th> <th style="width:10%;">Dominant Species?</th> <th style="width:10%;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1.</td><td><u>n/a</u></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td><td></td></tr> </tbody> </table> <p style="text-align: right;">_____ = Total Cover</p> <p style="text-align: center;">50% of total cover: _____ 20% of total cover: _____</p> | # | Species | Absolute % Cover | Dominant Species? | Indicator Status | 1. | <u>n/a</u> | | | | 2. | | | | | 3. | | | | | 4. | | | | | 5. | | | | | 6. | | | | | # | Species | Absolute % Cover | Dominant Species? | Indicator Status | 1. | <u>n/a</u> | | | | 2. | | | | | 3. | | | | | 4. | | | | | 5. | | | | | 6. | | | | | # | Species | Absolute % Cover | Dominant Species? | Indicator Status | 1. | <u>n/a</u> | | | | 2. | | | | | 3. | | | | | 4. | | | | | 5. | | | | | 6. | | | | | # | Species | Absolute % Cover | Dominant Species? | Indicator Status | 1. | <u>Festuca rubra</u> | <u>90</u> | <u>Y</u> | <u>FACU</u> | 2. | <u>Ranunculus ficaria</u> | <u>10</u> | <u>N</u> | <u>FAC</u> | 3. | | | | | 4. | | | | | 5. | | | | | 6. | | | | | 7. | | | | | 8. | | | | | 9. | | | | | 10. | | | | | 11. | | | | | # | Species | Absolute % Cover | Dominant Species? | Indicator Status | 1. | <u>n/a</u> | | | | 2. | | | | | 3. | | | | | 4. | | | | | 5. | | | | | <p>Dominance Test worksheet:</p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>1</u> (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)</p> <hr/> <p>Prevalence Index worksheet:</p> <table style="width:100%;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>90</u></td> <td>x 4 = <u>360</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td><u>420</u> (B)</td> </tr> </table> <p style="text-align: right;">Prevalence Index = B/A = <u>4.2</u></p> <hr/> <p>Hydrophytic Vegetation Indicators:</p> <p><input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation</p> <p><input type="checkbox"/> 2 - Dominance Test is >50%</p> <p><input type="checkbox"/> 3 - Prevalence Index is ≤3.0¹</p> <p><input type="checkbox"/> 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p>Definitions of Five Vegetation Strata:</p> <p>Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).</p> <p>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</p> <p>Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</p> <p>Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.</p> <p>Woody vine – All woody vines, regardless of height.</p> <hr/> <p>Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> | Total % Cover of: | Multiply by: | OBL species <u>0</u> | x 1 = <u>0</u> | FACW species <u>0</u> | x 2 = <u>0</u> | FAC species <u>10</u> | x 3 = <u>30</u> | FACU species <u>90</u> | x 4 = <u>360</u> | UPL species <u>0</u> | x 5 = <u>0</u> | Column Totals: <u>100</u> (A) | <u>420</u> (B) |
|---|---------------------------|------------------|-------------------|-------------------|------------------|----|------------|--|--|--|----|--|--|--|--|----|--|--|--|--|----|--|--|--|--|----|--|--|--|--|----|--|--|--|--|---|---------|------------------|-------------------|------------------|----|------------|--|--|--|----|--|--|--|--|----|--|--|--|--|----|--|--|--|--|----|--|--|--|--|----|--|--|--|--|---|---------|------------------|-------------------|------------------|----|------------|--|--|--|----|--|--|--|--|----|--|--|--|--|----|--|--|--|--|----|--|--|--|--|----|--|--|--|--|---|---------|------------------|-------------------|------------------|----|----------------------|-----------|----------|-------------|----|---------------------------|-----------|----------|------------|----|--|--|--|--|----|--|--|--|--|----|--|--|--|--|----|--|--|--|--|----|--|--|--|--|----|--|--|--|--|----|--|--|--|--|-----|--|--|--|--|-----|--|--|--|--|---|---------|------------------|-------------------|------------------|----|------------|--|--|--|----|--|--|--|--|----|--|--|--|--|----|--|--|--|--|----|--|--|--|--|--|-------------------|--------------|----------------------|----------------|-----------------------|----------------|-----------------------|-----------------|------------------------|------------------|----------------------|----------------|-------------------------------|----------------|
| # | Species | Absolute % Cover | Dominant Species? | Indicator Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. | <u>n/a</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| # | Species | Absolute % Cover | Dominant Species? | Indicator Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. | <u>n/a</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| # | Species | Absolute % Cover | Dominant Species? | Indicator Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. | <u>n/a</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| # | Species | Absolute % Cover | Dominant Species? | Indicator Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. | <u>Festuca rubra</u> | <u>90</u> | <u>Y</u> | <u>FACU</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. | <u>Ranunculus ficaria</u> | <u>10</u> | <u>N</u> | <u>FAC</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| # | Species | Absolute % Cover | Dominant Species? | Indicator Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. | <u>n/a</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OBL species <u>0</u> | x 1 = <u>0</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FACW species <u>0</u> | x 2 = <u>0</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FAC species <u>10</u> | x 3 = <u>30</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FACU species <u>90</u> | x 4 = <u>360</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UPL species <u>0</u> | x 5 = <u>0</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Column Totals: <u>100</u> (A) | <u>420</u> (B) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Remarks: (Include photo numbers here or on a separate sheet.)</p> <p>Constructed basin; routine mowing and introduction of non-native grass has altered vegetative community</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

SOIL

Sampling Point: UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|----------------|---------------|----|----------------|----|-------------------|------------------|---------|---------------------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-6" | 10YR 4/4 | 90 | 10YR 5/6 | 10 | C | M | loamy | mottles distinct & common |
| 6-12" | 5YR 5/4 | 90 | 5YR 5/6 | 10 | C | M | loamy | mottles distinct & common |
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¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | | | |
|--|--|--|---|
| Hydric Soil Indicators: | | Indicators for Problematic Hydric Soils³: | |
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Dark Surface (S7) | <input type="checkbox"/> 2 cm Muck (A10) (MLRA 147) | ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) | <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148) | |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147) | |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) | |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Other (Explain in Remarks) | |
| <input type="checkbox"/> 2 cm Muck (A10) (LRR N) | <input type="checkbox"/> Redox Dark Surface (F6) | | |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input checked="" type="checkbox"/> Redox Depressions (F8) | | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) | <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) | | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122) | | |
| <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) | | |
| <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147) | | |

Restrictive Layer (if observed):
 Type: n/a
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Soils are present within a closed depression subject to routine, seasonal inundation and meet technical description for application of F8 indicator.

Likely compaction of soils during construction of this depressional basin may contribute to retention of surface water following periods of inundation.

This depressional feature has no apparent surface connection to nearby waterways, but is confined entirely within the constructed depressional basin.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Menlo/Lenape Park City/County: Perkasie, PA Sampling Date: 04/11/2016
 Applicant/Owner: Borough of Perkasie State: PA Sampling Point: UPL-2
 Investigator(s): McAdams (B&L) Section, Township, Range: n/a
 Landform (hillslope, terrace, etc.): floodplain / terrace Local relief (concave, convex, none): none Slope (%): 0-3%
 Subregion (LRR or MLRA): S_148 Lat: 40.363872° Long: 75.303315° Datum: NAD83
 Soil Map Unit Name: Bowmansville-Knauers silt loam (Bo) NWI classification: PEM5C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks: Area located in upland forest. Not consistent with NWI palustrine, <u>Phragmites</u> -dominated wetland. Soils problematic due to influence of red parent material. | |

HYDROLOGY

| | |
|---|---|
| Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) | Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5) |
|---|---|

| | |
|--|--|
| Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>n/a</u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>n/a</u> Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>n/a</u> | Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
|--|--|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 review of 2014 aerial imagery shows no indications of inundation or saturation in this area

Remarks:
 Sample plot is located within an upland forested area. No wetland hydrology indicators observed.

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: UPL-2

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status |
|--|------------------|-------------------|------------------|
| 1. <u>Juglans nigra</u> | <u>15</u> | <u>Y</u> | <u>FACU</u> |
| 2. <u>Acer rubrum</u> | <u>9</u> | <u>Y</u> | <u>FAC</u> |
| 3. <u>Carya glabra</u> | <u>9</u> | <u>Y</u> | <u>FACU</u> |
| 4. <u>Acer negundo</u> | <u>5</u> | <u>N</u> | <u>FAC</u> |
| 5. <u>Fraxinus pennsylvanica</u> | <u>5</u> | <u>N</u> | <u>FACW</u> |
| 6. _____ | _____ | _____ | _____ |
| <u>43</u> = Total Cover | | | |
| 50% of total cover: <u>21.5</u> 20% of total cover: <u>8.6</u> | | | |
| Sapling Stratum (Plot size: <u>15'</u>) | Absolute % Cover | Dominant Species? | Indicator Status |
| 1. <u>Carya glabra</u> | <u>5</u> | <u>Y</u> | <u>FACU</u> |
| 2. <u>Acer rubrum</u> | <u>5</u> | <u>Y</u> | <u>FAC</u> |
| 3. _____ | _____ | _____ | _____ |
| 4. _____ | _____ | _____ | _____ |
| 5. _____ | _____ | _____ | _____ |
| 6. _____ | _____ | _____ | _____ |
| <u>10</u> = Total Cover | | | |
| 50% of total cover: <u>5</u> 20% of total cover: <u>2</u> | | | |
| Shrub Stratum (Plot size: <u>15'</u>) | Absolute % Cover | Dominant Species? | Indicator Status |
| 1. <u>Lonicera tatarica</u> | <u>12</u> | <u>Y</u> | <u>FACU</u> |
| 2. <u>Rosa multiflora</u> | <u>8</u> | <u>Y</u> | <u>FACU</u> |
| 3. _____ | _____ | _____ | _____ |
| 4. _____ | _____ | _____ | _____ |
| 5. _____ | _____ | _____ | _____ |
| 6. _____ | _____ | _____ | _____ |
| <u>20</u> = Total Cover | | | |
| 50% of total cover: <u>10</u> 20% of total cover: <u>4</u> | | | |
| Herb Stratum (Plot size: <u>5'</u>) | Absolute % Cover | Dominant Species? | Indicator Status |
| 1. <u>Ranunculus ficaria</u> | <u>60</u> | <u>Y</u> | <u>FAC</u> |
| 2. <u>Claytonia virginica</u> | <u>10</u> | <u>N</u> | <u>NI</u> |
| 3. <u>Allium canadense</u> | <u>2</u> | <u>N</u> | <u>FACU</u> |
| 4. _____ | _____ | _____ | _____ |
| 5. _____ | _____ | _____ | _____ |
| 6. _____ | _____ | _____ | _____ |
| 7. _____ | _____ | _____ | _____ |
| 8. _____ | _____ | _____ | _____ |
| 9. _____ | _____ | _____ | _____ |
| 10. _____ | _____ | _____ | _____ |
| 11. _____ | _____ | _____ | _____ |
| <u>72</u> = Total Cover | | | |
| 50% of total cover: <u>36</u> 20% of total cover: <u>14.4</u> | | | |
| Woody Vine Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status |
| 1. <u>n/a</u> | _____ | _____ | _____ |
| 2. _____ | _____ | _____ | _____ |
| 3. _____ | _____ | _____ | _____ |
| 4. _____ | _____ | _____ | _____ |
| 5. _____ | _____ | _____ | _____ |
| _____ = Total Cover | | | |
| 50% of total cover: _____ 20% of total cover: _____ | | | |

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 37.5 (A/B)

Prevalence Index worksheet:

| | |
|-------------------------------|------------------|
| Total % Cover of: | Multiply by: |
| OBL species <u>0</u> | x 1 = <u>0</u> |
| FACW species <u>5</u> | x 2 = <u>10</u> |
| FAC species <u>79</u> | x 3 = <u>222</u> |
| FACU species <u>51</u> | x 4 = <u>204</u> |
| UPL species <u>0</u> | x 5 = <u>0</u> |
| Column Totals: <u>135</u> (A) | <u>446</u> (B) |

Prevalence Index = B/A = 3.3

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes No

Remarks: (Include photo numbers here or on a separate sheet.)
 Availability of herbaceous vegetation limited by early growing season date.

SOIL

Sampling Point: UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|----------------|---------------|----|----------------|----|-------------------|------------------|---------|---------------------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-6" | 5YR 5/4 | 90 | 5YR 4/6 | 10 | D | M | loamy | mottles distinct & common |
| 6-12"+ | 5YR 5/4 | 90 | 5YR 4/6 | 10 | D | M | loamy | mottles distinct & common |
| | | | | | | | | |
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¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | | |
|--|--|--|
| Hydric Soil Indicators: | | Indicators for Problematic Hydric Soils³: |
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Dark Surface (S7) | <input type="checkbox"/> 2 cm Muck (A10) (MLRA 147) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) | <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> 2 cm Muck (A10) (LRR N) | <input type="checkbox"/> Redox Dark Surface (F6) | |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input checked="" type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) | <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122) | |
| <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) | |
| <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147) | |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
 Type: n/a
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks: Soils are similar in color and texture / composition to those found at wetland sample plots within this forested area.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Menlo/Lenape Park City/County: Perkasie, PA Sampling Date: 04/11/2016
 Applicant/Owner: Borough of Perkasie State: PA Sampling Point: WET-1
 Investigator(s): McAdams (B&L) Section, Township, Range: n/a
 Landform (hillslope, terrace, etc.): floodplain / terrace Local relief (concave, convex, none): concave Slope (%): 0-3%
 Subregion (LRR or MLRA): S_148 Lat: 40.364900° Long: 75.301188° Datum: NAD83
 Soil Map Unit Name: Bowmansville-Knauers silt loam (Bo) NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Remarks: Area located within forested wetland complex as identified by NWI. Herbaceous vegetation only partially available due to early date in growing season. Soils are naturally problematic due to red parent material, which masks typical color characteristics of hydric soils. | |

HYDROLOGY

| | |
|---|--|
| Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) | Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5) |
|---|--|

| | |
|--|--|
| Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>n/a</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>6"</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0-12"</u> (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|--|--|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

review of 2014 aerial imagery shows indications of inundation in this area

Remarks:
 Sample plot is located within a distinct depression within the broader forested wetland area (D2), which lies in a concave depression within the floodplain of East Branch Perkiomen Creek. Saturation visible at the surface among water-stained leaves at the time of delineation (April 2016). An unidentified sedge grows in hummocks within the shallow basin, which is otherwise unvegetated (B8).

 Availability of surface water is most likely attributable to seasonal flooding associated with precipitation / snowmelt, as well as collection and detention of runoff across the depressional surface.

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: WET-1

| | Absolute % Cover | Dominant Species? | Indicator Status | |
|--|---------------------------------|-------------------------------|------------------|--|
| Tree Stratum (Plot size: <u>30'</u>) | | | | |
| 1. <u>Fraxinus pennsylvanica</u> | <u>45</u> | <u>Y</u> | <u>FACW</u> | |
| 2. <u>Acer rubrum</u> | <u>30</u> | <u>Y</u> | <u>FAC</u> | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| | <u>75</u> | = Total Cover | | |
| | 50% of total cover: <u>37.5</u> | 20% of total cover: <u>15</u> | | |
| Sapling Stratum (Plot size: <u>15'</u>) | | | | |
| 1. <u>n/a</u> | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| | | = Total Cover | | |
| | 50% of total cover: _____ | 20% of total cover: _____ | | |
| Shrub Stratum (Plot size: <u>15'</u>) | | | | |
| 1. <u>n/a</u> | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| | | = Total Cover | | |
| | 50% of total cover: _____ | 20% of total cover: _____ | | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | |
| 1. <u>Carex sp.</u> | <u>5</u> | <u>Y</u> | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| 11. _____ | | | | |
| | <u>5</u> | = Total Cover | | |
| | 50% of total cover: <u>2.5</u> | 20% of total cover: <u>1</u> | | |
| Woody Vine Stratum (Plot size: <u>30'</u>) | | | | |
| 1. <u>n/a</u> | | | | |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| | | = Total Cover | | |
| | 50% of total cover: _____ | 20% of total cover: _____ | | |

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by:

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes No

Remarks: (Include photo numbers here or on a separate sheet.)

Availability of herbaceous vegetation limited by early growing season date.

SOIL

Sampling Point: WET-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|----------------|---------------|----|----------------|----|-------------------|------------------|---------|---------------------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-6" | 5YR 5/4 | 90 | 5YR 4/6 | 10 | C | M | loamy | mottles distinct & common |
| 6-12"+ | 5YR 5/4 | 90 | 5YR 4/6 | 10 | C | M | loamy | mottles distinct & common |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

| | | |
|--|--|--|
| Hydric Soil Indicators: | | Indicators for Problematic Hydric Soils³: |
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Dark Surface (S7) | <input type="checkbox"/> 2 cm Muck (A10) (MLRA 147) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) | <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> 2 cm Muck (A10) (LRR N) | <input type="checkbox"/> Redox Dark Surface (F6) | |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input checked="" type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) | <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122) | |
| <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) | |
| <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147) | |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
 Type: n/a
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks: Soils are present within a depression basin subject to routine, seasonal inundation and exhibit distinct redox concentrations in the upper 4" of the soil profile.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Menlo/Lenape Park City/County: Perkasie, PA Sampling Date: 04/11/2016
 Applicant/Owner: Borough of Perkasie State: PA Sampling Point: WET-2
 Investigator(s): McAdams (B&L) Section, Township, Range: n/a
 Landform (hillslope, terrace, etc.): floodplain / terrace Local relief (concave, convex, none): concave Slope (%): 0-3%
 Subregion (LRR or MLRA): S_148 Lat: 40.365429° Long: 75.299173° Datum: NAD83
 Soil Map Unit Name: Bowmansville-Knauers silt loam (Bo) NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Remarks: Area within a depositional basin adjacent to parking and driveway within Lenape Park. Prevailing condition is consistent with NWI palustrine, forested wetland. Soils problematic due to influence of red parent material, which masks typical color characteristics of hydric soils | |

HYDROLOGY

| | |
|--|--|
| <p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) | <p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5) |
| <p>Field Observations:</p> Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>~4"</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0"</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0"</u> (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: review of 2014 aerial imagery shows no indications of inundation or saturation in this area | |
| Remarks: Surface water observed in proximity of sample plot. Entire wetland complex is situated within a distinct topographic break that forms a depressional, concave basin which detains precipitation and collects runoff from adjoining uplands. Buttressed roots visible on larger trees (green ash, red maple, black gum) growing within sampling plot (D4). | |

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: WET-2

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status |
|---------------------------------------|------------------|-------------------------------|------------------|
| 1. <u>Acer rubrum</u> | <u>12</u> | <u>Y</u> | <u>FAC</u> |
| 2. <u>Fraxinus pennsylvanica</u> | <u>30</u> | <u>Y</u> | <u>FACW</u> |
| 3. <u>Nyssa sylvatica</u> | <u>10</u> | <u>N</u> | <u>FAC</u> |
| 4. <u>Quercus bicolor</u> | <u>8</u> | <u>N</u> | <u>FACW</u> |
| 5. _____ | _____ | _____ | _____ |
| 6. _____ | _____ | _____ | _____ |
| <u>60</u> = Total Cover | | | |
| 50% of total cover: <u>30</u> | | 20% of total cover: <u>12</u> | |

| Sapling Stratum (Plot size: <u>15'</u>) | Absolute % Cover | Dominant Species? | Indicator Status |
|--|------------------|---------------------------|------------------|
| 1. <u>n/a</u> | _____ | _____ | _____ |
| 2. _____ | _____ | _____ | _____ |
| 3. _____ | _____ | _____ | _____ |
| 4. _____ | _____ | _____ | _____ |
| 5. _____ | _____ | _____ | _____ |
| 6. _____ | _____ | _____ | _____ |
| _____ = Total Cover | | | |
| 50% of total cover: _____ | | 20% of total cover: _____ | |

| Shrub Stratum (Plot size: <u>15'</u>) | Absolute % Cover | Dominant Species? | Indicator Status |
|--|------------------|--------------------------------|------------------|
| 1. <u>Frangula alnus</u> | <u>5</u> | <u>Y</u> | <u>FAC</u> |
| 2. <u>Acer rubrum</u> | <u>12</u> | <u>Y</u> | <u>FAC</u> |
| 3. _____ | _____ | _____ | _____ |
| 4. _____ | _____ | _____ | _____ |
| 5. _____ | _____ | _____ | _____ |
| 6. _____ | _____ | _____ | _____ |
| <u>17</u> = Total Cover | | | |
| 50% of total cover: <u>8.5</u> | | 20% of total cover: <u>3.4</u> | |

| Herb Stratum (Plot size: <u>5'</u>) | Absolute % Cover | Dominant Species? | Indicator Status |
|--------------------------------------|------------------|-------------------------------|------------------|
| 1. <u>Ranunculus ficaria</u> | <u>65</u> | <u>Y</u> | <u>FAC</u> |
| 2. <u>Juncus effusus</u> | <u>10</u> | <u>N</u> | <u>FACW</u> |
| 3. <u>Carex sp.</u> | <u>5</u> | <u>N</u> | _____ |
| 4. <u>Lysimachia nummularia</u> | <u>10</u> | <u>N</u> | <u>FACW</u> |
| 5. _____ | _____ | _____ | _____ |
| 6. _____ | _____ | _____ | _____ |
| 7. _____ | _____ | _____ | _____ |
| 8. _____ | _____ | _____ | _____ |
| 9. _____ | _____ | _____ | _____ |
| 10. _____ | _____ | _____ | _____ |
| 11. _____ | _____ | _____ | _____ |
| <u>90</u> = Total Cover | | | |
| 50% of total cover: <u>45</u> | | 20% of total cover: <u>18</u> | |

| Woody Vine Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|------------------|---------------------------|------------------|
| 1. <u>n/a</u> | _____ | _____ | _____ |
| 2. _____ | _____ | _____ | _____ |
| 3. _____ | _____ | _____ | _____ |
| 4. _____ | _____ | _____ | _____ |
| 5. _____ | _____ | _____ | _____ |
| _____ = Total Cover | | | |
| 50% of total cover: _____ | | 20% of total cover: _____ | |

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by:

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes No

Remarks: (Include photo numbers here or on a separate sheet.)

Availability of herbaceous vegetation limited by early growing season date.

SOIL

Sampling Point: WET-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|----------------|---------------|----|----------------|----|-------------------|------------------|---------|---------------------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-6" | 10YR 4/4 | 85 | 10YR 5/6 | 15 | C | M | loamy | mottles distinct & common |
| 6-12"+ | 5YR 5/4 | 90 | 5YR 4/6 | 10 | C | M | loamy | mottles distinct & common |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: n/a
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks: Soils are similar in color and texture / composition to those found at other sample plots within this forested area.

Redox features not visible at first, but visible after soil was exposed to air for some time

| Menlo & Lenape Park - Estimated Costs of Development | | | | | |
|---|---|------------------|------------------|-----------------|---------------------|
| Total Proposed Site Improvements | | | | | \$ 4,405,969 |
| Mobilization (3%) | | | | | \$ 132,179 |
| Construction Surveying (2%) | | | | | \$ 88,119 |
| Erosion and Sedimentation Control (2%) | | | | | \$ 88,119 |
| Construction Contingency (15%) | | | | | \$ 440,597 |
| Design and Engineering (15%) | | | | | \$ 660,895 |
| Total Estimated Project Costs | | | | | \$ 5,815,879 |
| | Work Item | Quantity | Unit Cost | Total Item Cost | Total Cost |
| Phase 1 | Lenape Park Band Shell Area Improvements | | Total | | \$ 841,160 |
| Site Preparation | | 92,000 SF | Sub Total | | \$ 64,073 |
| | Site Preparation / Select Tree Removal | 5 EA | \$ 600.00 | \$ 3,000.00 | |
| | Demolish Bituminous Driveways | 2,257 SY | \$ 6.30 | \$ 14,221.20 | |
| | Disposable of Demolition Materials | 3,407 CY | \$ 13.75 | \$ 46,851.85 | |
| Parking Improvements | | 30,725 SF | Sub Total | | \$ 165,778 |
| | Finish Grade | 3,414 SY | \$ 2.93 | \$ 10,002.69 | |
| | Driveway 12x8 Box Culvert | 40 LF | \$ 760.00 | \$ 30,400.00 | |
| | 6" PADOT 2A Aggregate Subbase | 3,414 SY | \$ 6.70 | \$ 22,873.06 | |
| | 4" Bituminous Pavement Base Course | 3,414 SY | \$ 18.85 | \$ 64,351.81 | |
| | 2" Bituminous Wearing Course | 3,414 SY | \$ 9.60 | \$ 32,773.33 | |
| | Striping - White 4" Wide | 52 STALL | \$ 8.85 | \$ 460.20 | |
| | ADA Parking Signage and Symbol | 3 EA | \$ 345.00 | \$ 1,035.00 | |
| | Concrete Tire/Wheel Stops | 42 EA | \$ 70.10 | \$ 2,944.20 | |
| | Detectable Warning Mats | 32 SF | \$ 21.50 | \$ 688.00 | |
| | Crosswalk | 1 EA | \$ 250.00 | \$ 250.00 | |
| Pavilion / Restroom Plaza | | 2,120 SF | Sub Total | | \$ 260,617 |
| | Finish Grade | 236 SY | \$ 2.93 | \$ 690.18 | |
| | 6" x 18" Concrete Curb | 252 LF | \$ 18.77 | \$ 4,730.04 | |
| | 12" Clean #57 Aggregate Subbase | 236 SY | \$ 12.10 | \$ 2,850.22 | |
| | Geotextile Fabric | 236 SY | \$ 2.21 | \$ 520.58 | |
| | 1" Setting Bed | 7 CY | \$ 63.00 | \$ 412.22 | |
| | Permeable Concrete Pavers | 236 SF | \$ 6.00 | \$ 1,413.33 | |
| | Restrooms and Pavilion Structure | 1 Allowance | \$ 250,000.00 | \$ 250,000.00 | |
| Stage Plaza | | 2,165 SF | Sub Total | | \$ 85,835 |
| | Finish Grade | 241 SY | \$ 2.93 | \$ 704.83 | |
| | 6" x 18" Concrete Curb | 257 LF | \$ 18.77 | \$ 4,823.89 | |
| | 12" Clean #57 Aggregate Subbase | 241 SY | \$ 12.10 | \$ 2,910.72 | |
| | Geotextile Fabric | 241 SY | \$ 2.21 | \$ 531.63 | |
| | 1" Setting Bed | 7 CY | \$ 63.00 | \$ 420.97 | |
| | Permeable Concrete Pavers | 241 SF | \$ 6.00 | \$ 1,443.33 | |
| | Stage | 1 Allowance | \$ 75,000.00 | \$ 75,000.00 | |
| Fire Pit' ADA Fishing Access | | 1,950 SF | Sub Total | | \$ 32,775 |
| | Streambank Stabilization, Gabion | 72 LF | \$ 300.00 | \$ 21,600.00 | |
| | Finish Grade | 217 SY | \$ 2.93 | \$ 634.83 | |
| | Boardwalk / Decking | 665 SF | \$ 15.85 | \$ 10,540.25 | |

| | | | | | | |
|-------------------------------------|--|------------------|--|------------------|--------------|------------------|
| Bridge Approach Improvements | | 1,950 SF | | Sub Total | | \$ 13,467 |
| | Finish Grade | 217 SY | | \$ 2.93 | \$ 634.83 | |
| | 6" x 18" Concrete Curb | 429 LF | | \$ 18.77 | \$ 8,052.33 | |
| | 12" Clean #57 Aggregate Subbase | 217 SY | | \$ 12.10 | \$ 2,621.67 | |
| | Geotextile Fabric | 217 SY | | \$ 2.21 | \$ 478.83 | |
| | 1" Setting Bed | 6 CY | | \$ 63.00 | \$ 379.17 | |
| | Permeable Concrete Pavers | 217 SF | | \$ 6.00 | \$ 1,300.00 | |
| Paved Walkways | | 31,547 SF | | Sub Total | | \$ 90,365 |
| | Finish Grade | 3,505 SY | | \$ 1.43 | \$ 5,012.47 | |
| | 6" PADOT 2A Aggregate Subbase | 3,505 SY | | \$ 6.70 | \$ 23,484.99 | |
| | 2" Pavement Bituminous Base Course | 3,505 SY | | \$ 9.55 | \$ 33,474.87 | |
| | 1.5" Bituminous Wearing Course | 3,505 SY | | \$ 8.10 | \$ 28,392.30 | |
| Site Furnishings | | 2,549 SF | | Sub Total | | \$ 42,400 |
| | Information Park Kiosk | 1 LS | | \$ 3,500.00 | \$ 3,500.00 | |
| | Park Sign | 1 LS | | \$ 5,000.00 | \$ 5,000.00 | |
| | Funding Plaque | 1 LS | | \$ 2,500.00 | \$ 2,500.00 | |
| | Gate | 1 LS | | \$ 3,000.00 | \$ 3,000.00 | |
| | Benches | 8 EA | | \$ 1,250.00 | \$ 10,000.00 | |
| | Trash Receptacles | 4 EA | | \$ 1,000.00 | \$ 4,000.00 | |
| | Picnic Tables | 12 EA | | \$ 1,200.00 | \$ 14,400.00 | |
| Stormwater BMP | | 30,000 SF | | Sub Total | | \$ 47,709 |
| | Soil Amended | 556 CY | | \$ 65.00 | \$ 36,111.11 | |
| | Riparian Meadow Planting | 14 AC | | \$ 10.00 | \$ 137.74 | |
| | 15" HDPE Type S Piping Installed | 300 LF | | \$ 32.00 | \$ 9,600.00 | |
| | Bell inlet pipe raiser | 2 EA | | \$ 180.00 | \$ 360.00 | |
| | Level Spreader | 1 EA | | \$ 1,500.00 | \$ 1,500.00 | |
| General Plantings | | 2,549 SF | | Sub Total | | \$ 38,142 |
| | Deciduous Trees | 15 EA | | \$ 550.00 | \$ 8,250.00 | |
| | Shrub / Herbaceous Plantings | 1,500 SF | | \$ 10.00 | \$ 15,000.00 | |
| | 4" Topsoil | 118 CY | | \$ 45.00 | \$ 5,298.61 | |
| | Lawn Seeding with mulch and fertilizer | 2,119 SY | | \$ 3.85 | \$ 8,159.86 | |
| | 3" Aged bark, hand spread | 167 SY | | \$ 8.60 | \$ 1,433.33 | |

| Phase 2 Lenape Park Pavilion Plaza Area Improvements | | | | Total | | \$ 798,948 | |
|---|--|--------|-----------|------------------|---------------|-------------------|--|
| Site Preparation | | | | Sub Total | | \$ 8,096 | |
| | Demolish Bituminous Walkways | 316 | SY | \$ 6.30 | \$ 1,988.70 | | |
| | Stockpile Topsoil | 10,352 | SY | \$ 0.59 | \$ 6,107.75 | | |
| Parking Improvements / Turnaround | | | | Sub Total | | \$ 75,645 | |
| | Finish Grade | 1,810 | SY | \$ 2.93 | \$ 5,302.32 | | |
| | 6" PADOT 2A Aggregate Subbase | 1,810 | SY | \$ 6.70 | \$ 12,124.77 | | |
| | 4" Bituminous Pavement Base Course | 1,810 | SY | \$ 18.85 | \$ 34,112.22 | | |
| | 2" Bituminous Wearing Course | 1,810 | SY | \$ 9.60 | \$ 17,372.80 | | |
| | Striping - White 4" Wide | 26 | STALL | \$ 8.85 | \$ 230.10 | | |
| | ADA Parking Signage and Symbol | 3 | EA | \$ 345.00 | \$ 1,035.00 | | |
| | Concrete Tire/Wheel Stops | 78 | EA | \$ 70.10 | \$ 5,467.80 | | |
| Pavilion Plaza | | | | Sub Total | | \$ 40,594 | |
| | Finish Grade | 662 | SY | \$ 2.93 | \$ 1,938.68 | | |
| | 6" x 18" Concrete Curb | 980 | LF | \$ 18.77 | \$ 18,394.60 | | |
| | 12" Clean #57 Aggregate Subbase | 662 | SY | \$ 12.10 | \$ 8,006.17 | | |
| | Geotextile Fabric | 662 | SY | \$ 2.21 | \$ 1,462.28 | | |
| | 1" Setting Bed | 18 | CY | \$ 63.00 | \$ 1,157.92 | | |
| | Permeable Concrete Pavers | 662 | SF | \$ 6.00 | \$ 3,970.00 | | |
| | Concrete Stairs with Landing | 2 | EA | \$ 2,100.00 | \$ 4,200.00 | | |
| | Handrails at Stairs | 24 | LF | \$ 61.00 | \$ 1,464.00 | | |
| Pavilion / Restroom Plaza | | | | Sub Total | | \$ 258,886 | |
| | Finish Grade | 166 | SY | \$ 2.93 | \$ 485.08 | | |
| | 6" x 18" Concrete Curb | 253 | LF | \$ 18.77 | \$ 4,748.81 | | |
| | 12" Clean #57 Aggregate Subbase | 166 | SY | \$ 12.10 | \$ 2,003.22 | | |
| | Geotextile Fabric | 166 | SY | \$ 2.21 | \$ 365.88 | | |
| | 1" Setting Bed | 5 | CY | \$ 63.00 | \$ 289.72 | | |
| | Permeable Concrete Pavers | 166 | SF | \$ 6.00 | \$ 993.33 | | |
| | Restrooms and Pavilion Structure | 1 | Allowance | \$ 250,000.00 | \$ 250,000.00 | | |
| Skate Plaza | | | | Sub Total | | \$ 250,000 | |
| | Phase 1 | 1 | Allowance | \$ 250,000.00 | \$ 250,000.00 | | |
| Paved Walkways | | | | Sub Total | | \$ 54,537 | |
| | Finish Grade | 2,079 | SY | \$ 1.43 | \$ 2,973.13 | | |
| | 6" PADOT 2A Aggregate Subbase | 2,079 | SY | \$ 6.70 | \$ 13,930.04 | | |
| | 2" Pavement Bituminous Base Course | 2,079 | SY | \$ 9.55 | \$ 19,855.51 | | |
| | 1.5" Bituminous Wearing Course | 2,079 | SY | \$ 8.10 | \$ 16,840.80 | | |
| | Detectable Warning Mats | 32 | SF | \$ 21.50 | \$ 688.00 | | |
| | Crosswalk | 1 | EA | \$ 250.00 | \$ 250.00 | | |
| Site Furnishings | | | | Sub Total | | \$ 44,100 | |
| | Information Park Kiosk | 1 | LS | \$ 3,500.00 | \$ 3,500.00 | | |
| | Park Sign | 1 | LS | \$ 5,000.00 | \$ 5,000.00 | | |
| | Benches | 16 | EA | \$ 1,250.00 | \$ 20,000.00 | | |
| | Trash Receptacles | 6 | EA | \$ 1,000.00 | \$ 6,000.00 | | |
| | Picnic Tables | 8 | EA | \$ 1,200.00 | \$ 9,600.00 | | |
| General Site Plantings | | | | Sub Total | | \$ 67,089 | |
| | Place Stockpiled Topsoil | 128 | CY | \$ 6.35 | \$ 811.55 | | |
| | Deciduous Trees | 50 | EA | \$ 550.00 | \$ 27,500.00 | | |
| | Shrub / Herbaceous Plantings | 2,500 | SF | \$ 6.50 | \$ 16,250.00 | | |
| | Lawn Seeding with mulch and fertilizer | 5,231 | SY | \$ 3.85 | \$ 20,138.92 | | |
| | 3" Aged bark, hand spread | 278 | SY | \$ 8.60 | \$ 2,388.89 | | |

| Phase 3 | Regional Connections | | | Total | | \$ 845,382 |
|--|--|--------------|-----------|------------------|---------------|-------------------|
| Constitution Ave / Park Ave Sidewalk North | | 9,453 | LF | Sub Total | | \$ 280,974 |
| | Finish Grade | 5,252 | SY | \$ 1.43 | \$ 7,509.88 | |
| | 6" PADOT 2A Aggregate Subbase | 5,252 | SY | \$ 6.70 | \$ 35,186.17 | |
| | 4" Concrete Sidewalk | 47,265 | SF | \$ 4.63 | \$ 218,836.95 | |
| | Detectable Warning Mats | 340 | SF | \$ 21.50 | \$ 7,310.00 | |
| | Lawn Seeding with mulch and fertilizer | 3,151 | SY | \$ 3.85 | \$ 12,131.35 | |
| Walnut / S 4th Street Road Diet | | 2,010 | LF | Sub Total | | \$ 136,938 |
| | Demolish Bituminous Paving | 300 | SY | \$ 6.30 | \$ 1,890.00 | |
| | Disposable of Demolition Materials | 100 | CY | \$ 13.75 | \$ 1,375.00 | |
| | Concrete Curb | 1,662 | LF | \$ 9.85 | \$ 16,370.70 | |
| | Re-Stripe Road | 4,986 | LF | \$ 0.27 | \$ 1,346.22 | |
| | Guide Rail | 700 | LF | \$ 30.00 | \$ 21,000.00 | |
| | Guide Rail - End Sections | 2 | EA | \$ 167.00 | \$ 334.00 | |
| | 12" Clean #57 Aggregate Subbase | 300 | SY | \$ 12.10 | \$ 3,630.00 | |
| | 12" Soil & Amended | 100 | CY | \$ 65.00 | \$ 6,500.00 | |
| | BMP Plug Planting | 2,700 | SF | \$ 2.25 | \$ 6,075.00 | |
| | 15" HDPE Type S Piping Installed | 500 | LF | \$ 32.00 | \$ 16,000.00 | |
| | Bell inlet pipe raiser | 3 | EA | \$ 180.00 | \$ 540.00 | |
| | Level Spreader | 2 | EA | \$ 1,500.00 | \$ 3,000.00 | |
| | Finish Grade | 1,117 | SY | \$ 1.43 | \$ 1,596.83 | |
| | 6" PADOT 2A Aggregate Subbase | 1,117 | SY | \$ 6.70 | \$ 7,481.67 | |
| | 4" Concrete Sidewalk | 10,050 | SF | \$ 4.63 | \$ 46,531.50 | |
| | Detectable Warning Mats | 32 | SF | \$ 21.50 | \$ 688.00 | |
| | Lawn Seeding with mulch and fertilizer | 670 | SY | \$ 3.85 | \$ 2,579.50 | |
| Southern Perkiomen East Through Branch Trail | | 3,568 | LF | Sub Total | | \$ 358,809 |
| | Boardwalk | 8,768 | SF | \$ 15.85 | \$ 138,972.80 | |
| | Finish Grade | 3,985 | SY | \$ 2.93 | \$ 11,675.72 | |
| | 6" PADOT 2A Aggregate Subbase | 3,985 | SY | \$ 6.70 | \$ 26,698.76 | |
| | 2" Pavement Bituminous Base Course | 3,985 | SY | \$ 9.55 | \$ 38,055.69 | |
| | 1.5" Bituminous Wearing Course | 3,985 | SY | \$ 8.10 | \$ 32,277.60 | |
| | Lawn Seeding with mulch and fertilizer | 2,989 | SY | \$ 3.85 | \$ 11,506.37 | |
| | Riparian Restoration Plantings | 3,985 | SY | \$ 25.00 | \$ 99,622.22 | |
| Northern Bank Perkiomen To Druckenmiller Park | | 1,425 | LF | Sub Total | | \$ 68,660 |
| | Finish Grade | 1,267 | SY | \$ 2.93 | \$ 3,711.33 | |
| | 6" PADOT 2A Aggregate Subbase | 1,267 | SY | \$ 6.70 | \$ 8,486.67 | |
| | 2" Pavement Bituminous Base Course | 1,267 | SY | \$ 9.55 | \$ 12,096.67 | |
| | 1.5" Bituminous Wearing Course | 1,267 | SY | \$ 8.10 | \$ 10,260.00 | |
| | Lawn Seeding with mulch and fertilizer | 633 | SY | \$ 3.85 | \$ 2,438.33 | |
| | Riparian Restoration Plantings | 1,267 | SY | \$ 25.00 | \$ 31,666.67 | |

| Phase 4 Lenape Park Recreation Improvements | | | | Total | | \$ 1,068,774 | |
|--|---|-------|-------|------------------|---------------|---------------------|--|
| Site Preparation | | | | Sub Total | | \$ 31,626 | |
| | Site Preparation / Select Tree Removal | 5 | EA | \$ 600.00 | \$ 3,000.00 | | |
| | Demolish Bituminous Driveways | 2,630 | SY | \$ 6.30 | \$ 16,570.40 | | |
| | Disposable of Demolition Materials | 877 | CY | \$ 13.75 | \$ 12,055.19 | | |
| Parking Improvements | | | | 44,897 SF | | Sub Total | |
| | Finish Grade | 4,989 | SY | \$ 2.93 | \$ 14,616.47 | | |
| | Driveway 12x8 Box Culvert | 40 | LF | \$ 760.00 | \$ 30,400.00 | | |
| | 6" PADOT 2A Aggregate Subbase | 4,989 | SY | \$ 6.70 | \$ 33,423.32 | | |
| | 4" Bituminous Pavement Base Course | 4,989 | SY | \$ 18.85 | \$ 94,034.27 | | |
| | 2" Bituminous Wearing Course | 4,989 | SY | \$ 9.60 | \$ 47,890.13 | | |
| | Striping - White 4" Wide | 70 | STALL | \$ 8.85 | \$ 619.50 | | |
| | ADA Parking Signage and Symbol | 5 | EA | \$ 345.00 | \$ 1,725.00 | | |
| | Concrete Tire/Wheel Stops | 75 | EA | \$ 70.10 | \$ 5,257.50 | | |
| | Detectable Warning Mats | 144 | SF | \$ 21.50 | \$ 3,096.00 | | |
| | Crosswalk | 8 | EA | \$ 250.00 | \$ 2,000.00 | | |
| Paved Walkways | | | | 28,792 SF | | Sub Total | |
| | Finish Grade | 3,199 | SY | \$ 1.43 | \$ 4,574.73 | | |
| | 6" PADOT 2A Aggregate Subbase | 3,199 | SY | \$ 6.70 | \$ 21,434.04 | | |
| | 2" Pavement Bituminous Base Course | 3,199 | SY | \$ 9.55 | \$ 30,551.51 | | |
| | 1.5" Bituminous Wearing Course | 3,199 | SY | \$ 8.10 | \$ 25,912.80 | | |
| Boardwalk | | | | 28,792 SF | | Sub Total | |
| | Boardwalk | 9,760 | SF | \$ 15.85 | \$ 154,696.00 | | |
| Relocate Volleyball Court | | | | 4,161 SF | | Sub Total | |
| | Finish Grade | 462 | SY | \$ 2.93 | \$ 1,354.64 | | |
| | 6" Clean #57 Aggregate Subbase | 462 | SY | \$ 6.05 | \$ 2,797.12 | | |
| | Geotextile Fabric | 462 | SY | \$ 2.21 | \$ 1,021.76 | | |
| | 10" Play Sand | 128 | CY | \$ 55.00 | \$ 7,063.43 | | |
| | Team Benches | 2 | EA | \$ 850.00 | \$ 1,700.00 | | |
| | 4' High 3 Rail Cedar Split Rail Fence w/ Mesh | 268 | LF | \$ 30.00 | \$ 8,040.00 | | |
| Intermediate Baseball 50/70 Field Rehab | | | | 56,336 SF | | Sub Total | |
| | Finish Grade | 6,260 | SY | \$ 2.93 | \$ 18,340.50 | | |
| | 4" Infield- Clay Brick/Clay Mix | 94 | CY | \$ 80.00 | \$ 7,489.38 | | |
| | Athletic Seeding - Field and Surrounding Area | 46 | MSF | \$ 68.50 | \$ 3,151.00 | | |
| | Field Fencing | 365 | LF | \$ 12.65 | \$ 4,617.25 | | |
| Softball Field Re-orientation | | | | 56,336 SF | | Sub Total | |
| | Finish Grade | 6,260 | SY | \$ 2.93 | \$ 18,340.50 | | |
| | 4" Infield- Clay Brick/Clay Mix | 94 | CY | \$ 80.00 | \$ 7,489.38 | | |
| | Athletic Seeding - Field and Surrounding Area | 46 | MSF | \$ 68.50 | \$ 3,151.00 | | |
| | Field Backstop | 1 | EA | \$ 6,000.00 | \$ 6,000.00 | | |
| | Fencing at benches 10' high | 60 | LF | \$ 40.00 | \$ 2,400.00 | | |
| | Team Benches | 2 | EA | \$ 850.00 | \$ 1,700.00 | | |

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|---------------------------|---|------------------|------------------|---------------|-------------------|
| T-ball Field Rehab | | 8,600 SF | Sub Total | | \$ 21,754 |
| | Finish Grade | 956 SY | \$ 2.93 | \$ 2,799.78 | |
| | 4" Infield- Clay Brick/Clay Mix | 78 CY | \$ 80.00 | \$ 6,238.66 | |
| | Athletic Seeding - Field and Surrounding Area | 38 MSF | \$ 68.50 | \$ 2,615.33 | |
| | Field Backstop | 1 EA | \$ 6,000.00 | \$ 6,000.00 | |
| | Fencing at benches 10' high | 60 LF | \$ 40.00 | \$ 2,400.00 | |
| | Team Benches | 2 EA | \$ 850.00 | \$ 1,700.00 | |
| Play Area | | 5,239 SF | Sub Total | | \$ 216,431 |
| | Finish Grade | 582 SY | \$ 2.93 | \$ 1,705.59 | |
| | Playground Equipment (Allowance) | 1 Allowance | \$ 75,000.00 | \$ 75,000.00 | |
| | Poured in Place Play Surface | 5,239 SF | \$ 25.00 | \$ 130,975.00 | |
| | Benches | 7 EA | \$ 1,250.00 | \$ 8,750.00 | |
| Dog Park Expansion | | 92,058 SF | Sub Total | | \$ 208,477 |
| | Fill Material (6" average) | 1,705 CY | \$ 45.00 | \$ 76,715.00 | |
| | Finish Grade | 10,229 SY | \$ 2.93 | \$ 29,969.99 | |
| | 4' High 3 Rail Cedar Split Rail Fence w/ Mesh | 1,554 LF | \$ 30.00 | \$ 46,620.00 | |
| | 4' High Gates with Mesh | 4 EA | \$ 500.00 | \$ 2,000.00 | |
| | Salvage & Reinstall Sit Furnishings | 1 Allowance | \$ 10,000.00 | \$ 10,000.00 | |
| | Lawn Seeding with mulch and fertilizer | 9,951 SY | \$ 3.85 | \$ 38,310.92 | |
| | 6" PADOT 2A Aggregate at entrance | 278 SY | \$ 6.70 | \$ 1,861.11 | |
| | 6" x 18" Concrete Curb | 108 LF | \$ 18.77 | \$ 2,027.16 | |
| | 12" Clean #57 Aggregate Subbase | 44 SY | \$ 12.10 | \$ 533.74 | |
| | Geotextile Fabric | 44 SY | \$ 2.21 | \$ 97.49 | |
| | 1" Setting Bed | 1 CY | \$ 63.00 | \$ 77.19 | |
| | Permeable Concrete Pavers | 44 SF | \$ 6.00 | \$ 264.67 | |
| Site Furnishings | | 2,549 SF | Sub Total | | \$ 25,600 |
| | Benches | 8 EA | \$ 1,250.00 | \$ 10,000.00 | |
| | Trash Receptacles | 6 EA | \$ 1,000.00 | \$ 6,000.00 | |
| | Picnic Tables | 8 EA | \$ 1,200.00 | \$ 9,600.00 | |

| Phase 5 Menlo Park Improvements | | | | Total | | \$ 633,747 | |
|--|--|---------------|-----------|------------------|--------------|-------------------|--|
| Site Preparation | | | | Sub Total | | \$ 3,000 | |
| | Site Preparation / Select Tree Removal | 5 | EA | \$ 600.00 | \$ 3,000.00 | | |
| Roadway Bump Outs | | | | Sub Total | | \$ 65,591 | |
| | Demolish Bituminous Paving | 496 | SY | \$ 6.30 | \$ 3,125.50 | | |
| | Disposable of Demolition Materials | 18 | CY | \$ 13.75 | \$ 252.65 | | |
| | Concrete Curb | 338 | LF | \$ 9.85 | \$ 3,329.30 | | |
| | Re-Stripe Road | 2,300 | LF | \$ 0.27 | \$ 621.00 | | |
| | Striping - White 4" Wide | 19 | STALL | \$ 8.85 | \$ 168.15 | | |
| | 12" Clean #57 Aggregate Subbase | 496 | SY | \$ 12.10 | \$ 6,002.94 | | |
| | 12" Soil & Amended | 165 | CY | \$ 65.00 | \$ 10,749.07 | | |
| | BMP Plug Planting | 4,465 | SF | \$ 2.25 | \$ 10,046.25 | | |
| | 15" HDPE Type S Piping Installed | 700 | LF | \$ 32.00 | \$ 22,400.00 | | |
| | Bell inlet pipe raiser | 3 | EA | \$ 180.00 | \$ 540.00 | | |
| | Level Spreader | 1 | EA | \$ 1,500.00 | \$ 1,500.00 | | |
| | Finish Grade | 100 | SY | \$ 1.43 | \$ 143.00 | | |
| | 6" PADOT 2A Aggregate Subbase | 100 | SY | \$ 6.70 | \$ 670.00 | | |
| | 4" Concrete Sidewalk | 900 | SF | \$ 4.63 | \$ 4,167.00 | | |
| | Detectable Warning Mats | 64 | SF | \$ 21.50 | \$ 1,376.00 | | |
| | Crosswalk | 2 | EA | \$ 250.00 | \$ 500.00 | | |
| New Library Lot Parking | | 10,280 | SF | Sub Total | | \$ 45,706 | |
| | Finish Grade | 1,142 | SY | \$ 2.93 | \$ 3,346.71 | | |
| | 6" PADOT 2A Aggregate Subbase | 1,142 | SY | \$ 6.70 | \$ 7,652.89 | | |
| | 4" Bituminous Pavement Base Course | 1,142 | SY | \$ 18.85 | \$ 21,530.89 | | |
| | 2" Bituminous Wearing Course | 1,142 | SY | \$ 9.60 | \$ 10,965.33 | | |
| | Striping - White 4" Wide | 28 | STALL | \$ 8.85 | \$ 247.80 | | |
| | Concrete Tire/Wheel Stops | 28 | EA | \$ 70.10 | \$ 1,962.80 | | |
| New Parking at Carousel | | 8,559 | SF | Sub Total | | \$ 67,749 | |
| | Finish Grade | 951 | SY | \$ 2.93 | \$ 2,786.43 | | |
| | Driveway 12x8 Box Culvert | 40 | LF | \$ 760.00 | \$ 30,400.00 | | |
| | 6" PADOT 2A Aggregate Subbase | 951 | SY | \$ 6.70 | \$ 6,371.70 | | |
| | 4" Bituminous Pavement Base Course | 951 | SY | \$ 18.85 | \$ 17,926.35 | | |
| | 2" Bituminous Wearing Course | 951 | SY | \$ 9.60 | \$ 9,129.60 | | |
| | Striping - White 4" Wide | 10 | STALL | \$ 8.85 | \$ 88.50 | | |
| | ADA Parking Signage and Symbol | 1 | EA | \$ 345.00 | \$ 345.00 | | |
| | Concrete Tire/Wheel Stops | 10 | EA | \$ 70.10 | \$ 701.00 | | |
| Re-Stripe Parking | | 8,559 | SF | Sub Total | | \$ 4,070 | |
| | Remove Existing Lines | 1 | Allowance | \$ 500.00 | \$ 500.00 | | |
| | Striping - White 4" Wide | 55 | STALL | \$ 8.85 | \$ 486.75 | | |
| | ADA Parking Signage and Symbol | 3 | EA | \$ 345.00 | \$ 1,035.00 | | |
| | Detectable Warning Mats | 72 | SF | \$ 21.50 | \$ 1,548.00 | | |
| | Crosswalk | 2 | EA | \$ 250.00 | \$ 500.00 | | |

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|--------------------------|--|------------------|------------------|---------------|-------------------|
| Carousel Plaza | | 1,634 SF | Sub Total | | \$ 9,962 |
| | Finish Grade | 182 SY | \$ 2.93 | \$ 531.96 | |
| | 6" x 18" Concrete Curb | 289 LF | \$ 18.77 | \$ 5,424.53 | |
| | 12" Clean #57 Aggregate Subbase | 182 SY | \$ 12.10 | \$ 2,196.82 | |
| | Geotextile Fabric | 182 SY | \$ 2.21 | \$ 401.24 | |
| | 1" Setting Bed | 5 CY | \$ 63.00 | \$ 317.72 | |
| | Permeable Concrete Pavers | 182 SF | \$ 6.00 | \$ 1,089.33 | |
| Restroom Plaza | | 317 SF | Sub Total | | \$ 2,476 |
| | Finish Grade | 35 SY | \$ 2.93 | \$ 103.20 | |
| | 6" x 18" Concrete Curb | 85 LF | \$ 18.77 | \$ 1,595.45 | |
| | 12" Clean #57 Aggregate Subbase | 35 SY | \$ 12.10 | \$ 426.19 | |
| | Geotextile Fabric | 35 SY | \$ 2.21 | \$ 77.84 | |
| | 1" Setting Bed | 1 CY | \$ 63.00 | \$ 61.64 | |
| | Permeable Concrete Pavers | 35 SF | \$ 6.00 | \$ 211.33 | |
| Pavilion Plaza | | 2,274 SF | Sub Total | | \$ 10,350 |
| | Finish Grade | 253 SY | \$ 2.93 | \$ 740.31 | |
| | 6" x 18" Concrete Curb | 215 LF | \$ 18.77 | \$ 4,035.55 | |
| | 12" Clean #57 Aggregate Subbase | 253 SY | \$ 12.10 | \$ 3,057.27 | |
| | Geotextile Fabric | 253 SY | \$ 2.21 | \$ 558.39 | |
| | 1" Setting Bed | 7 CY | \$ 63.00 | \$ 442.17 | |
| | Permeable Concrete Pavers | 253 SF | \$ 6.00 | \$ 1,516.00 | |
| Paved Walkways | | 7,710 SF | Sub Total | | \$ 22,085 |
| | Finish Grade | 857 SY | \$ 1.43 | \$ 1,225.03 | |
| | 6" PADOT 2A Aggregate Subbase | 857 SY | \$ 6.70 | \$ 5,739.67 | |
| | 2" Pavement Bituminous Base Course | 857 SY | \$ 9.55 | \$ 8,181.17 | |
| | 1.5" Bituminous Wearing Course | 857 SY | \$ 8.10 | \$ 6,939.00 | |
| Play Area | | 8,455 SF | Sub Total | | \$ 285,034 |
| | Finish Grade | 939 SY | \$ 2.93 | \$ 2,752.57 | |
| | Playground Equipment (Allowance) | 1 Allowance | \$ 115,000.00 | \$ 115,000.00 | |
| | Poured in Place Play Surface | 6,341 SF | \$ 25.00 | \$ 158,531.25 | |
| | Benches | 7 EA | \$ 1,250.00 | \$ 8,750.00 | |
| Site Furnishings | | 2,549 SF | Sub Total | | \$ 25,600 |
| | Benches | 8 EA | \$ 1,250.00 | \$ 10,000.00 | |
| | Trash Receptacles | 6 EA | \$ 1,000.00 | \$ 6,000.00 | |
| | Picnic Tables | 8 EA | \$ 1,200.00 | \$ 9,600.00 | |
| Stormwater BMP | | 10,000 SF | Sub Total | | \$ 17,143 |
| | Soil Amended | 185 CY | \$ 65.00 | \$ 12,037.04 | |
| | Riparian Meadow Planting | 5 AC | \$ 10.00 | \$ 45.91 | |
| | 15" HDPE Type S Piping Installed | 100 LF | \$ 32.00 | \$ 3,200.00 | |
| | Bell inlet pipe raiser | 2 EA | \$ 180.00 | \$ 360.00 | |
| | Level Spreader | 1 EA | \$ 1,500.00 | \$ 1,500.00 | |
| General Plantings | | 49,532 SF | Sub Total | | \$ 74,983 |
| | Deciduous Trees | 30 EA | \$ 550.00 | \$ 16,500.00 | |
| | Shrub / Herbaceous Plantings | 1,376 SY | \$ 25.00 | \$ 34,397.22 | |
| | 4" Topsoil | 153 CY | \$ 45.00 | \$ 6,879.44 | |
| | Lawn Seeding with mulch and fertilizer | 4,128 SY | \$ 3.85 | \$ 15,891.52 | |
| | 3" Aged bark, hand spread | 153 SY | \$ 8.60 | \$ 1,314.74 | |

| Phase 6 Structure Improvements | | | | Total | | | | \$ 81,923 | |
|---|--|------------------|-------|------------------|--------------|--|--|-------------------|--|
| Carousel | | 11,698 SF | | Sub Total | | | | \$ 43,520 | |
| | Building | 5,120 | SF | \$ 8.50 | \$ 43,520.00 | | | | |
| Pavilions | | 11,698 SF | | Sub Total | | | | \$ 21,573 | |
| | Menlo Park | 4,194 | SF | \$ 4.50 | \$ 18,873.00 | | | | |
| | Lenape Park | 600 | SF | \$ 4.50 | \$ 2,700.00 | | | | |
| Covered Bridge | | 11,698 SF | | Sub Total | | | | \$ 16,830 | |
| | Bridge | 1,980 | SF | \$ 8.50 | \$ 16,830.00 | | | | |
| Phase 7 Sellersville Improvements | | | | Total | | | | \$ 136,034 | |
| Walnut Street Lot Parking Improvements | | 11,698 SF | | Sub Total | | | | \$ 64,194 | |
| | Finish Grade | 1,300 | SY | \$ 2.93 | \$ 3,808.35 | | | | |
| | 6" PADOT 2A Aggregate Subbase | 1,300 | SY | \$ 6.70 | \$ 8,708.51 | | | | |
| | 4" Bituminous Pavement Base Course | 1,300 | SY | \$ 18.85 | \$ 24,500.81 | | | | |
| | 2" Bituminous Wearing Course | 1,300 | SY | \$ 9.60 | \$ 12,477.87 | | | | |
| | Striping - White 4" Wide | 27 | STALL | \$ 8.85 | \$ 238.95 | | | | |
| | Concrete Tire/Wheel Stops | 27 | EA | \$ 70.10 | \$ 1,892.70 | | | | |
| | ADA Parking Signage and Symbol | 2 | EA | \$ 345.00 | \$ 690.00 | | | | |
| | Detectable Warning Mats | 64 | SF | \$ 21.50 | \$ 1,376.00 | | | | |
| | Crosswalk | 2 | EA | \$ 250.00 | \$ 500.00 | | | | |
| | 4" Topsoil | 126 | CY | \$ 45.00 | \$ 5,650.00 | | | | |
| | Lawn Seeding with mulch and fertilizer | 1,130 | SY | \$ 3.85 | \$ 4,350.50 | | | | |
| Paved Walkways at Walnut Parking Area | | 258 SF | | Sub Total | | | | \$ 739 | |
| | Finish Grade | 29 | SY | \$ 1.43 | \$ 40.99 | | | | |
| | 6" PADOT 2A Aggregate Subbase | 29 | SY | \$ 6.70 | \$ 192.07 | | | | |
| | 2" Pavement Bituminous Base Course | 29 | SY | \$ 9.55 | \$ 273.77 | | | | |
| | 1.5" Bituminous Wearing Course | 29 | SY | \$ 8.10 | \$ 232.20 | | | | |
| Memorial Oval Trail | | 258 SF | | Sub Total | | | | \$ 19,249 | |
| | Finish Grade | 747 | SY | \$ 1.43 | \$ 1,067.73 | | | | |
| | 6" PADOT 2A Aggregate Subbase | 747 | SY | \$ 6.70 | \$ 5,002.67 | | | | |
| | 2" Pavement Bituminous Base Course | 747 | SY | \$ 9.55 | \$ 7,130.67 | | | | |
| | 1.5" Bituminous Wearing Course | 747 | SY | \$ 8.10 | \$ 6,048.00 | | | | |
| Steps and Plaza from Main Street | | 3,850 SF | | Sub Total | | | | \$ 51,852 | |
| | Finish Grade | 428 | SY | \$ 2.93 | \$ 1,253.39 | | | | |
| | 6" x 18" Concrete Curb | 157 | LF | \$ 18.77 | \$ 2,946.89 | | | | |
| | 12" Clean #57 Aggregate Subbase | 93 | SY | \$ 12.10 | \$ 1,126.64 | | | | |
| | Geotextile Fabric | 93 | SY | \$ 2.21 | \$ 205.78 | | | | |
| | 1" Setting Bed | 3 | CY | \$ 63.00 | \$ 162.94 | | | | |
| | Permeable Concrete Pavers | 93 | SF | \$ 6.00 | \$ 558.67 | | | | |
| | Concrete Stairs with Landing | 2 | EA | \$ 8,400.00 | \$ 16,800.00 | | | | |
| | Handrails at Stairs and Ramp | 260 | LF | \$ 61.00 | \$ 15,860.00 | | | | |
| | Concrete Ramp | 500 | SF | \$ 24.00 | \$ 12,000.00 | | | | |
| | Detectable Warning Mats | 32 | SF | \$ 21.50 | \$ 688.00 | | | | |
| | Crosswalk | 1 | EA | \$ 250.00 | \$ 250.00 | | | | |