SANGREE PARK MASTER PLAN

Ross Township

March 2018

PA DCNR Project BRC-TAG-21-140

pennsylvania
DEPARTMENT OF CONSERVATION
AND NATURAL RESOURCES

PASHEK MTR

RESOLUTION NO. 2278

ROSS TOWNSHIP

ALLEGHENY COUNTY

A RESOLUTION OF THE BOARD OF COMMISSIONERS OF THE TOWNSHIP OF ROSS, COUNTY OF ALLEGHENY AND COMMONWEALTH OF PENNSYLVANIA CLOSING OUT COMMUNITY CONSERVATION PARTNERSHIPS GRANT PROJECT BRC-TAG-21-140.

WHEREAS, the Municipality of Ross Township has prepared a Comprehensive Parks, Recreation and Open Space Plan for Ross Township, and

WHEREAS, the purpose of the Plan is to serve as a tool for addressing the current and future recreation needs of Township residents and to establish a framework for the decisions that must be made in order to provide adequate recreation facilities and programs, and,

WHEREAS, the Plan was financed in part by the Community Conservation Partnerships Program grant under the administration of the Pennsylvania Department of Conservation and Natural Resources, Bureau of Recreation and Conservation, under Contract Number BRC-TAG-21-140.

NOW, THEREFORE, BE IT HEREBY RESOLVED by the Board of Commissioners of the Township of Ross as follows:

a. The project was completed in accordance with the Grant Agreement.
b. All project expenditures have been made and were in accordance with the Grant Agreement.
c. The Plan and related materials are acceptable to the Municipality of Ross Township.
d. The Plan and related materials will be used to guide future recreation and conservation decisions.

ADOPTED BY THE BOARD OF COMMISSIONERS OF ROSS TOWNSHIP, THIS *19th* DAY OF *MARCH, 2018*

ATTEST

Douglas Sample,
Township Manager

ROSS TOWNSHIP

By: _____
Stephen L. Korbel, President
Board of Commissioners

Acknowledgements

Township of Ross Board of Commissioners

Jeremy Shaffer, President
David Mikec, Vice President
Rick Avon
Jack Betkowski
Daniel DeMarco
Steve Korbel
Lana Mazur
Pat Mullin
Grace Stanko

Ross Liaison

Eloise Peet, Director of Department of Parks & Recreation

Master Plan Steering Committee

Bill Aguglia, North Hills Athletic Association (Girls Softball) Vice-Chair
Michelle Cukauskas, Kinvara Civic Association
Karen Heid, White Oak Heights Women's Club
Lana Mazur, Ross Township Board of Commissioners, Recreation Chair
Eloise Peet, Ross Township Parks & Recreation
Steve Korbel, Ross Township Board of Commissioners, Ward 2 Commissioner
Kathy Westman, Northern Area Environmental Council Board
Ed Wielgus, North Hills School Board President

Consultant

John O. Buerkle Jr., RLA, AICP
Elaine Kramer, Landscape Designer/Planner

PENNSYLVANIA JOHN O. BUERKLE JR. REGISTERED LANDSCAPE ARCHITECT

This Plan was prepared by a Landscape Architect licensed to practice in the State of Pennsylvania. The Maintenance and Operations portions of the reports were prepared by a Recreation Practitioner as defined by the Department of Conservation and Natural Resources.

PA Department of Conservation & Natural Resources Keystone

This project was financed in part by a grant from the Keystone Recreation, Park and Conservation Fund under the administration of the Pennsylvania Department of Conservation and Natural Resources, Bureau of Recreation and Conservation.

Contents

MASTER PLAN UPDATE

After the completion of the Sangree Park Master Plan in September 2017, the Ross Township Board of Commissioners voted and deemed a spray area would not be financially feasible for the Township to include in Sangree Park. Therefore, in March 2018 the Township Commissioners requested the master plan be revised by removing the proposed spray area, removing the proposed restroom building associated with the spray park, and reducing the parking to reflect the elimination of the spray area.

Therefore, this master plan update includes a revised master site development plan, revised opinions of probable cost, and a revised phasing plan to reflect these changes. Following this revision chapter is the original master plan report.

Park Master Plan

Per the DCNR grant application and funding, the planning work included developing a master site development plan for Sangree Park and a study of the feasibility of including a water play area. Key recommendations for the park:

- Rehabilitate the woodlands and stream.
- Add a perimeter walking trail loop.
- Provide play areas nearby for ages 2-5 and 5-12. These can also reflect a woodland, nature-play and rustic theme.
- Relocate the basketball court to Sangree Road frontage area to separate from the younger child areas of the park. Provide full-court basketball, per resident preference.
- Add a green-roof shelter for picnics.
- Provide sufficient parking.
- Incorporate appropriate plantings to create edges, boundaries and screens.

Costs and Phasing

Our opinion of probable construction costs, on page REV4, projects the full renovation of Sangree Park as shown on the revised master site development plan, on Page REV2, would cost approximately $2,915,000 in 2018 dollars. Based on the logical sequence of construction and the Township's priorities for the proposed improvements we propose the improvements be implemented in four phases, as outlined in the Cost by Phase table on page REV3.


BOARDWALK
0.5 MILE PERIMETER WALKING LOOP
20' BACKSTOP FENCE
PLAYER BENCH
REHABILITATED WET WOODLAND
225'
BLEACHERS
225'
200'
REHABILITATED WOODLAND
BLEACHERS
OUTFIELD FENCE AND MESH TOTAL 20' HEIGHT
RAINGARDEN
36-SEAT GREEN ROOF PICNIC SHELTER WITH PLAZA AREA
WET-DRY STREAMBED
RAINGARDEN
FLAG OR BANNER
36 PARKING SPACES (3 ADA)
PLAY AREA AGES 2-5
SEATING
SANGREE ROAD
NEW VEGETATIVE SCREEN
OPEN GREEN SPACE
PLAY AREA AGES 5-12
PARKING LOT DRAINS TO SWALE
SWINGS
NEW SHADE TREES LINING PATHWAY AND PARKING LOT
LOW-IMPACT STREAM ACCESS
GRAVEL DRIVE
4 PARKING SPACES (2 ADA)
RAINGARDEN
STREAM BANK RECONSTRUCTION CREATES POOLS AND RIFFLES TO SLOW THE FLOW
REGULATION BASKETBALL FENCE, SEATING
BRIDGE
NEW SECONDARY PARK ENTRANCE, SIGN
Sangree Park Master Plan (Revised 2018)
PASHEK MTR

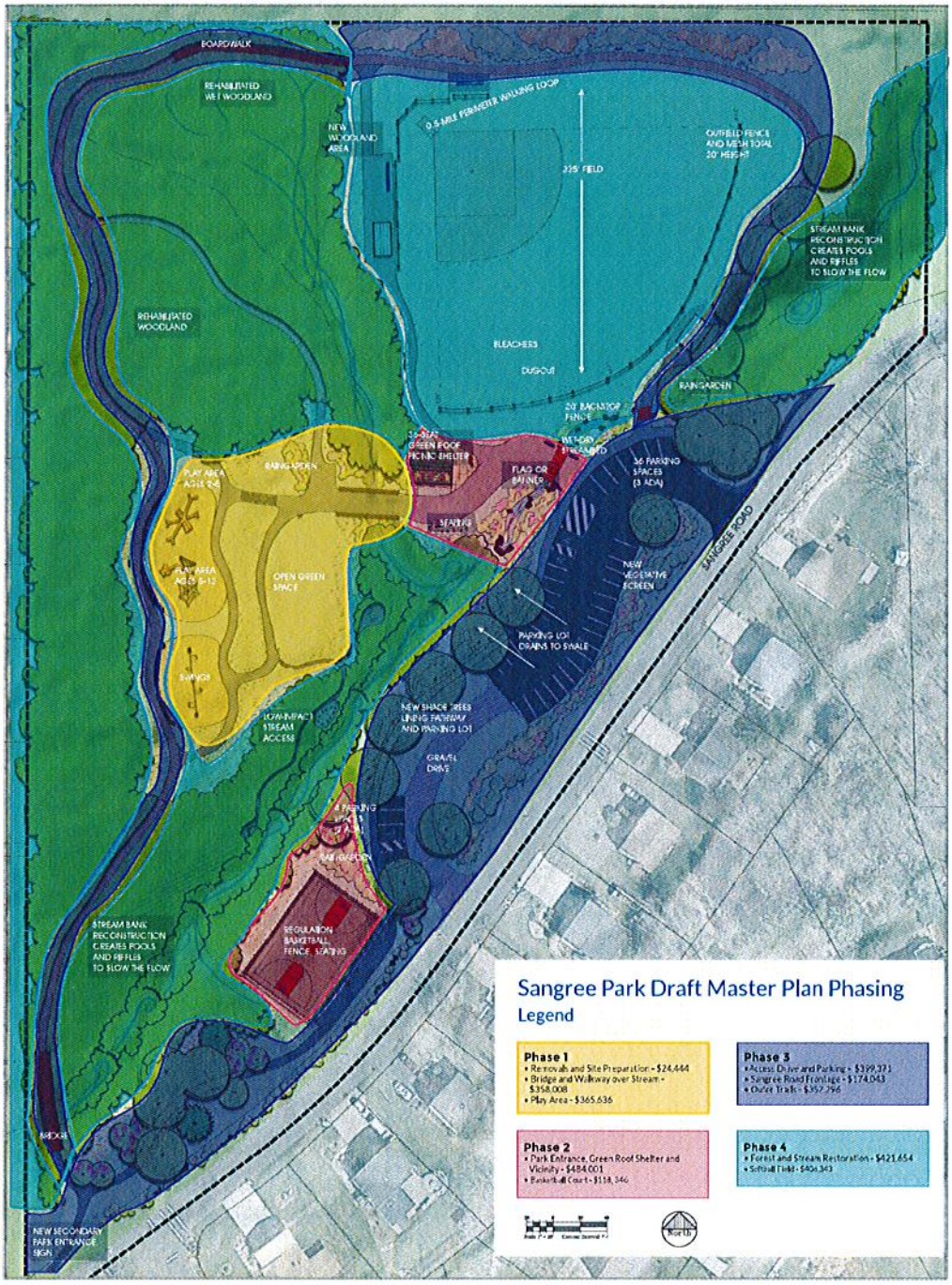
REV2

Sangree Park Costs by Phase

PASHEK MTR

3/14/2018

Master Plan Component	Cost	Phase I	Phase II	Phase III	Phase IV
Removals and Site Preparation	$ 24,444	$ 24,444			
Land Bridge over Stream	$ 253,008	$ 253,008			
Access Drive and Parking	$ 339,956			$ 339,956	
Sangree Road Frontage	$ 174,043			$ 174,043	
Park Entrance, Green Roof Shelter and Vicinity	$ 417,467		$ 417,467		
Ballfield	$ 430,009				$ 430,009
Play Area	$ 382,207	$ 382,207			
Basketball Court	$ 118,346		$ 118,346		
Forest and Stream Restoration	$ 421,654				$ 421,654
Outer Trails	$ 353,480			$ 353,480	
TOTAL	**$ 2,914,614**	**$ 659,659**	**$ 535,813**	**$ 867,479**	**$ 851,663**



REV3

Sangree Park

Opinion of Probable Construction Costs
3/14/2018

PASHEK MTR

Item		Unit	Unit Cost	Total
Forest and Stream Restoration				
Cut and salvage dead trees for streambed or other uses on-site	1	LS	$15,000	$ 15,000
STREAM				
Permitting - PA DEP & U.S. Army Corps of Engineers	1	LS	$50,000	$ 50,000
Bank layback to 3:1 max				
1. Topsoil removal (1,248 lf x 6'wide x 0.5' deep)	139	CY	$30	$ 4,160
2. Excavation (1248 lf x 6' wide @ 3:1 and 1'deep	278	CY	$30	$ 8,340
3. Respread topsoil	139	CY	$20	$ 2,780
4. Seed and mulch all disturbed areas	3,698	SY	$7	$ 25,884
5. NAG P3000 erosion blanket or equivalent (1248 lf x 6' wide)	7,488	SF	$5	$ 37,440
Rock cross vane				
1. Stone ($35/ton and 6 tons per structure)	8	EA	$210	$ 1,680
2. Trench excavation ($200/hour and 3 hours/structure)	8	EA	$600	$ 4,800
3. Construction of vanes ($200/hour and 4 hours/structure)	8	EA	$800	$ 6,400
4. Erosion control (pump around) ($50/hour, 7 hrs/structure)	8	EA	$350	$ 2,800
J-hook rock vanes				
1. Stone ($35/ton and 3 tons per structure)	15	EA	$105	$ 1,575
2. Trench excavation ($200/hour and 2 hours/structure	15	EA	$400	$ 6,000
3. Construction of vanes ($200/hour and 2 hours/structure	15	EA	$400	$ 6,000
4. Erosion control (pump around) ($200/hour and 2	15	EA	$400	$ 6,000
5. Erosion control devices	1,248	FT	$20	$ 24,960
Construction management				
Construction survey (create file and field stake out)	12	Hours	$135	$ 1,620
Supervision of grading, structure placement, plantings	40	Hours	$135	$ 5,400
Zone 1 planting				
Reach 1 (480 LF x 2' high bank (6 lf) x 2 sides = 5,760 sf				
Reach 2 (60 LF x 2' high bank (6 lf) x 2 sides = 720 sf				
Reach 3 (380 LF x 2' high bank (6 lf) x 2 sides = 4,560 sf				
Reach 4 (120 LF x 2' high bank (6 lf) x 2 sides = 1,440 sf				
Zone 1 planting area total 12,480 sf (24" saplings @ 2' centers)	3,120	EA	$20	$ 62,400
Zone 2 planting				
Reach 1 (480 LF x 10'wide) x 2 sides = 9,600 sf				
Reach 2 (60 LF x 10'wide) x 2 sides = 1,200 sf				
Reach 3 (380 LF x 10'wide) x 2 sides = 7,600 sf				
Reach 4 (120 LF x 10'wide) x 2 sides = 2,400 sf				
Zone 2 planting area total 20,800 (36" banded saplings @ 5'	832	EA	$25	$ 20,800
STREAM RESTORATION SUBTOTAL				$ 294,039
FOREST				
Forest reseeding - (172,150-39,320-20,800=12,030 SF)	1,337	SY	$7	$ 9,357
Trees (1.5" cal. @ 15' centers)	55	EA	$350	$ 19,250
Saplings and shrubs (36" banded @ 5' centers)	480	EA	$25	$ 12,000
FOREST RESTORATION SUBTOTAL				$ 40,607

FOREST AND STREAM RESTORATION SUBTOTAL	***$ 334,646***
Contingency (10%)	$ 33,465
Mobilization and Stakeout (6%)	$ 20,079
Design, Construction Documentation & Construction Admin. (10%)	$ 33,465
FOREST AND STREAM RESTORATION TOTAL	***$ 421,654***

REV4

Item		Unit	Unit Cost	Total
Removals and Site Preparation				
Site clearing	1	LS	$7,500	$ 7,500
Removal of existing shelter	1	LS	$2,500	$ 2,500
Basketball court removal	3,600	SF	$2.50	$ 9,000
Baseball Field Fence Removal	200	LF	$2	$ 400
Removals and Site Preparation Subtotal				$ 19,400
Contingency (10%)				$ 1,940
Mobilization and Stakeout (6%)				$ 1,164
Design, Construction Documentation & Construction Admin. (10%)				$ 1,940
REMOVALS AND SITE PREPARATION TOTAL				$ 24,444
Access Drive and Parking				
Earthwork	1	LS	$50,000	$ 50,000
Gravel drive	3,915	SF	$3	$ 11,745
Bituminous paving	1,625	SY	$60	$ 97,500
Wheel stops	40	EA	$200	$ 8,000
Pavement striping	1	LS	$2,500	$ 2,500
Accessible pavement markings and signage	5	EA	$400	$ 2,000
Concrete walkways	339	SY	$125	$ 42,361
Stormwater management	1	LS	$30,000	$ 30,000
Park sign	1	EA	$3,500	$ 3,500
Trees	18	EA	$400	$ 7,200
Perennials/groundcover	1	LS	$15,000	$ 15,000
Access Drive and Parking Subtotal				$ 269,806
Contingency (10%)				$ 26,981
Mobilization and Stakeout (6%)				$ 16,188
Design, Construction Documentation & Construction Admin. (10%)				$ 26,981
ACCESS DRIVE AND PARKING TOTAL				$ 339,956

REV5

Item		Unit	Unit Cost	Total
Sangree Road Frontage				
Earthwork	1	LS	$10,000	$ 10,000
Walkway	447	SY	$110	$ 49,133
Seeding	2,274	SY	$7	$ 15,921
Trees	34	EA	$400	$ 13,600
Shrubs @ 4'O.C.	55	EA	$65	$ 3,575
Perennials/Groundcover	1	LS	$25,000	$ 25,000
Boulders	30	EA	$200	$ 6,000
Park sign at SW corner	1	EA	$3,500	$ 3,500
Fence - split rail	285	LF	$40	$ 11,400
Sangree Road Frontage Subtotal				$ 138,129
Contingency (10%)				$ 13,813
Mobilization and Stakeout (6%)				$ 8,288
Design, Construction Documentation & Construction Admin. (10%)				$ 13,813
SANGREE ROAD FRONTAGE TOTAL				$ 174,043
Land Bridge over Stream				
Bridge over stream/culvert (vehicular)	1,004	SF	$200	$ 200,800
Bridge and Walkway over Stream Subtotal				$ 200,800
Contingency (10%)				$ 20,080
Mobilization and Stakeout (6%)				$ 12,048
Design, Construction Documentation & Construction Admin. (10%)				$ 20,080
Land Bridge over Stream TOTAL				$ 253,008
Park Entrance, Green Roof Shelter and Vicinity				
Concrete pad for shelter	99	SY	$110	$ 10,890
Retaining wall for shelter	420	SFF	$90	$ 37,800
Fence for shelter	75	LF	$100	$ 7,500
Green roof shelter	1	LS	$60,000	$ 60,000
Picnic tables	6	EA	$2,000	$ 12,000
Green roof planting system	1	LS	$8,000	$ 8,000
Pervious pavers plaza	60	SY	$100	$ 5,967
Electric service and lighting	1	LS	$15,000	$ 15,000
Stream view seating area benches	3	EA	$2,000	$ 6,000
Stream view seating area fence - split rail	35	LF	$40	$ 1,400
Flag pole	1	LS	$3,000	$ 3,000
Bike racks	3	EA	$500	$ 1,500
16' Walkways (reinforced for vehicular)	522	SY	$150	$ 78,333
Walkway grate over wet-dry streambed (vehicular)	1	EA	$5,000	$ 5,000
Wet-dry stream bed	250	SY	$200	$ 50,000
Wet-dry stream bed boulders	50	EA	$200	$ 10,000
Wet-dry stream plantings	1	LS	$4,000	$ 4,000
Bollards	3	EA	$1,200	$ 3,600
Entrance benches	4	EA	$2,500	$ 10,000
Seeding	190	SY	$7	$ 1,333

Park Entrance, Green Roof Shelter and Vicinity	$	247,990
Contingency (10%)	$	24,799
Mobilization and Stakeout (6%)	$	14,879
Design, Construction Documentation & Construction Admin. (10%)	$	24,799
PARK ENTRANCE, GREEN ROOF SHELTER AND VICINTY TOTAL	$	312,467

REV6

Item		Unit	Unit Cost	Total
Ballfield				
Laser Grading	1	EA	$25,000	$ 25,000
Backstop fence, black vinyl-coated	72	LF	$100	$ 7,200
Foul Line fencing - 8' tall, black vinyl	100	LF	$100	$ 10,000
Outfield fencing - 4' tall black vinyl plus 16' mesh extension	360	LF	$125	$ 45,000
Dugouts	2	EA	$25,000	$ 50,000
Bleachers, 5 row x 21'	2	EA	$6,500	$ 13,000
Concrete walkways and pads for bleaches, dugouts	563	SY	$110	$ 61,918
Walkway grate over wet-dry streambed	1	LS	$2,000	$ 2,000
Infield soil mix	1	LS	$14,000	$ 14,000
Seeding (outfield and surrounding area)	7,041	SY	$7	$ 49,284
Property line shrubs, grasses, groundcover	4,258	SY	$15	$ 63,875
Ballfield Subtotal				**$ 341,277**
Contingency (10%)				$ 34,128
Mobilization and Stakeout (6%)				$ 20,477
Design, Construction Documentation, Permitting & Construction Admin. (10%)				$ 34,128
BALLFIELD TOTAL				**$ 430,009**

Play Area				
Accessible walkway	515	SY	$110	$ 56,650
Stairs	8	EA	$1,000	$ 8,000
Play area surface	900	SY	$144	$ 129,600
2-5 and 5-12 play equipment	1	LS	$80,000	$ 80,000
Swings (two bays)	2	EA	$4,000	$ 8,000
Benches	2	EA	$2,500	$ 5,000
Seeding	644	SY	$7	$ 4,511
Play Area Subtotal				**$ 291,761**
Contingency (10%)				$ 43,764
Mobilization and Stakeout (6%)				$ 17,506
Design, Construction Documentation & Construction Admin. (10%)				$ 29,176
PLAY AREA TOTAL				**$ 382,207**

REV7

Item		Unit	Unit Cost	Total
Basketball Court				
Pervious asphalt and base court surface (5400SF)	600	SY	$40	$ 24,000
Color coating	600	SY	$10	$ 6,000
Fencing 15' court ends and 10' sidelines	310	LF	$150	$ 46,500
Basketball goal	2	EA	$4,000	$ 8,000
Benches	2	EA	$3,000	$ 6,000
Bike racks	3	EA	$500	$ 1,500
Seeding	275	SY	$7	$ 1,925
Basketball Court Subtotal				$ 93,925
Contingency (10%)				$ 9,393
Mobilization and Stakeout (6%)				$ 5,636
Design, Construction Documentation & Construction Admin. (10%)				$ 9,393
BASKETBALL COURT TOTAL				$ 118,346
Outer Trails				
Compacted limestone trail: Sangree Road to play area - 6' wide	220	SY	$60	$ 13,200
Bridge between Sangree Road and Play Area	1	LS	$125,000	$ 125,000
Compacted limestone trail: Play area to/around ballfield - 6' wide	767	SY	$60	$ 46,040
Walkway grate over wet-dry streambed	1	LS	$2,000	$ 2,000
Boardwalk between play area and ball field	860	SF	$105	$ 90,300
Sustainable trail near stream, gathering areas	1	LS	$4,000	$ 4,000
Outer Trails Subtotal				$ 280,540
Contingency (10%)				$ 28,054
Mobilization and Stakeout (6%)				$ 16,832
Design, Construction Documentation & Construction Admin. (10%)				$ 28,054
OUTER TRAILS TOTAL				$ 353,480

Sangree Park Cost Summary

PASHEK MTR

7/31/2017

Master Plan Component	Cost
Forest and Stream Restoration	$ 421,654
Removals and Site Preparation	$ 24,444
Access Drive and Parking	$ 339,956
Sangree Road Frontage	$ 174,043
Bridge and Walkway over Stream	$ 358,008
Park Entrance, Green Roof Shelter and Vicinity	$ 312,467
Ballfield	$ 430,009
Play Area	$ 382,207
Basketball Court	$ 118,346
Outer Trails	$ 353,480
TOTAL	$ 2,914,614

REV8

Sangree Park Master Plan Executive Summary

Master Plan Background

Ross Township produced a Comprehensive Park, Recreation and Open Space Plan in 2012, which provided a long-term road map for improving the township's recreation, park and open spaces for public use. That planning process incorporated extensive community input into the kinds of development that citizens wanted in their parks and open spaces, and priorities. The 2012 plan suggested Sangree Park undergo renovations. The township decided to develop a park master plan that included studying the park as a potential location for a water play area, as that was a leading request from citizens in the 2012 plan, and Sangree Park was determined to be a possible location for this facility.

Ross Township received a planning grant from the Pennsylvania Department of Conservation and Natural Resources to create a master plan for Sangree Park. The grant application stated an intention to rehabilitate the woodlands and streams as part of the master plan, and study the feasibility of including a water play area with naturalized spray features. The theme of the park master plan is conservation of natural resources, water conservation and water education.

Sangree Park Site Information

Sangree Park, a 9.3-acre site along the north edge of Sangree Road, lies in the northeastern quadrant of Ross Township. The park is physically shaped as a triangle, with Sangree Road running along the longest side. An unnamed tributary to Pine Creek parallels the road, and is fed by another stream from the north. The genesis of the streams is mainly runoff from surrounding streets. The larger stream is culverted under the parking area, but is visible to the southwest and northeast. The eastern portion of the park is mainly occupied with a softball field, while the western portion includes woodlands, a small basketball court, and some open lawn area. Informal trails cross this part of the park.

The natural areas of the parks are severely degraded. Ash trees that once dominated the woodlands have been killed by the emerald ash border, leaving conditions ripe for the arrival of aggressively invasive plant species. The streams are in bad shape, as runoff from surrounding neighborhoods during storms regularly causes flash flooding that scours and erodes the streambeds. Aging and non-ADA-compliant play equipment occupies a section of the park along Sangree Road near the parking lot. The softball field orientation is not optimal, and the field is non-ADA-compliant. A small picnic pavilion is also available. The park provides no restroom facilities.

Public Participation in Master Plan

A citizen steering committee advised this master planning process. Two public meetings were conducted. In addition, the commissioner whose district includes Sangree Park, was actively involved in the steering committee and in meeting with citizens who live near the park.

The steering committee reviewed concepts and provided direction to the consultant in developing a master plan. The contents of the master plan were affected by the vigorous opposition from some citizens living near the park. As a result of these citizens' strong feelings, the ballfield was not reoriented to more ideal situation, although the current siting (southeasterly) is also acceptable.

The issue of including a water play area also created discussion at steering committee meetings. Some immediate neighbors felt this would bring large numbers of visitors and vehicular traffic that would disrupt the neighborhood.

Park Master Plan

Per the DCNR grant application and funding, the planning work included developing a master plan for Sangree Park and a study of the feasibility of including a water play area. Key recommendations for the park:

- Rehabilitate the woodlands and stream.
- Add a perimeter walking trail loop.
- Incorporate a water play area with a water recapture, purification and recirculation system. Populate with spray features that provide cooling and fun while also appearing "natural," such boulders, fountains and sprays.
- Provide play areas nearby for ages 2-5 and 5-12. These can also reflect a woodland, nature-play and rustic theme.
- Provide restrooms near the spray and play areas.
- Relocate the basketball court to Sangree Road frontage area to separate from the younger child areas of the park. Provide full-court basketball, per resident preference.
- Add a green-roof shelter for picnics.
- Provide sufficient parking.
- Incorporate appropriate plantings to create edges, boundaries and screens.

Water play area feasibility

As noted previously, this planning process explored the feasibility of incorporating a water play area. The process documented a water play area's appeal to the community; determined an appropriate location within the park; developed a concept that aligns with the theme of the park master plan; and provided estimates for probable construction costs and maintenance/operating costs. The consultant's recommendation, as shown throughout this master plan, is to include the water play area. The cost of a water play area may lead the township board of commissioners to decide that including the facility is not feasible.

Including a water play area does influence other design decisions, such as placement of play areas and basketball, and the size of the parking lot. The consultant recommends adding restroom facilities in Sangree Park whether or not a water play area is included.

Costs and Phasing

Opinions of probable construction costs show the full renovation of Sangree Park as shown in the plan drawing on Page ES3 would be $3,789,176.

Phased construction would break this into four stages. These are shown on Page ES4.


BOARDWALK
0.5-MILE PERIMETER WALKING LOOP
20' BACKSTOP FENCE
PLAYER BENCH
REHABILITATED WET WOODLAND
225'
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OUTFIELD FENCE AND MESH TOTAL 20' HEIGHT
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WET-DRY STREAMBED
RAINGARDEN
FLAG OR BANNER
PUMP HOUSE
RESTROOMS
69 PARKING SPACES (5 ADA)
PLAY AREA AGES 2-5
SEATING
NATURALIZED SPRAY AND SPLASH
SANGREE ROAD
NEW VEGETATIVE SCREEN
PLAY AREA AGES 5-12
PARKING LOT DRAINS TO SWALE
SWINGS
NEW SHADE TREES LINING PATHWAY AND PARKING LOT
LOW IMPACT STREAM ACCESS
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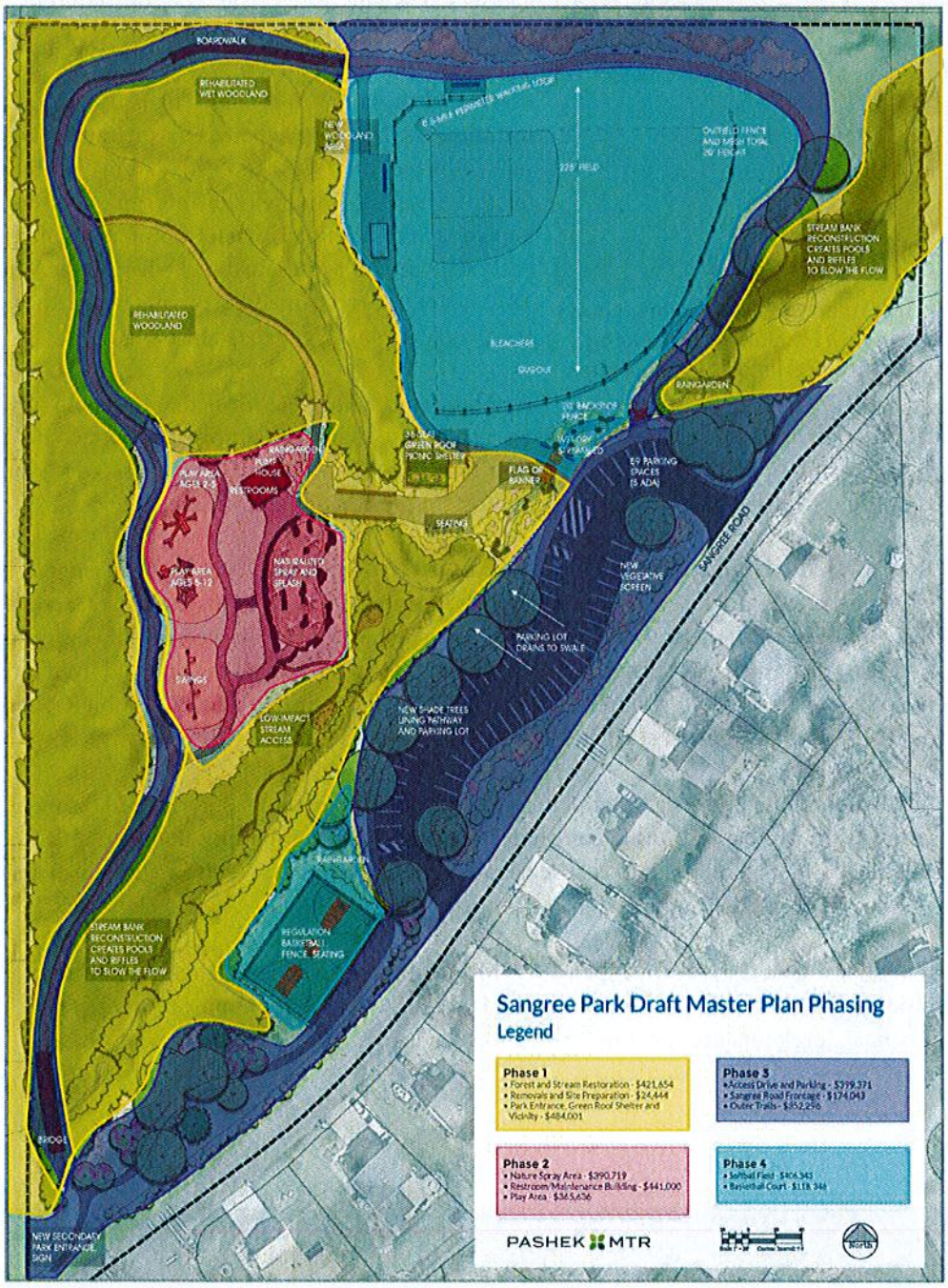
REGULATION BASKETBALL FENCE, SEATING
STREAM BANK RECONSTRUCTION CREATES POOLS AND RIFFLES TO SLOW THE FLOW
BRIDGE
NEW SECONDARY PARK ENTRANCE, SIGN
Sangree Park Master Plan
PASHEK MTR

Sangree Park Costs by Phase

PASHEK MTR

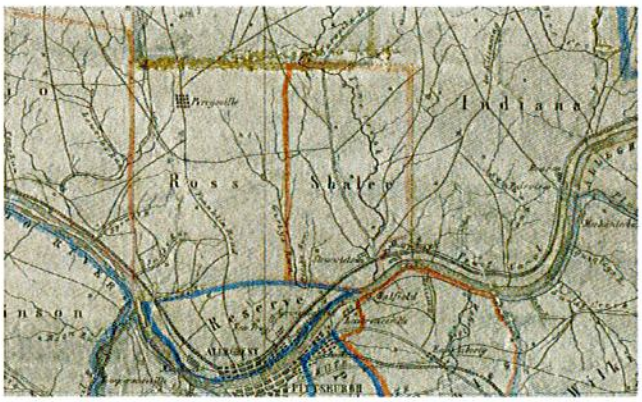
7/31/2017

Master Plan Component	Cost	Phase 1	Phase II	Phase III	Phase IV
Forest and Stream Restoration	$ 421,654	$ 421,654			
Removals and Site Preparation	$ 24,444	$ 24,444			
Access Drive and Parking	$ 399,371			$ 399,371	
Sangree Road Frontage	$ 174,043			$ 174,043	
Park Entrance, Green Roof Shelter and Vicinity	$ 670,475	$ 670,475			
Ballfield	$ 430,009				$ 430,009
Nature Spray Area	$ 390,719		$ 390,719		
Restroom/Maintenance Storage Area	$ 441,000		$ 441,000		
Play Area	$ 365,636		$ 365,636		
Basketball Court	$ 118,346				$ 118,346
Outer Trails	$ 353,480			$ 353,480	
TOTAL	**$ 3,789,176**	**$ 1,116,573**	**$ 1,116,573**	**$ 926,895**	**$ 548,354**



Chapter 1: INVENTORY AND ANALYSIS

History of the Area



This enlargement of an 1850 map by E.A. Heastings shows Ross and Shaler townships, with Franklin Road running north-south to Perrysville. (Credit: Historic Pittsburgh)

Ross Township is named for James Ross, a lawyer who practiced in Washington County and Pittsburgh, and served as a delegate to the state constitutional convention and, in 1794, a U.S. Senator.

Previously, the land was occupied by native populations including the Iroquois, Lenape, Shawnee and Mingo. As such, it included the Venango Path, a trail connecting the three rivers to Presque Isle. This route later became known as Franklin Road, when Commodore Oliver Perry employed it as a route to Lake Erie in the War of 1812. Later it was renamed Perrysville Plank Road and then Perry Highway, dedicated in 1930

As Allegheny County was formed to the south in 1788, with borders firming up by 1800, Ross also began to take shape, becoming incorporated in 1809. Shaler Township was established to the east in 1845. West View Borough, which seceded from Ross in 1905, stands as an island in the southwestern portion of the township.

As Ross was settled, agriculture and forest dominated the landscape. John Rosberg Sangree, born in September, 1853, and his wife Florence Whitesell Sangree, whom he married in 1881, owned and farmed the land in the area now known as Sangree Park. Their son, Percey W. Sangree (later Wilson Percy Sangree), was born in 1883. He and his wife, Ella, moved to Ohio and lived most of their lives there, having four children. Matriarch Florence Sangree died in 1914. John R. Sangree died in 1922. Both are buried at Hiland Presbyterian Church Cemetery.

As population in the Pittsburgh metro area grew, neighborhoods spread northward through Ross Township. The earliest was Evergreen Hamlet, a planned community, founded in 1851. Residential development began to eclipse farming through the 1900s, with Sangree Farm, being one of the last to go. The land was donated to the township in 1976.

Ross became a First Class Township in 1922. McKnight Road was completed as a four-lane highway in 1951, providing access to new residences as well as the shopping centers and commercial developments that now line the road and augment the community's tax base.

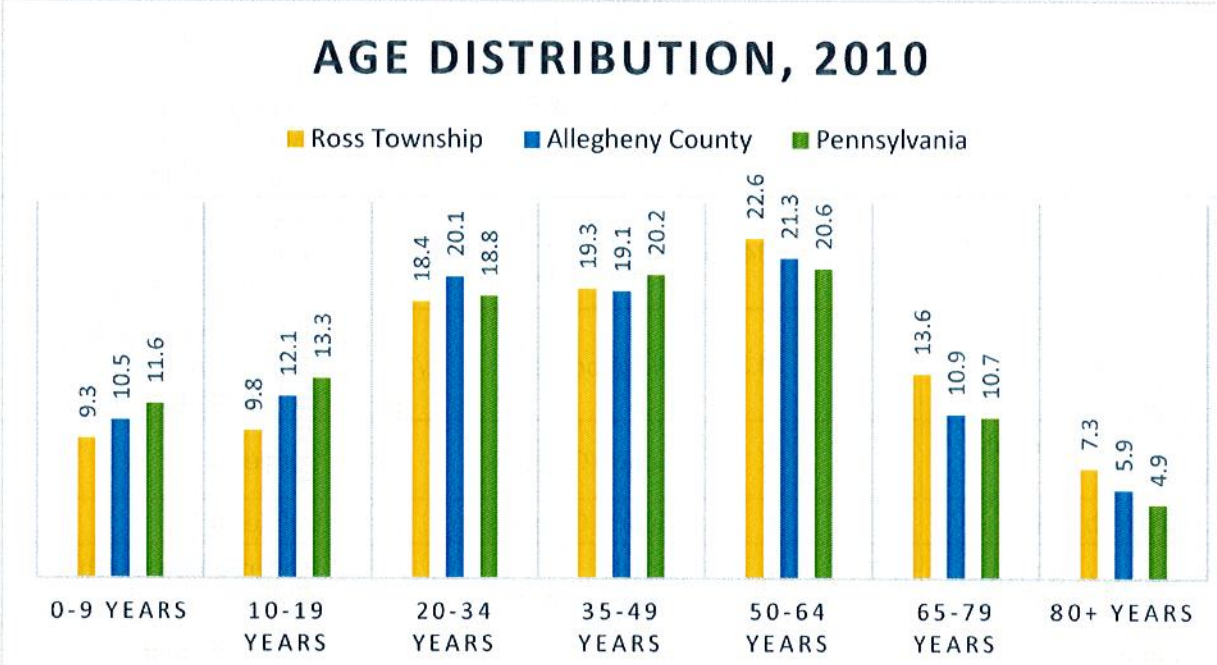
Population and Demographics

Today, the township is largely a residential and community covering 14.4 square miles. Ross Township surrounds West View. It is bordered by McCandless Township to the north, Hampton Township to the northeast (touching at one point), Shaler Township to the east, Reserve Township and the Pittsburgh to the south, the borough of Bellevue to the southwest, Kilbuck Township and Ohio Township to the west, and the borough of Franklin Park to the northwest.

In 2010, the population in Ross Township was 31,105; 16,498 were female and 14,607 were male.

Between 2000 and 2010, the population of Ross Township decreased by 4.4%. In comparison, Allegheny County decreased by 4.6% while the state population rose by increased by 3.4%. This indicates that there is a slight out-migration of residents from Ross Township.

Age distribution data from the 2010 Census shows that overall, Ross has a slightly older population that either Allegheny County or the Commonwealth.



- Ross Township has lower percentages of children and teens than do Allegheny County or the state.
- Ross Township has higher percentages of adults ages 50-64, 65-79 and 80 and over than do the county or state.
- Ross Township residents had the highest median age in 2010 at 45.4 years. This is above the county's and state's median ages of 41.3 and 40.1, respectively.
- The percentage of adults age 20 to 49 is similar in Ross Township to that of the county and the state.

As noted in the 2012 Ross Township Comprehensive Park, Recreation and Open Space Plan, the smaller youth population does not necessarily indicate a need for fewer facilities or programs for those ages but certainly shows the need to plan for programs and facilities to meet the needs of an older population for the future. Some communities add facilities specifically designed to attract younger families.

Other Township Park Facilities

In addition to Sangree Park, Ross Township provide numerous neighborhood and community parks. Sangree Park stands as the only neighborhood park in the northeast quadrant of Ross Township, highlighting the need to maximize amenities for residents in that area.

Ross Township Parks					
Park Name	Ward Location	Acres	Classification	Service Radius (miles)	Facilities
Amity Park	9	0.54	Small Neighborhood	1/4	Playground, basketball court
Ann Allison Hoover Memorial Park	3	0.76	Small Neighborhood	1/4	Picnic area, walking trail
Brethauer Park (White Park)	7	0.45	Small Neighborhood	1/4	Playground, basketball court
Denny Park	7	33.94	Neighborhood/ Community	1 1/2	Playground, basketball court, tennis courts, ballfields, picnic area, multi-use field
Evergreen Community Park	8	34.55	Neighborhood/ Community	1 1/2	Playground, basketball court, picnic area, trails, indoor facility, lake
Herge Park	4	4.33	Neighborhood	1/2	Playground, basketball court, tennis courts, ballfields, picnic area
Johanna Memorial Field*	2	1	Sports Complex	-	Ballfields
John Herb Field**	8		Sports Complex	-	Ballfields
Main Boulevard Park	9	1.27	Small Neighborhood	1/4	Playground, basketball court
Maple Park	6	0.17	Small Neighborhood	1/4	Playground, basketball court
Mayer Park	4	10.66	Neighborhood	1/2	Playground, ballfields, picnic area, multi-use field
Osterle Park	7	17.92	Neighborhood	1/2	Ballfields, picnic area, trails
Quaill Park	6	0.6	Small Neighborhood	1/4	Playground, basketball court, picnic area, trails, indoor facility, lake
Rosecliff Park	1	3.91	Neighborhood	1/2	Playground, basketball court, ballfields, picnic area, trails, multi-use field
Ross Community Park*	8	10	Neighborhood/ Community	1 1/2	Playground, basketball court, ballfields, picnic area, trails, multi-use field, indoor facility

Sangree Park	2	9.33	Neighborhood	1/2	Playground, basketball court, ballfield, picnic area, multi-use field
Scharmyn Park	5	11.59	Neighborhood	1/2	Playground, basketball court, tennis courts, ballfields, multi-use field
Second Avenue Park	3	0.25	Small Neighborhood	1/4	Playground, basketball court
Seville Park	6	18.92	Neighborhood	1/2	Playground, basketball court, ballfields, picnic area, multi-use field
Ted Bartlett Memorial Park	2	3.07	Sports Complex	-	Ballfields, picnic area
Tyler Park	2	3.12	Small Neighborhood	1/4	Playground, picnic area multi-use field
Windhurst Field	8	4.2	Sports Complex	-	Ballfields, picnic area, multi-use field

Adjacent Land Use and Neighborhood Context

Residential neighborhoods surround Sangree Park. These homes, mainly built between 1940s and 1980s, generate many of the current park users. These neighborhoods - White Oak Heights, Kinvara and Cherrington - are zoned R1 - Single Family Residential. The neighborhoods do not have sidewalks, creating a necessity to either walk/bike to the park on the street or to drive.

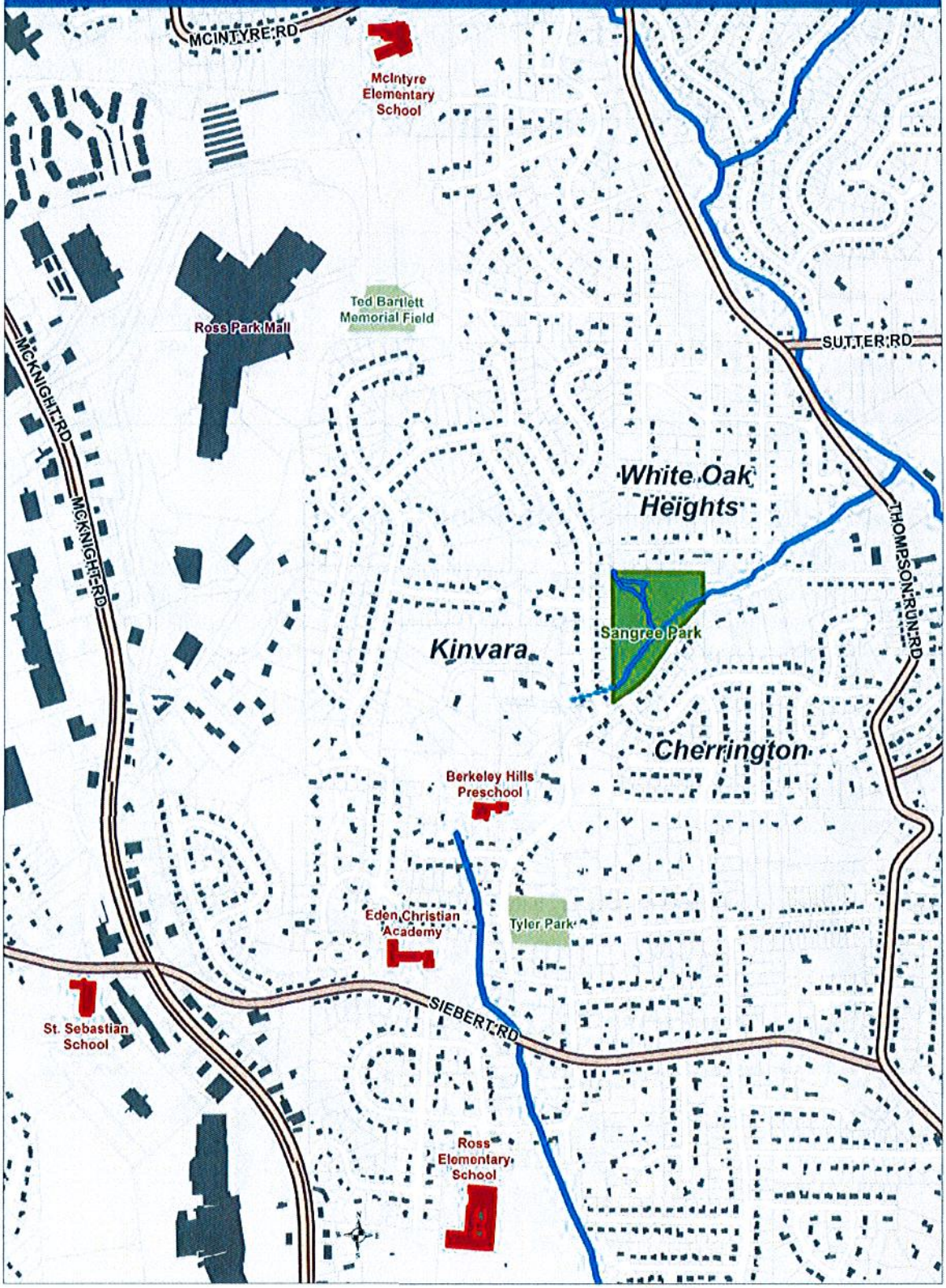
Sangree Road's posted speed limit is 25. An eight-day traffic study of 10,000 vehicles on Sangree Road conducted in January 2017 collected the following data:

- Average speed: 24.39
- 50th percentile speed: 24.35
- 85th percentile speed 27.85

A map showing neighborhood context appears on the facing page.

Sangree Park Context Map

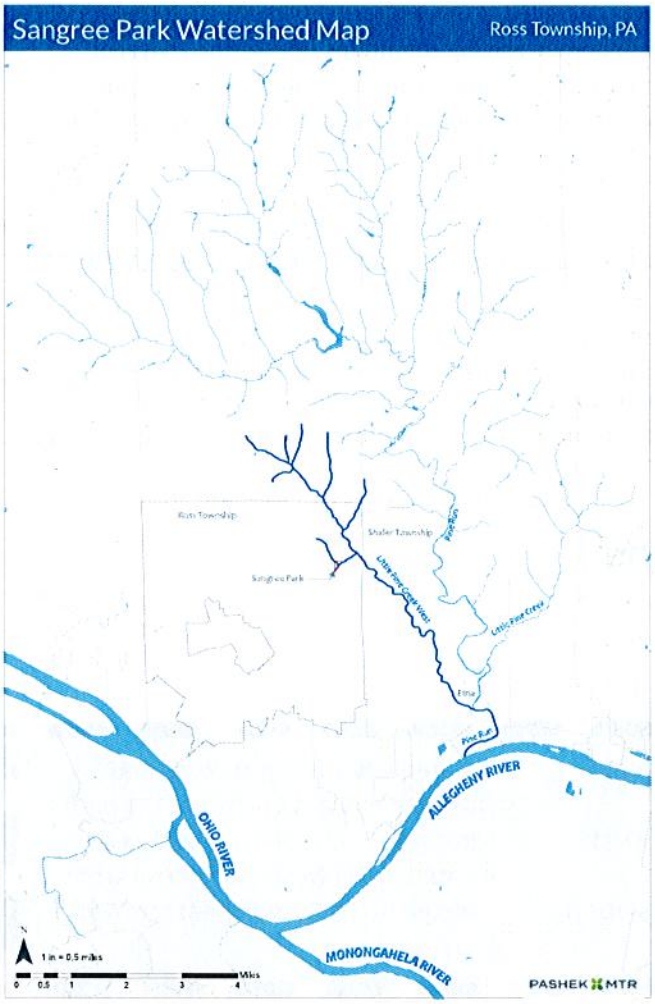
ROSS TOWNSHIP, PA



PASHEK MTR

Watershed

The streams that surface in Sangree Park are fed primarily by stormwater runoff from surrounding streets. The streams are unnamed tributaries to Little Pine Creek West (on some maps called Scotts Run), which flows generally southeastward through Shaler Township till it meets Pine Run at Etna Borough. There Pine Run enters the Allegheny River.



It is always best to manage stormwater as far upstream as possible, and this watershed is no exception. Stormwater management is a critical matter in and around the Pittsburgh metro area, as the Allegheny County Sanitary Authority is party to a consent decree with the U.S. Environmental Protection Agency to reduce wet weather sewage discharges into the region's rivers and streams. Streams that are overloaded with stormwater runoff during rain events can overwhelm old pipes that then mix both storm and sanitary sewage and dump it into the river.

Ross Township's hope is to rehabilitate the portions of the unnamed tributary that flows through Sangree Park. Streambed reconstruction can help to slow the water flow during heavy rains, which lessens the risk of flooding and combined sewer overflow downstream. Slowing the water also improves water quality by reducing erosion and the amount of silt carried into the stream. Finally, it creates a more pleasing place for park visitors to see and enjoy.

A map showing Sangree Park and the unnamed tributaries in the context of the Pine Run watershed appears above.

Sangree Park Site Information

Sangree Park, a 9.3-acre site along the north edge of Sangree Road, lies in the northeastern quadrant of the Township, roughly between Ross Park Mall to the west and Thompson Run Road to the east. As part of this master planning process, a boundary survey was undertaken for the park; this can be found at the end of this section.

The park is physically shaped as a triangle, with Sangree Road running along the longest side. An

unnamed tributary to Pine Creek parallels the road. This is fed by a smaller stream that originates in the northwest corner of the park. The larger stream is culverted under the parking area, but is visible to the southwest and northeast. The eastern portion of the park is mainly occupied with a softball field, while the western portion includes woodlands, a small basketball court, and some open lawn area. Informal trails cross this part of the park.

The natural areas of the parks are severely degraded. Ash trees formerly dominated the woodlands; these have been killed by the emerald ash border, leaving conditions ripe for the arrival of aggressively invasive plant species. Similarly, the streams are in bad shape, as runoff from surrounding neighborhoods during storms regularly causes flashing in the streams, which in turn scours and erodes the streambeds.

Aging and non-ADA-compliant play equipment occupies a section of the park along Sangree Road just west of the parking lot. A small picnic pavilion is also available. The park currently provides no restroom facilities.

Ross Township, in its application for a planning grant from the PA Department of Conservation and Natural Resources, stated an intention to rehabilitate the woodlands and streams as part of the master plan. The theme of the park master plan is conservation of natural resources, water conservation and water education.

Other Existing Conditions

Soils Survey

The following soils are found in the park:

ErC	Ernest silt loam (8-15% slopes)	Located along Sangree Road and the northeastern portion of the park
ErB	Ernest silt loam (2-8% slopes)	Most prevalent soil type in the park, located in the west and central areas
GID	Gilpin silt loam (15-25 % slopes)	Located in the far northeast corner of the park

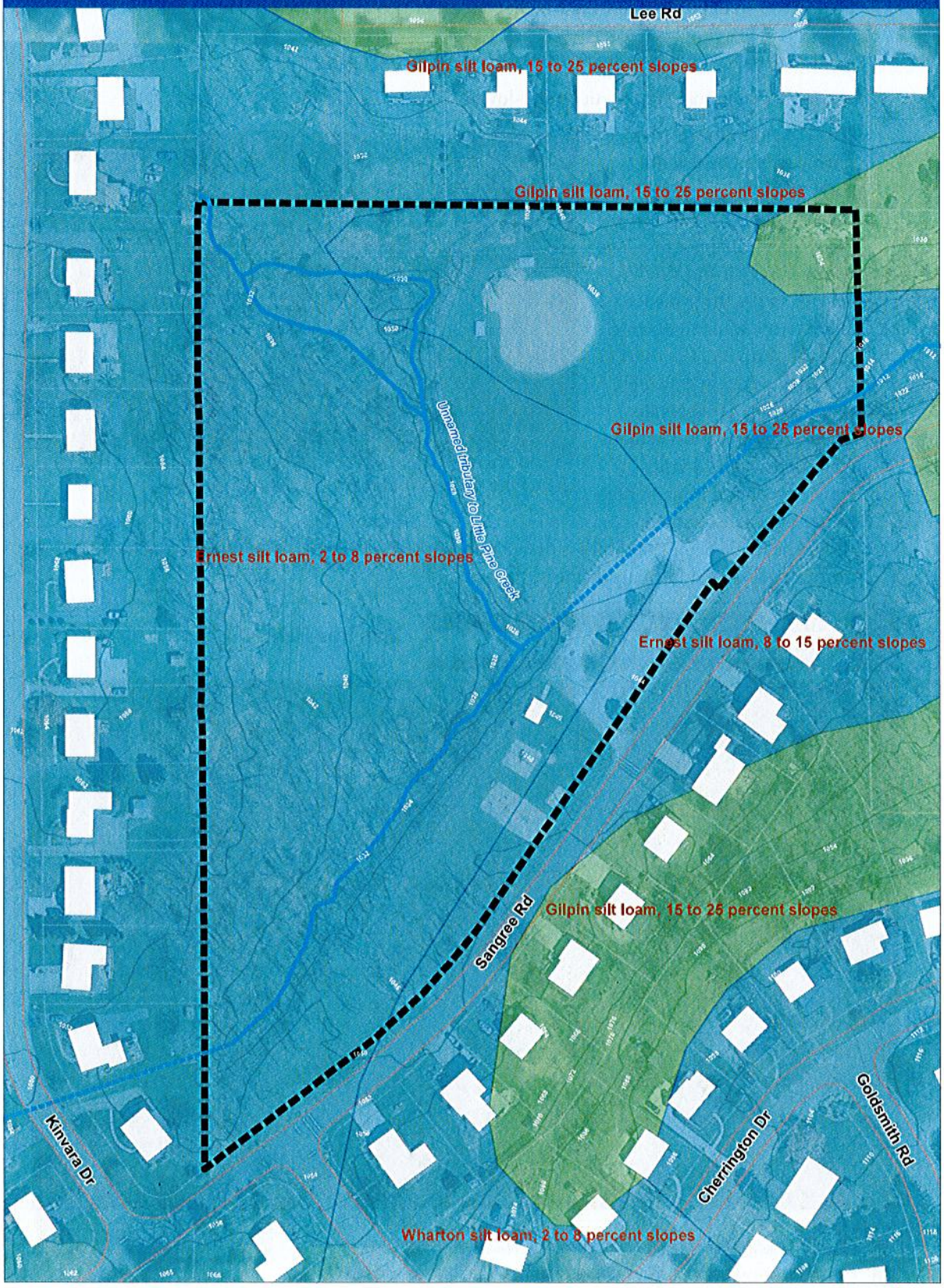
The United States Department of Agriculture Soil Conservation Service provides data on soils properties. In addition to the soil survey, we reviewed the list of hydric soils for Allegheny County, Pa. Those soils designated as hydric, or those containing hydric components, may be classified as jurisdictional wetlands if they exhibit two other requirements: the presence of hydrology and the presence of hydrophytic vegetation.

Furthermore, the ability of soil to infiltrate stormwater runoff can be evaluated based on the soil's hydrological group. Those soils with a soils hydrologic group of A or B may be fully or partially hydric. The presence of these soils could indicate:

1. The presence of a wetland if two other criteria are also present. (See Wetlands section.)
2. The ability of the soil to infiltrate stormwater via best management practices.

Sangree Park Soils Map

ROSS TOWNSHIP, PA

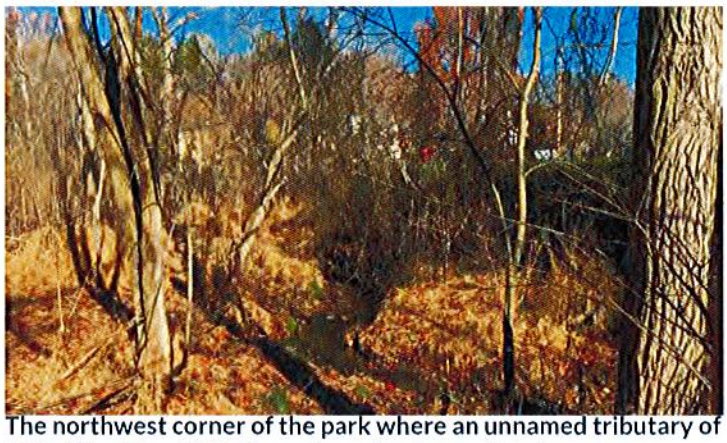


Wetlands

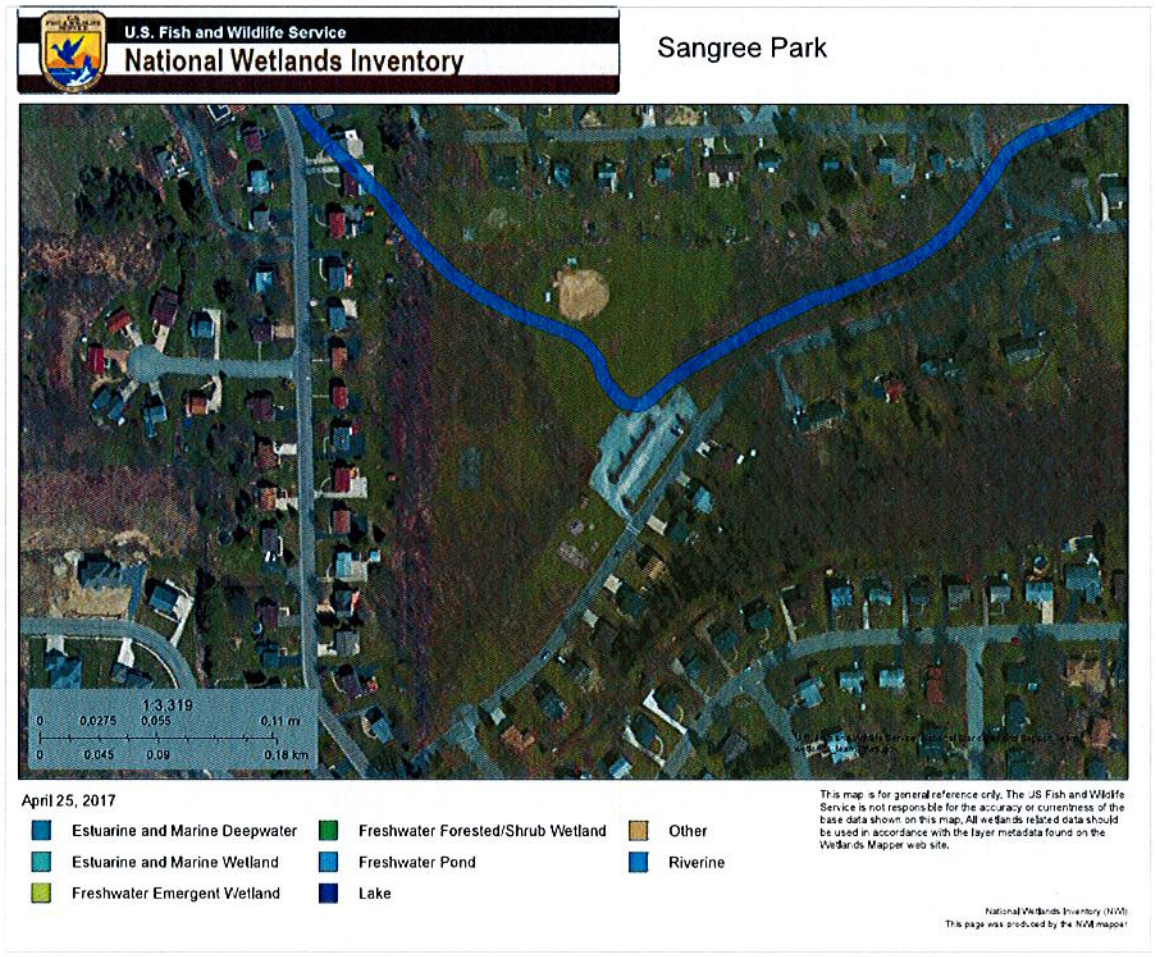
Because partially hydric soils are present at this site, it is necessary to recognize the possible presence of wetlands by assessing whether the other two factors are present as well:

1. Presence of water for a period of seven days or longer.
2. Presence of hydrophytic (water-loving) plants.

This was not fully ascertained during winter visits to the park, so further exploration is warranted. A search using the wetlands mapper provided by the U.S. Fish and Wildlife Service shows the presence of a riverine wetland flowing through the park. The route of this stream (see map below) is not completely accurate when checked against actual conditions via field visits. However, since a wetland may be present, an assessment should be made before any work is done in the park. If a wetland is identified, a qualified professional should formally delineate the wetland.



The northwest corner of the park where an unnamed tributary of Little Pine Creek West may be a riverine wetland.



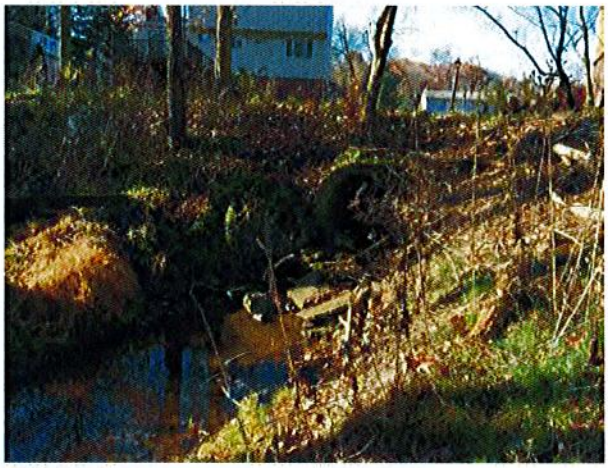
PNDI Search

An environmental review was initiated via a Pennsylvania Natural Diversity Inventory search. No potential impacts to rare, threatened or endangered species are anticipated. See the PNDI search results in the Appendix.

Streams

At Sangree Park, intermittent streams are fed mainly by stormwater runoff from surrounding streets, with additional natural accumulation of surface water during wet weather.

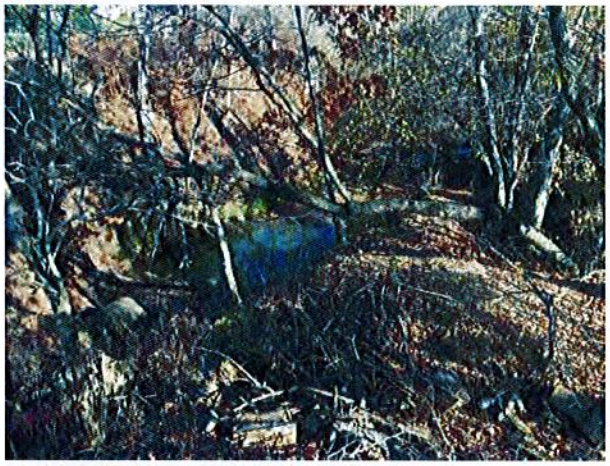
One channel runs roughly southwest to northeast, following the north side of Sangree Road. This channel flows in a ravine about 18 feet deep with steep and unnatural banks on one or both sides. The stream originates at an outfall near the intersection of Sangree, Kinvara and Cherrington roads, and is immediately fed from several additional outfalls that transfer water from storm inlets along Sangree Road and Cherrington Drive. (See Utilities Map on Page 15.)



Outfall at origin of stream channel within park property near the intersection of Sangree, Kinvara and Cherrington roads.

The second channel runs from north to south, and meets the main channel near the existing park parking lot. This tributary collects water from storm outfalls just inside and outside the northwestern corner of the park as well as surface drainage. This channel runs under the "land bridge" that connects the east and west portions of the park.

After the tributaries merge, the stream is culverted for a distance of 275 feet under a section of the parking lot. It then reemerges into daylight and continues flowing northeast to exit the park property toward the intersection of Sangree and Lee roads.



Outfall from the stream segment culverted under the parking lot.

As mentioned previously, water quality and water quantity both are problematic at Sangree Park. Flash flow of water not only contributes to flooding downstream but also causes erosion that increases damaging silt load. Though the unnamed tributary to Little Pine Creek West does not currently have a condition assessment, the Pine Creek Watershed overall carries pollution including phosphates, nitrates and chloride.

Rehabilitation of the streams in Sangree Park will necessitate regrading of the streambeds and alterations of the flow. This will necessitate prior permitting from both the U.S. Army Corps of Engineers and the Pennsylvania Department of Environmental Protection. The permitting process includes hydrological studies and assessments that will govern the specific steps taken to stabilize and improve the stream.

Finally, plantings are added to stabilize the stream bank and create a riparian buffer. A similar project is shown in a series of before and after photos on the facing page.

These pictures show a restoration project at Donnybrook Stream in Montgomery County, Md. Top: Grading of banks and addition of structures to slow water. Middle: Creation of pools to provide habitat and add riffles to increase aeration. Bottom: Gentle slopes are introduced and planted with native vegetation to stabilize bank and create habitat. (Credit: Don Dorsey)

Riparian buffer

Riparian buffers are areas of vegetation along waterways that protect water quality and stabilize stream channels. Vegetated areas along streams are of significant ecological importance as they:

- Slow flood waters and reduce the volume of water through infiltration and root absorption
- Improve water quality by filtering storm water runoff and promoting sediment deposition
- Recharge groundwater
- Provide canopy cover which shades and cools streams, thus improving habitat conditions for in-stream organisms
- Provide habitat for a variety of birds and small mammals, including access to shelter, food, and water

At Sangree Park, the riparian border is degraded due to flashiness of stream flow during high-water rain events, and due to the demise of so many trees because of emerald ash borer infestation. Deterioration of the riparian border has enabled invasive plants, including Japanese knotweed to gain a footing.

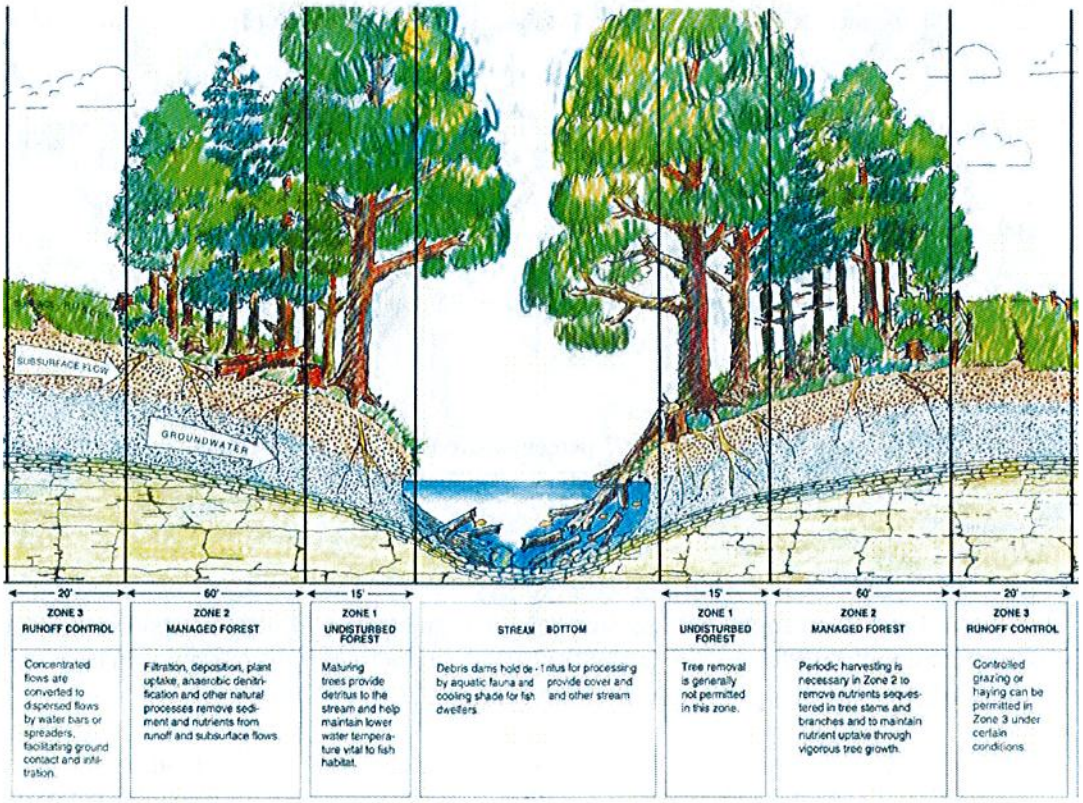
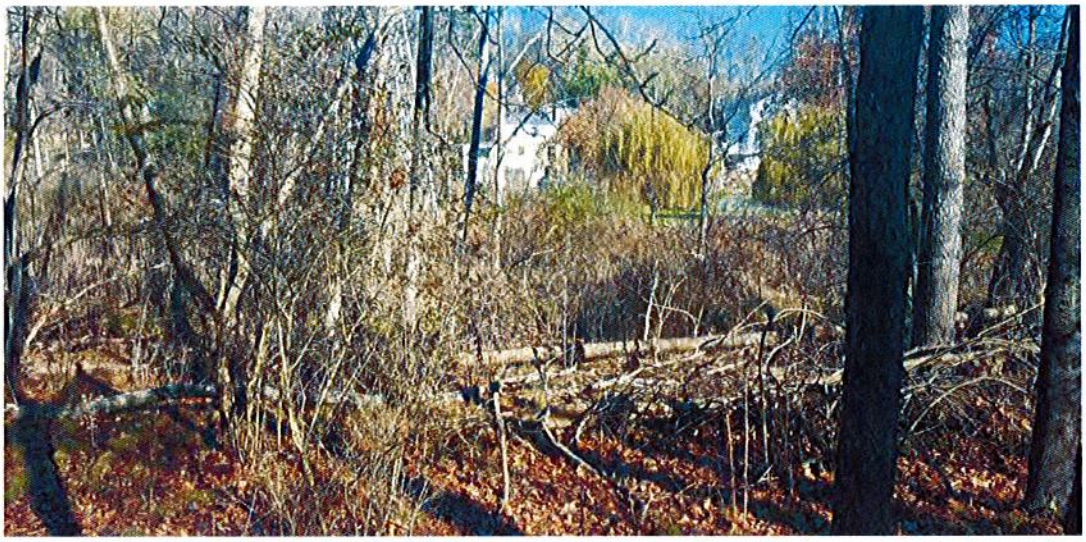


Diagram of a healthy riparian border.

Woodlands

Of Sangree Park's 9.3 acres, woodlands occupy 5.5 acres or 60 percent of the park. The wooded areas, once dominated by ash trees, are now in poor condition, having been infested with the emerald ash borer, which has already killed many trees. The rest will die in the next few years.



Downed and dying ash trees in the park were infested by the emerald ash borer.

Dead and dying trees do have their uses: They can provide habitat for wildlife, including cavity-nesting birds. However, gaps in the canopy create conditions that are inviting to aggressive invasive plants, such as bush honeysuckle, Japanese knotweed, grapevine, multiflora rose and autumn olive.

A woodland restoration plan is needed. As much of the forest is also considered riparian borders to the stream channels, attention to the woodlands would also help the streams. Woodland restoration includes planting some trees of 1" to 2" trunk diameter, and many seedlings. In addition, seed mixes should be spread throughout to create a dense groundcover.

This helps keep invasives out until natural succession can take place over the course of 10-20 years.

Slopes

Within the park, slope of greater than 25 percent are found in the stream channels, as shown in dark red on the Slopes Map on Page 14.

Utilities and Easements

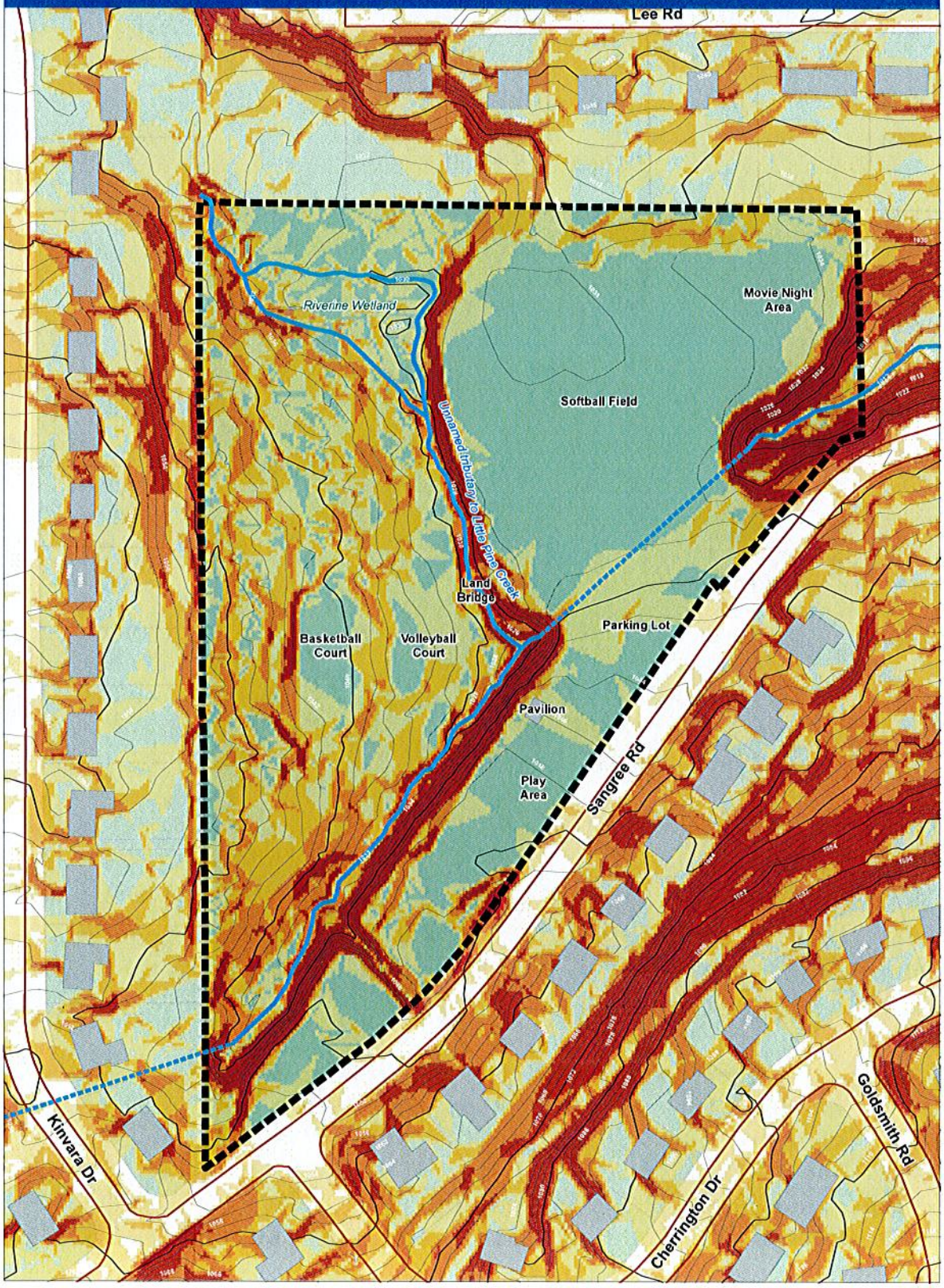
Duquesne Light Company electric transmission lines and overhead distribution wires follow an easement along the northern boundary of the park. A steel tower for the transmission lines stands just outside the park boundary in the northwest corner.

Utility poles along the northern park boundary create a necessity for a 15-foot setback for any construction or trees along that park border. Plants that will remain low and not grow to interfere with the wires would be acceptable. Similar electric distribution wires that create the same constraints also follow the park boundary along Sangree Road.

Sanitary sewer lines cross the park, each generally following the course of the streambeds. These are shown on the Utilities Map on Page 15.

Sangree Park Slopes Map

ROSS TOWNSHIP, PA



PASHEK MTR

0 20 40 80 120 Feet

1 inch = 40 feet

Legend

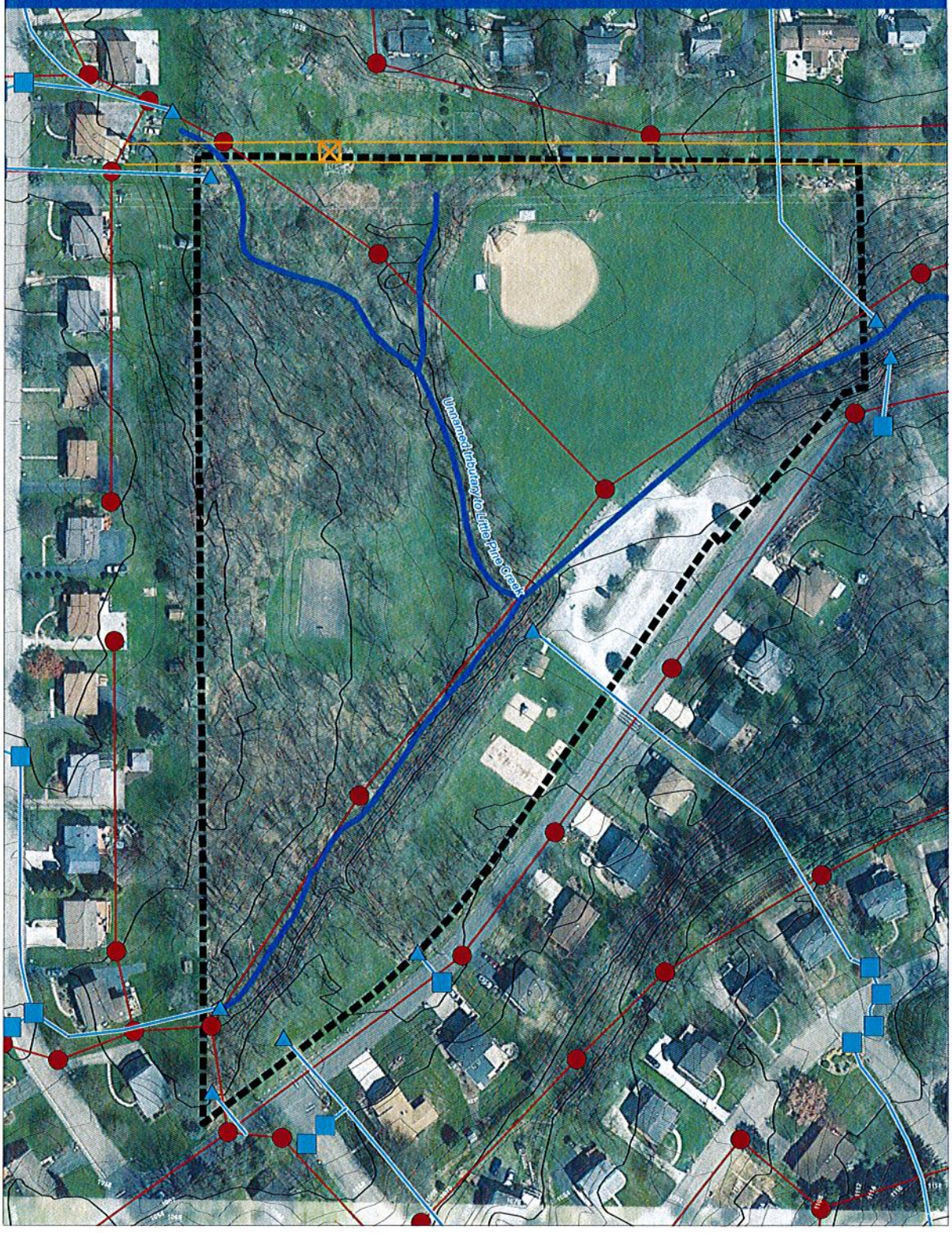
- Stream
- Stream (Culvert)
- Index Contour
- 2-Foot Contour
- Park Boundary
- Parcel boundary
- Building Footprint

SLOPES

- 0 - 5%
- 6 - 15%
- 16 - 25%
- 26%+

Sangree Park Utilities

ROSS TOWNSHIP, PA



N W E S

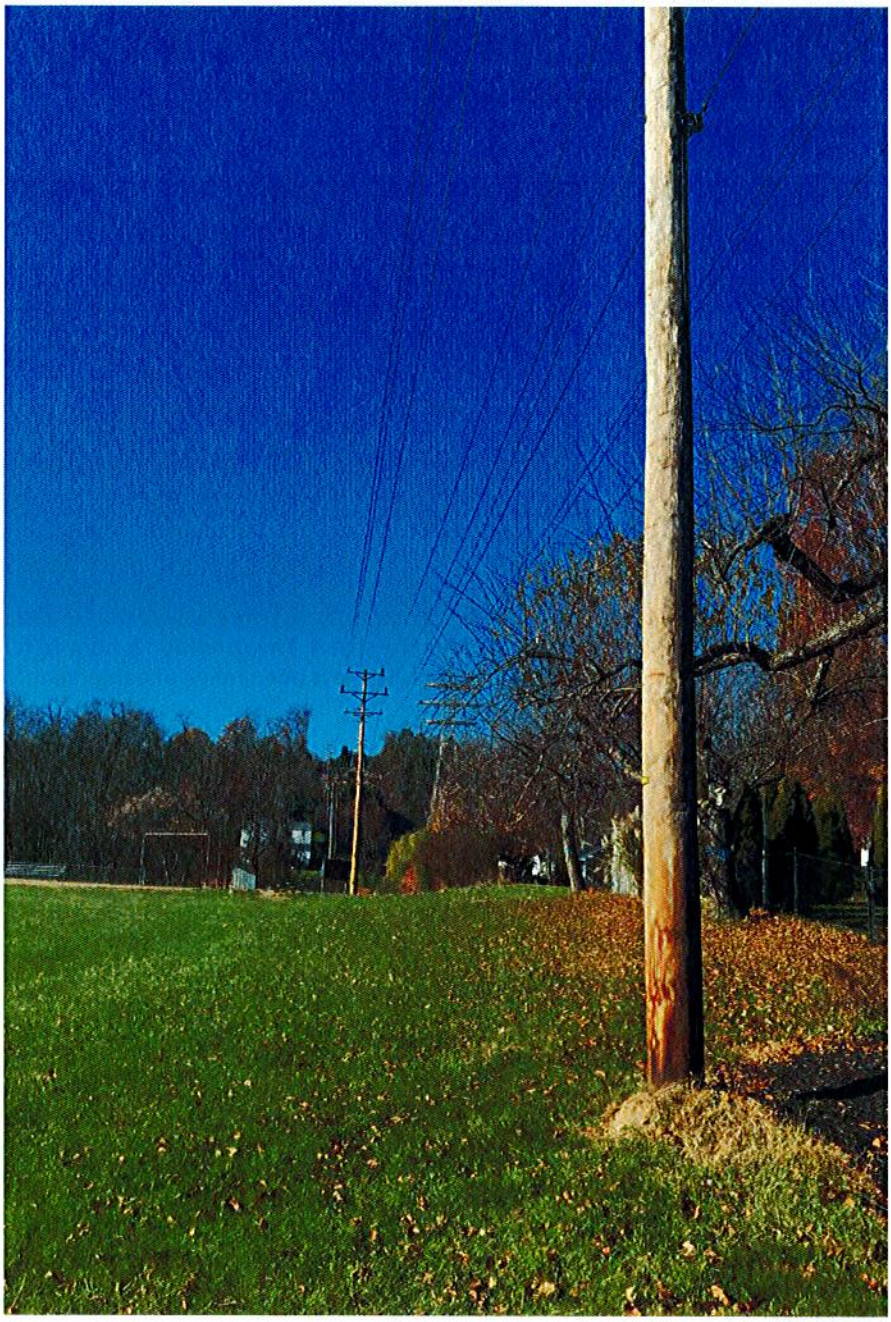
0 20 40 80 120 160 Feet

1 inch = 40 feet

PASHEK MTR

Legend

- Sangree Park Boundary
- Electric Transmission Lines
- Transmission Tower
- Storm Sewer Outfalls
- Storm Sewer Inlets
- Storm Gravity Mains
- Stream
- Sanitary Sewer Manholes
- Sanitary Sewer Gravity Mains
- Index Contours
- 2-Foot Contours

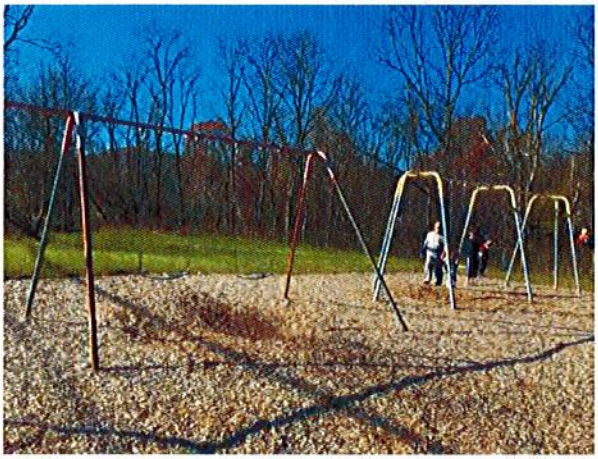


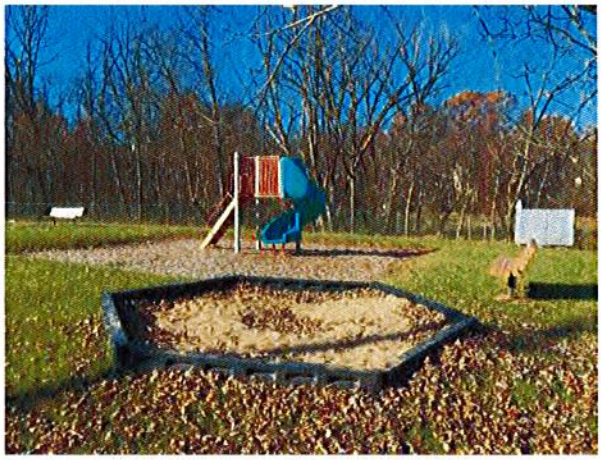
Duquesne Light Co. operates high electric transmission lines and overhead electric distribution lines along the north boundary of the park shown in this photos. The company recently cut down trees near the electric transmission corridor, including those visible at right, which aggrieved the property owners.

On the Sangree Park side (left side of the photo), Duquesne Light requires a 15-foot setback from the utility poles shown here for any future development. The exception will be low-growing shrubs that cannot interfere with the wires or maintenance.

Park Amenities and Features

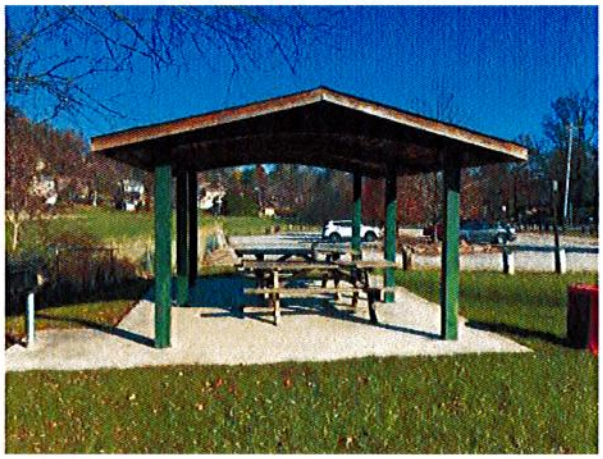
As noted previously, Sangree is a large neighborhood park with a variety of facilities, listed here with description of the existing conditions of each:





Play areas are along Sangree Road, with no barrier separating them from the street. The condition is poor to fair, and they do not meet requirements of the Americans with Disabilities Act. There is not a range of equipment for children 5-12.

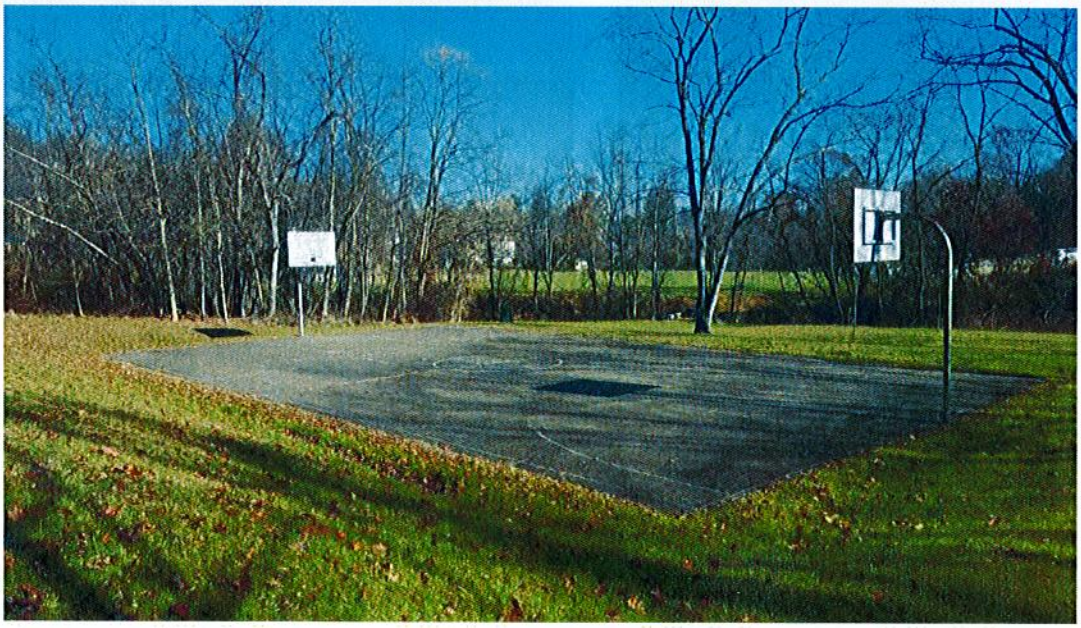
The aggregate surface of the parking lot is too compacted to allow infiltration. Parking is disorganized. Capacity appears to be approximately 28 vehicles. The lot is not ADA compliant.



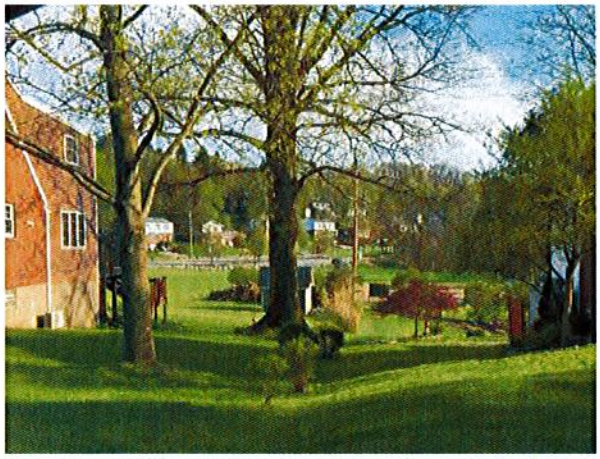
The shelter, which seats 12, was recently improved to be accessible. It sits between the parking lot and existing play areas.

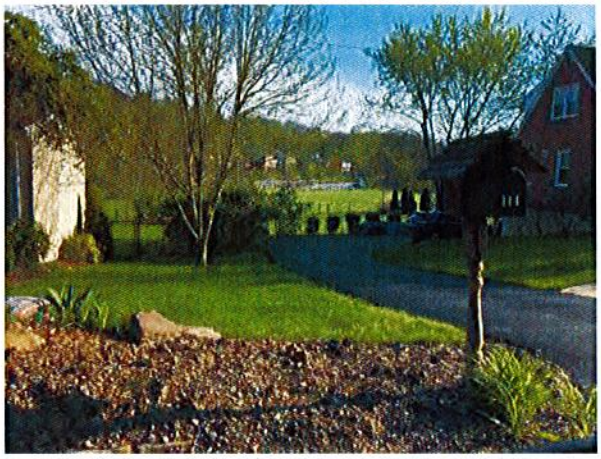
In the park interior, downhill from the basketball court, sits an open lawn area. Metal poles, possibly for a volleyball net, are in position.

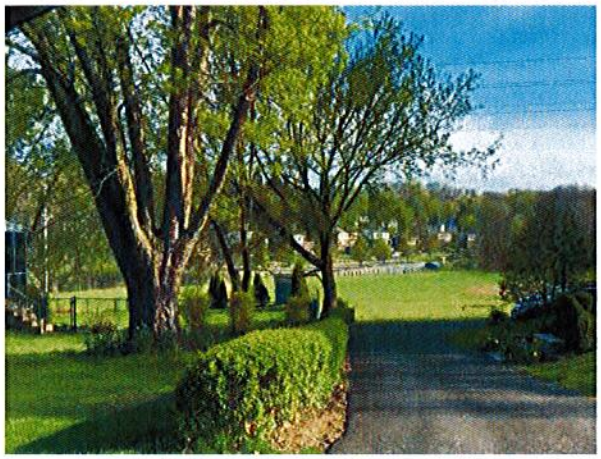
The softball field, home field for a North Hills Athletic Association girls team, has recently enjoyed repairs to the field surface. The NHAA and the township continue to provide maintenance. The field orientation, facing south is not optimal for play. Fencing is in poor to fair condition. Bleachers are newer. Some gravel and mulch has been added to reduce mud. Player benches are aging. Storage is provisional. The field area is not ADA compliant for players or spectators.



The basketball court, located in the interior of the park, is smaller than regulation size. There are no player benches. The metal backboards create a loud pinging sound with each shot. The asphalt surface is in good condition.



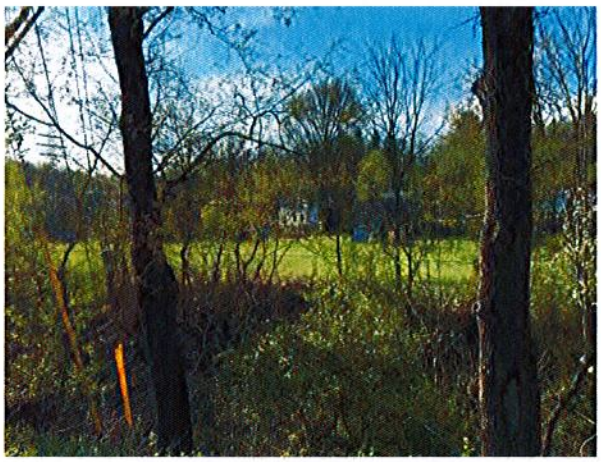


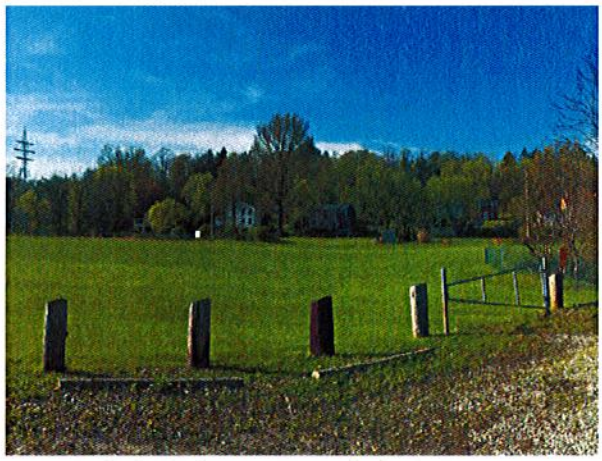


Some residents of nearby Lee Road, which parallels the park's north border, expressed strong concern about changes to the softball field because they like the current views and sense of openness. The view above and left provide a drive-by view of the park from the neighbors' perspective. Some Lee Road neighbors stated a concern that if the field is reoriented, fly balls would come into their yards. They stated that at this time, foul balls enter their yards.

Below left, the ball field and houses on Lee Road viewed from Sangree Road.

Below, the houses on Lee Road from the existing parking lot.





Conclusions from the Site Analysis

Sangree Park is a valuable and promising resource for Ross Township in general and White Oak Heights, Cherrington and Kinvara neighborhoods in particular. The community's stated goal of improving the park with the theme of woodland conservation, water conservation and water education reflects its determination to preserve a natural area for public use, enjoyment and enrichment. The park master plan starts with the presumption that woodland and streambed restoration are essential elements of improvements to the park.

Park improvement priorities:

- Rehabilitating the woodlands and streams
- Providing recreation facilities for people of all ages and abilities, including play areas, walking trail and improved basketball court and softball field.
- Providing ADA accessibility

The woodlands and streams in Sangree Park are in poor condition, and improving them will require effort, funding, attention and time. It can be argued that stewardship for its own sake is the township's responsibility, but in the case of Sangree Park, improvements to the natural assets will also be a positive step for park visitors: Improving 60 percent of the park - that covered in woodlands - is necessary if the park is to be a desirable destination over time.

Stream improvements are needed to help reduce flooding and combined sewer overflow problems downstream. This effort can include help from surrounding neighbors and streets to reduce runoff and pollutants entering the stream.

The site analysis also reveals the need for improvements to recreation facilities. With play areas dated, worn and not in compliance with the American Disabilities Act, new equipment is badly needed. Moreover, because of undesirable proximity to Sangree Road, the play area should be relocated to the interior of the park.

Play equipment is dated and worn, and play areas are not ADA-accessible.

The existing softball field is not oriented in the preferred direction for play, and player/spectator areas are distant from parking and not accessible via routes that comply with the ADA. Fencing, benches and seating should be improved. We recommend the field be reoriented and appropriate pathways and seating provided.

The basketball court is substandard in size and is not accessible via ADA-compliant pathways. As this is a popular asset for older children and teens, a standard court with appropriate paths and seating should be provided.

Site analysis also revealed a lack of activities for adults, the most highly desirable of which is a walking path. Addition of a perimeter pathway could create a 0.5-mile walking loop.

A lack of connectivity to surrounding neighborhoods is an issue not only with Sangree Park but in many areas of Ross Township, as residential areas were constructed with the assumption that people would drive everywhere, not walk or bike. Connective sidewalks along Sangree Road would be a useful and desirable addition.

Sangree Park Opportunities Map

ROSS TOWNSHIP, PA

PASHEK MTR

40 20 0 40 80 120 Feet

1 inch = 40 feet

Legend

- Informal Walking Path
- Stream
- Stream (Culvert)
- Index Contour
- 2-Foot Contour
- Park Boundary
- Parcel boundary
- Building Footprint
- Slope >25%

Chapter 2: PUBLIC INVOLVEMENT

The public process involved several avenues of input including a steering committee of residents, stakeholders and officials; numerous key person interviews; additional input from nearby residents; and public meetings to solicit input and present the recommendations.

It should be recalled here that Ross Township adopted a Comprehensive Recreation, Park and Open Space Plan in 2012. This plan suggested Sangree Park undergo renovations. The township decided to develop a park master plan that included studying the park as a potential location for a water play area.

Steering Committee

The township's director of parks and recreation and the consultant assembled a steering committee that included representatives of these stakeholder groups:

- Surrounding neighborhoods
- The township commission, including the commissioner in whose ward Sangree Park lies and the commissioner who is liaison to the parks and recreation department
- The North Hills Athletic Association (softball league that plays at Sangree Park)
- The North Hills School District board
- Northern Area Environmental Council

A brief summary of each meeting is presented below, with meeting minutes provided in the appendix for more detailed review.

Meeting #1, Nov. 28, 2016

This meeting introduced steering committee members to the goal of this project: To develop a master plan that meets the needs of the community and is based on the themes of conservation of natural resources, water conservation and water education. The master plan includes study of the feasibility of including a water play area at the park. The consultant and steering committee discussed the opportunities and constraints presented through analysis of existing conditions at the park and neighborhood context.

Meeting #2, Feb. 27, 2017

At this meeting, the steering committee reviewed public input so far, including from an initial public meeting the previous month and from key person interviews. It reviewed and provided input on two concept plans and character images, stating preferences for components to be included in/omitted from the master plan draft. A dozen area residents attended this meeting at the invitation of Councilman Steven Korbel, and provided input.

The two concept plans, shown in Chapter 3, included variations for where the play area should be located; created different ideas for a basketball court; introduced a location for a possible water play area; created different plans for parking; and suggested where walking routes could be located.

The steering committee provided this guidance to the consultant for the draft master plan:

Steering committee input

- Rehabilitate the woodlands and streams.
- Place play areas and a water play area near each other in the park interior.
- Provide full-court basketball along Sangree Road (not near the play areas for younger children. Fence it for safety.
- Add swings.
- Incorporate a wet-dry streambed.
- Try to make the parking lot as attractive as possible, and use rain gardens.
- Provide a perimeter walking trail .
- Adjust vegetative screens to be mindful of neighbors, and take care with the location of the perimeter pathway along the north edge of the park, where residential lots abut the property line.
- Add a park entrance near the intersection with Cherrington Drive.
- Do not fully fence in the softball field.
- Provide a boardwalk through the wetland area.

After this meeting, the commissioner, the parks and recreation director and the consultant met to review and interpret steering committee direction and neighborhood input.

Meeting #3, March 23, 2017

The consultant, the commissioner and the director of parks and recreation provided the committee with new information collected since the previous meeting. This included notes summarizing the ideas and concerns raised by some park neighbors; "lessons learned" from two communities with water play areas; additional information about the traffic study conducted in January for Sangree Road; and best practices for operating water play areas for health.

The committee reviewed the draft master plan and made recommendations for what to present to citizens at a public meeting scheduled for April 20. The group's direction to the consultant included:

Steering committee input

- Present the draft master plan with no changes.
- Additionally, prepare a variation that does not change the orientation of the softball field and that omits the basketball court.

Engagement with the General Public

Public Meeting #1 - Jan. 19, 2017

About 75 people attended the initial public meeting, held about one-quarter mile from the park at Berkeley Hills Lutheran Church. Commissioner Steve Korbel introduced the project and Eloise Peet, parks and recreation director, explained the Department of Conservation and Natural Resources to fund preparation of the master plan and water play area feasibility study.

The consultant facilitated a discussion about what was needed in the park and other concerns and opportunities. After listing those issues, the participants were given dots to rank the most important facilities or issues presented that night. The following is a table of the issues as ranked.

Sangree Park Master Plan
01-20-2017 Public Meeting
Prioritization Exercise

Votes	Potential Park Improvements
28	Trail - Accessible Walking
25	Natural Waterplay/Education Area (splash pad)
18	Stream Restoration/Beautification
16	Do Not Over Develop
12	Restrooms
11	5 – 12 year old play Area
8	Woodland Restoration
8	Habitat Restoration
8	Basketball – Full Court
8	2 – 5 year old Play Area
7	Trail – Natural Surface Walking
6	Trail – Neighborhood Connections
4	Nature Play Area
4	Medium Picnic Shelter – 72 person
4	Additional Shade
3	Softball Field - Dugouts
2	Sand Volleyball
2	Open Play Area
2	Picnic Table Grove
1	Softball Field - Bleachers
1	Softball Field - Overall Fence Improvements
1	Basketball – Half Court
1	Teen Space
1	Wayfinding & Signage
1	WiFi Access/Charging Station
0	Softball Field - Outfield Fence
0	Softball Field - Scoreboard
0	Small Picnic Shelter - 32 person
0	Large Picnic Shelter – 160 person
0	Outdoor Classroom/Amphitheater
0	Winter Activities/Warming Shelter

Public Meeting #2 - April 20, 2017

A second public meeting was held at Berkeley Hills Lutheran Church to review the draft master plan. About 35 people attended.

After an introduction by Commissioner Steve Korbel, the consultant presented a slide show of the process and the draft master plan, plus the variation plan requested by the steering committee and a phasing plan.

The consultant asked if there were any suggestions or comments, beginning with a show of hands regarding whether those in attendance want or don't want a water play area at the park. About 15-18 raised their hands to say they wanted the water play area, with an equal portion saying not.

Residents wrote down likes and dislikes about the draft master plan then, in turn, stated one thing most important to them.

This summary reflects the statements, with a few people adding more than one "strong opinion":

Stakeholder Interviews

The following people are some of those contacted for information about this project.

1. **Ross Township Police Department - Chief Joe Ley:** Safety and security of the park, traffic/speeding on Sangree Road
2. **Ross Township Zoning and Code Enforcement - Dominic Rickert**: Township requirements regarding use, parking lot size, landscape screening
3. **Ross Township Department of Public Works - Mike Funk**: Park maintenance
4. **Three Rivers Wet Weather - Beth Dutton:** Stream and runoff improvements
5. **Duquesne Light - Sandy Bushnell:** Easements, access and construction/design ramifications of transmission and distribution lines
6. **Leetsdale, PA spray pad - Joe McGurk, Borough Councilman**: Lessons learned from construction and operation of a water play area in public park
7. **Red Lion, PA spray pad - Dianne Price, Borough Manager**: Lessons learned from construction and operation of a water play area in public park
8. **High School Science program - Laura Clark**: potential interest in incorporating natural systems restoration in science curriculum
9. **North Hills School Board - Ed Wielgus:** Importance of successful park in Ross Township.
10. **Scouts - Mike Miller, Jill White, Julia Perkins**: Interest from Boy and Girl Scouts in troops' use of park or in helping with park improvements.
11. **North Area Environmental Council - Kathy Westman**: Stream and woodland ecological restoration

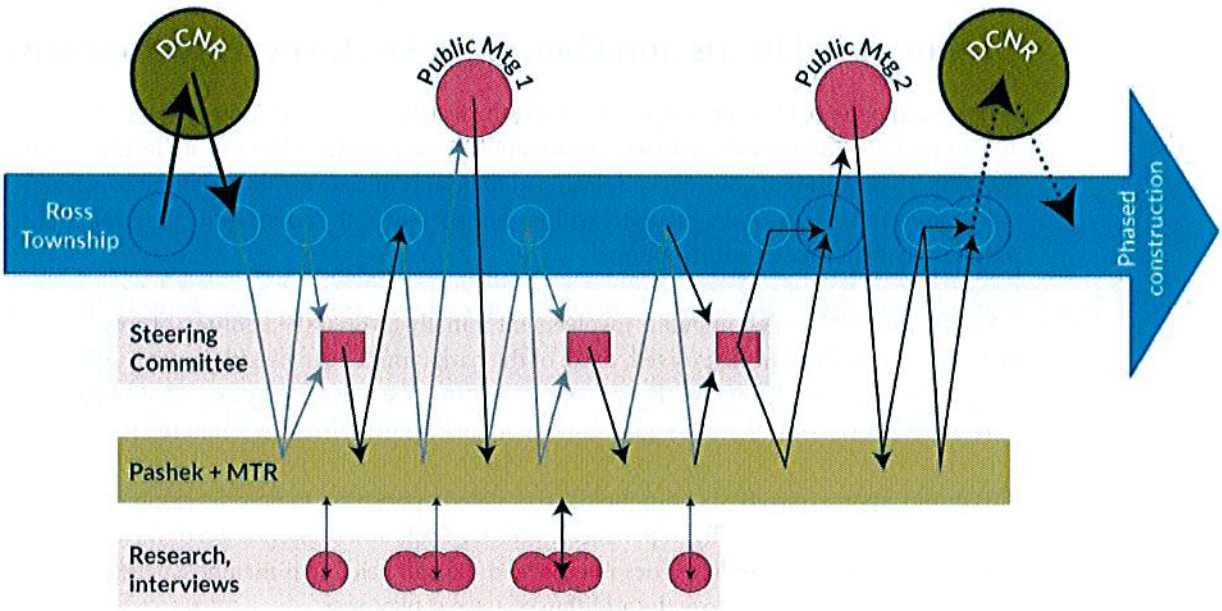
Conclusions from Public Input

Planning should focus on:

- Rehabilitating the stream and woodlands
- Creating features for people of all ages and abilities
- Incorporating a walking trail loop, plus community connections
- Respecting privacy and property of residents neighboring the park
- Improving safety by moving younger-child activities away from Sangree Road
- Keeping softball field but improving it and making it accessible
- Minimizing impact of additional parking
- Assessing the feasibility of adding water play area and restrooms
- Taking care not to over-develop

Strongly held opinions about draft master plan

Number of people holding the opinion	Item
9	Eliminate the water play area idea
8	Implement draft master plan as proposed
5	Retain the existing softball field orientation
4	Put basketball court in interior of park, not along Sangree Road
4	Include a perimeter walking trail
2	Minimize presence of and visibility of fencing
2	Incorporate/emphasize nature restoration
1	Retain location of play area where it is now, along Sangree Road
1	Do not include a perimeter walking trail
1	I like how the plan includes activities for many ages
1	Do not put boulders in water play area as kids will trip/climb and fall
1	Do not add parking
1	Just upgrade the park the way it is
1	Put in a sidewalk along Sangree
1	Add security camera on restroom building



This graphic visually depicts the master planning process, with public input in pink.

Community Discussion Over Park Features, Development

A key requirement of this project was to assess the feasibility of developing a water play area at Sangree Park and provide sufficient information so that elected officials can decide how to proceed. The consultant considers a splash pad to be appropriate for the location, consistent with community goals, and apparently within the capacity of the community in terms of cost, particularly with phased construction.

Citizens who participated in public involvement initially favored the addition of a water play area, but as the process evolved, more of the park's immediate neighbors joined the conversation to actively oppose that possibility, stating that a water play area could add traffic, draw visitors from outside the neighborhood, or alter homeowner views into the park.

This group, approximately six households, also stated opposition to new development in the park in general, and especially to perimeter walking trails and reorientation of the ballfield. The master plan presented here does not reorient the ball field, does include a perimeter walking trail, and does propose the addition of a water play area.

Involvement of Township Board of Commissioners

Ultimately, decisions about development at the park and public expenditures are the responsibility of the Ross Township Board of Commissioners. Debatable points left to commissioners upon completion of this master plan are "how much development is the right amount" and "how much spending should go into this park." These arise from some citizens' and officials' concerns about township finances and tax rates, and from vehement complaints from some park neighbors about the proposed new amenities as noted above.

The plan was well received when the consultant presented a final update to the Ross Township Board of Commissioners on July 3, 2017. That said, several owners of property adjacent spoke up to express concerns about the proposed reorientation of the field and proposed relocation of the basketball court. Commissioners said they looked forward to receiving the final plan.

Following the consultant's final update to the board of commissioners, the township parks and recreation director asked the consultant to complete the master planning process with the assumption that the water play area will be included.

The Ross Township Board of Commissioners will consider all aspects of this master plan, including determining whether a water play area is financially feasible for the community.

Chapter 3: DESIGN RECOMMENDATIONS AND IMPLEMENTATION

The first step in this planning process was to better understand the site through an investigation of the opportunities and constraints that the site provided. The next step was to develop initial design ideas based on input provided at public meetings, the steering committee, key person interviews and township staff. After that, the work blended understanding of the site and community needs into a coherent strategy for development. Throughout the design process, it was important to bear in mind all federal, state and local laws and rules that apply.

Synthesis of ideas from facilities and landscape analysis

When the analysis of landscape capabilities and possibilities is considered through a prism of input from citizens, officials and the steering committee, designers can create plans that best match opportunities and goals with actual conditions on the ground.

The chart on Page 33 shows how design opportunities were considered.

An important aspect of park master planning involves creating opportunities for everyone. All new or renovated features planned in an improved Sangree Park must comply with federal, state and local law and rules governing accessibility. This ensures that citizens of different ages and abilities can enjoy the park. Park master planning incorporates the requirements of the Americans with Disabilities Act (ADA), and the next section of this chapter explains the required standards in view of the opportunities and challenges found in the park landscape.

Accessibility

An important part of the planning of facilities is the need to meet the ADA requirements for park facilities. This is a requirement of DCNR funding but is also important so that our parks are inclusive for all populations. The following touches on just a few requirements of ADA as they relate to park development.

Accessible Routes

All accessible features must be connected by an Accessible Route. Those requirements include:

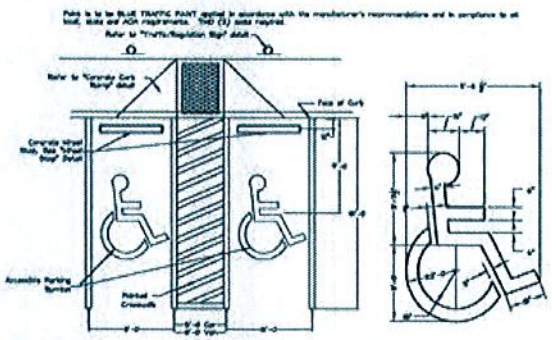
- Less than 2% cross slope
- Less than 5% grade running slope, unless ramped
- If running slope grade exceeds 5%, must be ramped, handrails provided and landings every 30 feet. Vertical changes in level can be no more than ¼". Stairs do not meet this requirement and cannot be part of an accessible route
- Surface must be firm, stable, and slip-resistant
- Width: DCNR requires a 5'- 0" minimum accessible route width to allow for two-way travel and passing. This is wider than the width required under the 2010 Standards
- All areas of park activity must be connected to accessible parking by an Accessible Route
- The Accessible Route should connect to the border of each area of park activities.

Allowable Running Slope of Trail		
Steeper Than	But not Steeper Than	Maximum Length
1:20	1:12	200 feet
1:12	1:10	30 feet
1:10	1:08	10 feet

Accessible Parking

Accessible Parking spots must be adjacent to an Accessible Route. All accessible elements must be connected to accessible parking by an accessible route.

- Paving required in parks, not at trailheads. (Note, while ADA does not define a surface for accessible parking other than it needs to be stable, firm and slip resistant, DCNR has decided that accessible parking should be surfaced with bituminous, concrete or unit pavers to allow for painting of the accessible graphic on the parking surface)
- Clearly marked with correct signage
- Car spaces should be at least 96" wide
- Van spaces should be at least 132" wide and next to a 60" wide access aisle
- Access aisle should adjoin an Accessible Route
- Required number of accessible spots depends on



Accessible Parking - Car and Van Stall

Summary of Design Decisions

Facility	Analysis	Design Decision
Relationships to natural resources	The planning grant focused on "Natural Resources Conservation and Water Education." Citizens reiterated the importance of rehabilitating existing woodlands and streams at the site and providing access opportunities to all natural areas of the park.	Concepts would show different options for paths to or through natural areas.
Water play area	One specific element of the planning grant was for the consultant and community to explore the feasibility of incorporating a water play area into the park master plan. This issue was the most debated within the planning process due to community concerns about overdevelopment, costs, traffic, and operation and maintenance requirements. The Ross Township Board of Commissioners, whose membership was altered by elections that took place while this master plan was under development, will ultimately make a determination on that single feature. In fact, the master planning schedule was extended a few months to accommodate commission consideration. Ultimately, the master plan was completed with the assumption that a water play area would be included. However, this may change with a future commission vote.	Concepts would include a water play area because this was considered a likely priority for the community from the outset. After much debate, the water play area was included in the master plan; however, this issue remains unsettled upon completion of this report.
Priority uses	Citizens strongly favored improvements that benefit people of all ages and abilities, with a walking loop as the most desired feature.	Concepts would show various route options. Final draft master plan would include most desired route.
Softball field	Reorientation of the softball field would improve the facility's use and value for team play as it would accommodate sun-shade patterns and proximity to parking. Some Lee Road neighbors of the park expressed concern about property damage from long balls.	Concepts showed reorientation of the ballfield as best for players and spectators, and less expensive. At the request of township officials, a variation of the master plan was developed to retain the existing orientation.
Accessibility	Only one element of the park, the picnic shelter, currently complies with Americans with Disabilities Act requirements, and this situation needs to be remedied.	Concepts included appropriate accessible routes to park features as required by the ADA.
Parking demand	A larger and more organized parking lot was part of the planning. The new size and configuration depended largely on whether a water play area were included.	Concepts offered different parking lot designs. The master plan reflected the parking lot size necessitated by water play area decision.
Screening	Some residents whose properties are quite close to the park voiced concern about a potential for increased noise, intrusion and vehicular traffic if the park were significantly improved. Design elements, including vegetative screening, implied and actual barriers, and other features were included with particular attention and care.	Concepts and master plan took into account conflicting preferences by neighbors, such as: fences desired as barriers vs. no fences because they are unsightly; 20-foot tall seasonal nets to protect against long balls vs. no nets because they impede views; strong vegetative screens to prevent intrusions vs. gentle or implied barriers that enable access by neighbors into the park.
Basketball	A basketball court was considered an important feature in the park master plan, with the community preferring a regulation-size full court. The space required for this feature and desired separation from younger-child play areas impacted other decisions. Fencing was debated on one hand as desirable for player safety and fun, but as visually unattractive in the view of some neighbors.	Early concepts showed a half-court option, but that was roundly considered undesirable. Master plan retained a full-size basketball court, with fence, along Sangree Road. Fence should be black vinyl to minimize visual impact.

the total number of spaces in the facility. Typically 1 accessible space for each 25 spaces up to 100 spaces; 1 accessible space for each 50 spaces for the next one hundred spaces and so on. Of the accessible spaces, 1 van accessible space is required for each 6 accessible spaces.

- Fine amounts should be posted under the accessible parking sign

Benches

- Must provide a "bump-out" space next to the bench
- Space must be firm, stable, and slip-resistant
- No smaller than 30" by 48"
- Oriented to allow a person in a wheelchair to face the same direction as people using the bench
- Without any overlap with the accessible route

Fixed Picnic Tables

- The 2010 Standards only apply to picnic tables that are fixed in place
- 5% of spaces at fixed picnic tables must be accessible
- Tabletops must be between 28 and 32 inches high
- Must provide knee and toe clearance and clear floor space at accessible spots. See 2010 Standards, Sections 305, 305, and 902

Trails

Distinctions between Trails, Outdoor Recreation Access Routes, and Accessible Routes:

- A trail is used primarily for recreational purposes
- Accessible Routes and ORARs are used primarily to connect elements, spaces or facilities within a site
- Trails are held to less stringent standard than Accessible Routes

Trail signs, where provided, should include:

- Length of the trail or trail segment
- Surface type
- Typical and minimum tread width
- Typical and maximum running slope and

Conditions for Departure and Exceptions from the Draft Final Accessibility Guidelines for Outdoor Developed Areas

Compliance will not always result in facilities accessible to all persons with disabilities. Therefore the guidelines recognize this by providing for conditions for departures from the required technical provisions. The Access Board permits departures from certain technical provisions where at least one of four conditions is present for trails, picnic and camping facilities, and beaches.

The four conditions that permit departures from specific technical provisions include:

1. Where compliance would cause substantial harm to cultural, historic, religious, or significant natural features or characteristics
2. Where compliance would substantially alter the nature of the setting, the purpose of the facility, or portion of the facility
3. Where compliance would require construction methods or materials that are prohibited by federal, state, or local regulations or statutes
4. Where compliance would not be feasible due to terrain or

Sustainable Design - Defined

The Master Plan strives to include sustainable design in creating the vision for the park. A sustainable park is one where the natural resources are protected, where wildlife habitat is improved, and when human recreation uses and maintenance practices do not conflict with the environment, but instead enhance them. Benefits of sustainable parks include:

Health and Safety:
Researchers from the University of Illinois have discovered that time spent in nature relieves mental fatigue and related feelings of violence and aggression. They have found the more diverse and rich an environment is in natural resources, the higher the learning opportunities are for children.

Economic:
Natural vegetation and plantings with native species provide stormwater and flood control by absorbing and storing stormwater runoff and pollutants. Such a reduction in runoff may prevent flooding, property damage, erosion, and habitat loss.

Environmental:
Integrating parks with streamside corridors, wetlands, forested areas, and other open spaces will increase its ecological value over time. According to the U.S. Forest Service, one tree can generate $31,250 worth of oxygen, provide $62,000 worth of pollution control, recycle $37,500 worth of water, and control $31,250 worth of soil erosion over a fifty year lifespan.

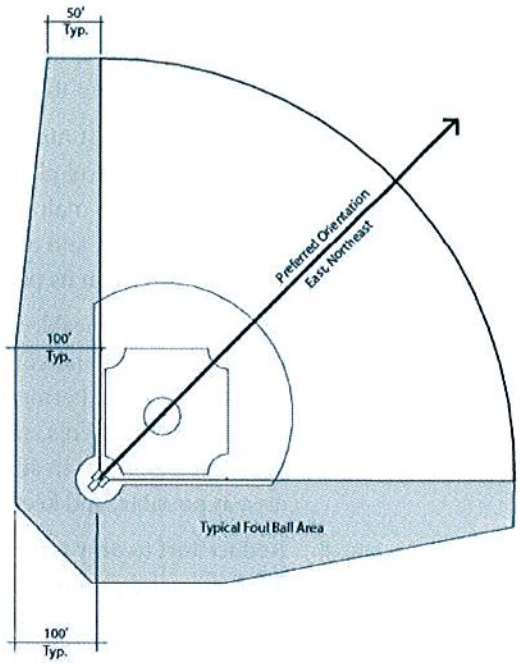
International Building Code (IBC)

Recently, we have run into building code reviewers who are interpreting the accessibility requirements of that building code to site improvements. These requirements, although similar to ADA, can be interpreted as more restrictive, primarily for access to a public way. The IBC requires an

accessible route from the "public way" into the park and the accessible activities. Usually a public way is an adjacent public street. This requirement is more suited for urban environments and can be challenging to develop an accessible route into a suburban or rural park from the public way when that public way does not have sidewalks or bus stops.

Ballfields

The preferred orientation established by governing bodies is as follows: a line from home plate through the pitcher's plate to second base should be facing east, northeast, as shown in the diagram at right. However, the only field orientation that PA DCNR will not fund is northwest. Sangree Park's current orientation is southeast.



Ways of Achieving Sustainable Park Development

Park Sustainability Guidelines

"Creating Sustainable Community Parks, A Guide to Improving Quality of Life by Protecting Natural Resources", published by the Pennsylvania Department of Conservation and Natural Resources (DCNR) in 2007, provides valuable recommendations regarding how to implement sustainable practices into design, maintenance, and operations of parks across the Commonwealth. The guide can be obtained from www.dcnr.state.pa.us/brc/GreeningPennsylvania.pdf

These practices are based on the following principals:

1. Retain as much of the pre-existing landscape as possible during new construction, including the soil, rocks, native vegetation, wetlands, and contours. This will minimize disturbances, which can open up an area to invasive species. It can also keep costs down, as fewer new plants, soil amendments, and habitat enhancements will be needed.
2. Maintain high quality soils that will hold water and supply plants with proper nutrients. During construction, leave as much existing topsoil as possible. When new soil is brought in, ensure that it is certified weed free, in order to prevent the spread of new invasive species. Using compost and other natural products for mulch and fertilizer will help enhance the soil and feed the native plants. Good quality soil will reduce the need for fertilizers and supplemental watering.
3. Connect new landscape components with the surrounding native vegetation to create larger contiguous areas of habitat. Many wildlife species need large ranges to find adequate food, mates, and shelter. By reducing the amount of roads, parking lots, and turf areas, or by placing these together, habitat quality will be enhanced.
4. Create natural storm water management systems and other green infrastructure, such as rain gardens and swales of native grasses. These systems help to minimize downstream flooding, recharge and filter groundwater, and are more cost-effective and environmentally-sound than man-made systems of pipes and storage tanks.

5. Protect wetlands from disturbance and fill. Avoid placing construction projects, day-use areas, and roads/parking lots near or in wetlands. Natural wetlands provide many benefits to the environment that cannot easily be duplicated with man-made ones.
6. Use integrated pest management (IPM) strategies to minimize the use of chemical pesticides to control plant and insect pests. IPM is an ecologically-based approach to pest control that helps maintain strong and healthy plants. IPM can include the use of traps, sterile male pests, and quarantines. (The township currently does not use pesticide and herbicide sprays in its parks.)
7. Minimize impermeable surfaces like roads, parking lots, and paved trails. Consider replacing asphalt and concrete with permeable pavement, mulch paths, gravel lots, and native vegetation. Permeable surfaces help to recharge ground water, reduce erosion, lessen flooding events, and filter out pollutants. When impermeable surfaces must be used, arrange them in an area where they will not fragment habitat, make them as small in area as possible, and keep them away from water bodies.
8. Reduce turf to only those areas essential for recreational and other human use activities. Turf offers little habitat benefit and is not as effective as many native plants in pollution filtration, flood prevention, and erosion control. In addition, turf maintenance can have negative impacts on the surrounding environment and can require lots of mowing, watering, and fertilizing. Replace non-native turf grasses with native warm season grasses, which, once they are established, have lower maintenance needs.
9. Use native plants in riparian buffers around any surface water body, including wetlands. Riparian buffers help to filter pollutants before they reach water bodies, and the vegetation discourages nuisance geese from staying in the area. Roots from riparian vegetation also prevent erosion of soils into the water body and minimize flooding events. Shade from these buffers acts as a temperature control for the water body, which enhances habitat value for aquatic organisms. The food and shelter values of these buffers also enhances habitat. In addition, by selecting the right kinds of plants, the scenic views of the water bodies can be enhanced.
10. Identify and remove invasive plant species whenever possible. Invasive plants have a number of detrimental effects on natural habitats. Most invasive plants grow so densely and spread so rapidly that native vegetation is choked out.

Green Principles for Park Development and Sustainability

DCNR has recently developed a set of principles to help communities develop practical projects that conserve resources, generate economic and environmental benefits, and become healthier more sustainable places to live. More information can be found at http://www.dcnr.state.pa.us/brc/grants/indexgreen.aspx. The following are the five basic principles:

- Principle #1: Maintain and Enhance Trees and Natural Landscaping
- Principle #2: Connect People to Nature
- Principle #3: Manage Stormwater Naturally
- Principle #4: Conserve Energy
- Principle #5: Integrate Green Design and Construction

Reduce Park Waste

The master plan recommends that the township attempt to reduce waste from the park. The park should offer recycling containers near each facility or restrooms, picnic shelters, individual picnic tables and other use areas. Containers should clearly state what items are recyclable, per local recycling programs.

Minimize Grading and Site Disturbance

The final master plan strives to minimize grading by locating proposed facilities on the most level parts of the site. The phasing plan recognizes that the most significant site disturbances will be the strategies to restore the stream channels. Thus, construction of the culvert and bridge on the north-south tributary should occur as part of the streambed restorations. This will facilitate site access for subsequent phases.

Improve Wildlife Habitat

This master plan recommends that a forest rehabilitation and management plan be prepared with the goal of improving wildlife habitat in the park. The plan should be developed in cooperation with the DNCR Bureau of Forestry's Forest Stewardship Program. This program is a federal and state partnership that assists landowners in the completion of plans focusing on sustainable management of the forest and its related natural resources. Limited cost share funding is currently available to offset the cost of preparing a Forest Stewardship Plan.

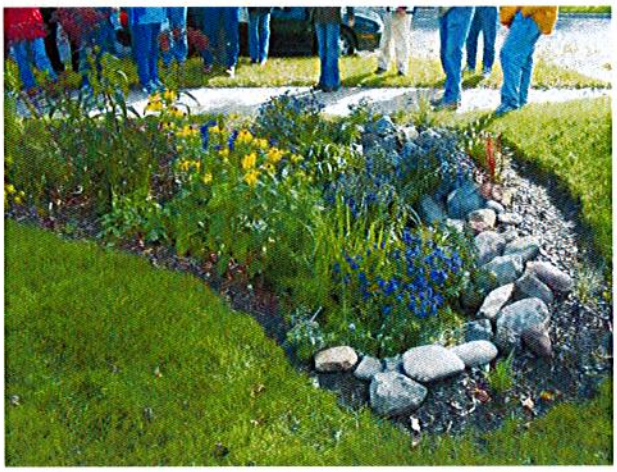
Forested areas should be maintained and improved to encourage wildlife to use the park. Most importantly, the township should establish a policy to remove undesirable invasive species while retaining native brush and understory plants that are essential to wildlife.

Minimize Impervious Surface Area

The master plan recommends that impervious surface area be kept to a minimum throughout the park to reduce stormwater runoff and initial costs. The width of parking aisles and stalls should be minimized. Stabilized turf, used for parking stalls where possible, allows stormwater to infiltrate into the soils below, and therefore reduces the volume of stormwater that will need to be managed. Remaining runoff shall be directed to bio-infiltration swales.

Implement Rain Gardens / Bio-infiltration Swales

Parking on the park site should include areas along the parking lot perimeter containing rain gardens, or bio-infiltration swales. Rain gardens are shallow planted swales that help to retain, filter, and infiltrate stormwater runoff into the underlying soil rather than channeling it into piping systems. The Master Plan recommends the use of rain gardens / bio-infiltration swales in park development.

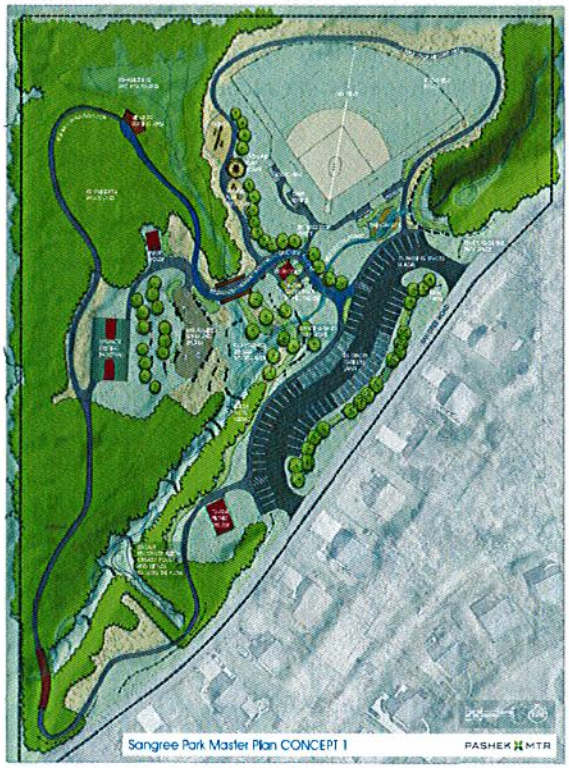


Creating Design Concept Plans

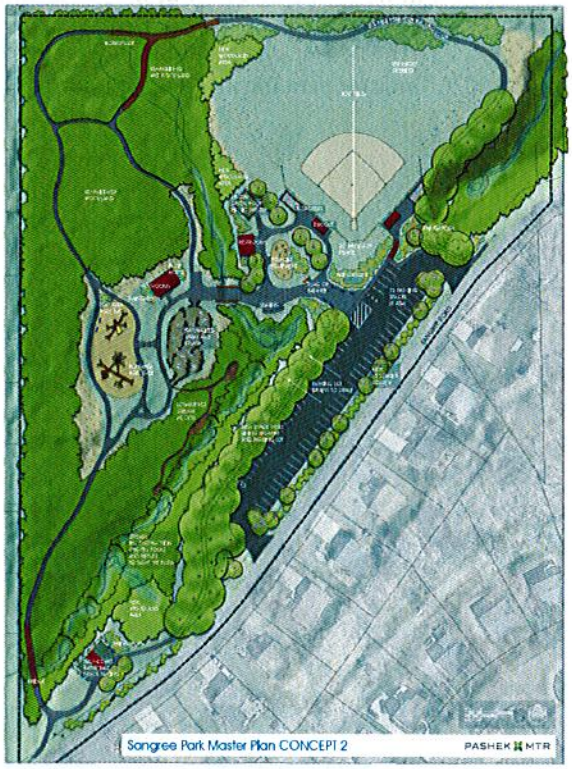
The study committee reviewed public input and a site analysis plan that showed difficult areas (steep slopes, potential wetlands) and opportunity areas (where development could occur with minimal disturbance). The study committee later reviewed two concept plans that offered distinct visions for the park.

This fostered discussion about community goals, and decisions about what changes are desired and not.

Both concept plans emphasized woodland and stream restoration, and suggested keeping the softball field, adding a water play area, and providing sufficient parking.



Concept Plan 1



Concept Plan 2

Draft Master Plan

Based on feedback from the steering committee on the concept plans, Pashek+MTR worked to fit the proposed facilities into the site in the preferred orientation and with sufficient parking provided for all of the facilities.

The consultant developed a proposal, shown on Page 42.

The steering committee then requested variations that would not reorient the baseball field but keep the current alignment, and that would omit basketball along Sangree Road. Both requests stemmed from opposition by some immediate neighbors to these development features. Later the basketball court was again included.

The master plan requested by the steering committee appears on Page 43. Please refer to that master plan illustration, and subsequent pages that explain specific site recommendations.

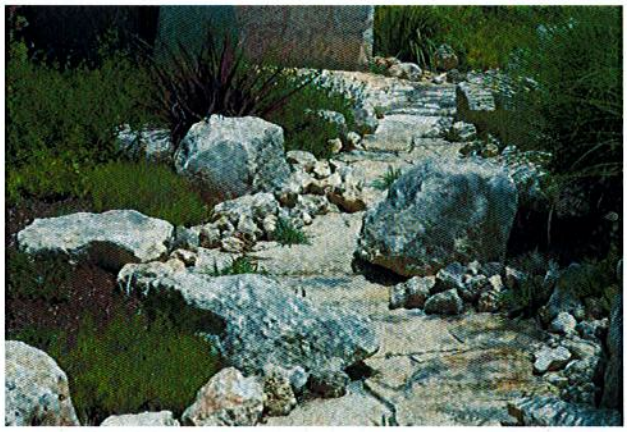
The master plan design presented here is that initially recommended by the consultant. Ross Township selected a variation of this plan, shown on the facing page, that does not reorient the softball field.

This is the Draft Master Plan shown in detail on subsequent pages.

Site Recommendations

Park Entrance area

A wide walkway enters the park from the parking area. This 16-foot-wide route allows for emergency and park-maintenance vehicles to access the park interior. However, pedestrian access is the primary goal. The walkway first crosses a wet-dry streambed that serves double duty as a stormwater management feature and nature play area. The main walkway branches left to the park interior while smaller paths turn right toward the softball field. This area also offers seating and a green roof picnic shelter. Allowances for the right-field foul line influence the siting of the shelter.

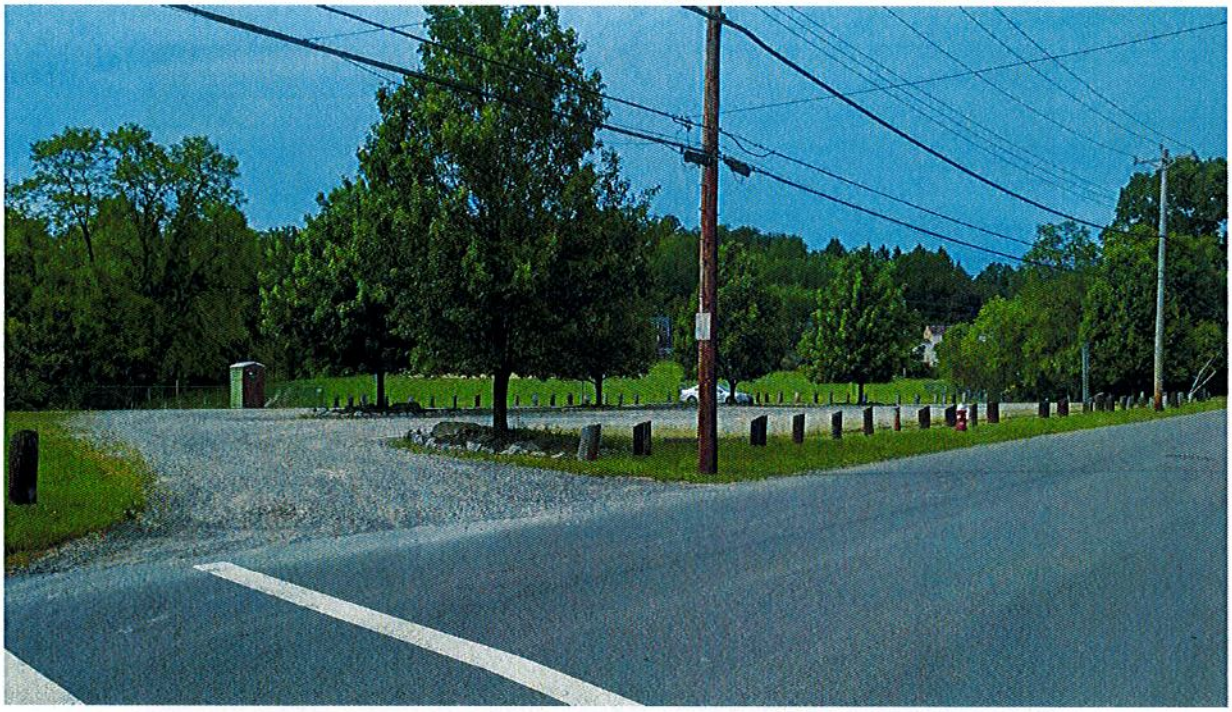


Softball Field

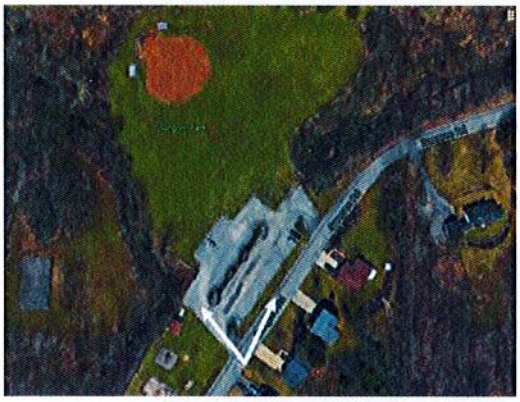
Improvements include home- and away-team benches and spectator bleachers, with accessible routes. Infield fencing protects spectators from foul balls. This orientation allows for a 200-foot right field outfield, and 225-foot center and left field, delineated by a 4-foot, black chain link fence. This fence would have a seasonal 16-foot tall mesh extension to protect spectators, park users and vehicles in the parking lot.

The park's perimeter walking trail roughly parallels the left field line. Between the trail and the neighboring residential yards lies an easement held by Duquesne Light for transmission and distribution lines. No plants that grow taller than 15 feet may be planted in this area. To meet those requirements while also addressing neighbors' concerns that people will wander onto their properties, this master plan suggests mass plantings of low-growing shrubs and grasses. These planting beds will require little maintenance and still create a gentle visual and physical barrier rather than a "wall."

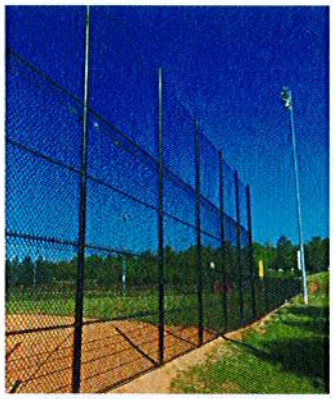
The consultant had recommended reorienting the field to make it better conform with guidelines for athletic fields in terms of solar orientation, to enable a uniform 225-foot outfield, and to place team and spectator areas closer to parking for convenience and accessibility. However, concerns voiced by neighboring residents led Ross Township officials to favor allowing the current orientation to remain.



Above, a view of the existing park entrance area from Sangree Road from the vantage point shown in the locator, below.



On facing page, a rendering of the same view showing a redesigned and reorganized parking lot, low-growing barrier plants, reoriented softball field as initially recommended by the consultant, and new park entrance features.



These images show softball field amenities, such as safe and accessible bleachers and dugouts, and black vinyl fencing that has minimal visibility in the landscape. Also shown are some examples of massed plants that stay low but create a visual edge.

Perimeter pathway

The proposed pathway that circumvents the park forms a 0.5-mile loop. Surfaced with compacted limestone, the path will be 6 feet wide, a comfortable size for two people walking abreast. In the wet woodland area in the northwest corner of the park, about 150 feet of trail will be boardwalk. The trail will follow the western edge of the park to the play area. At the southwest corner of the park, near the Sangree Road-Cherrington Drive intersection, a bridge over the stream will create a new entrance to the park. Seating should be provided along the trail.

Above, a view of existing conditions at the park , looking from east to west along the northern edge, with the softball field infield in the distance. The vantage point of this photograph is illustrated below.

On facing page, a rendering of the same view, shows a reoriented ball field as initially proposed by the consultant, low-growing barrier plants, a 20' black net outfield fence (seasonal), and a compacted limestone walking path.

Play facilities

New play facilities will be built in the space now occupied by the basketball court. A naturalized water play area will be constructed downhill from the court on what currently is an open lawn area.

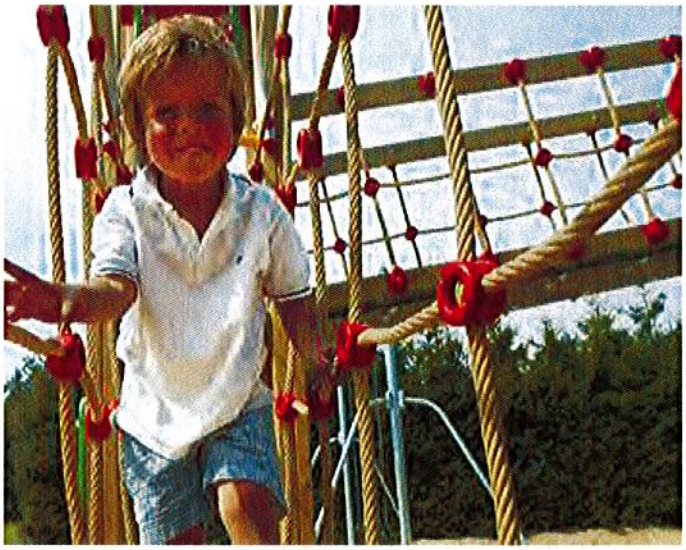
A restroom building will be erected nearby, as this is likely to be the busiest area of the park, and because water and sewer utility connections will also be needed for the water play area. This building will incorporate a maintenance storage area and pump house necessities for the water play area.

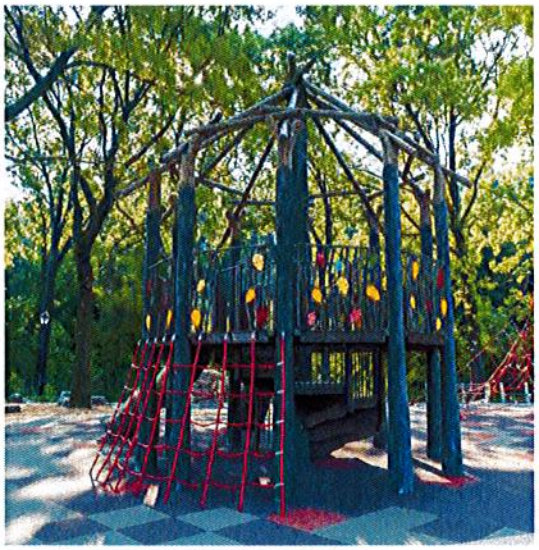
The wide pathway from the entrance area that extends over the "land bridge" will continue as a 6-foot-wide concrete path that is fully accessible.

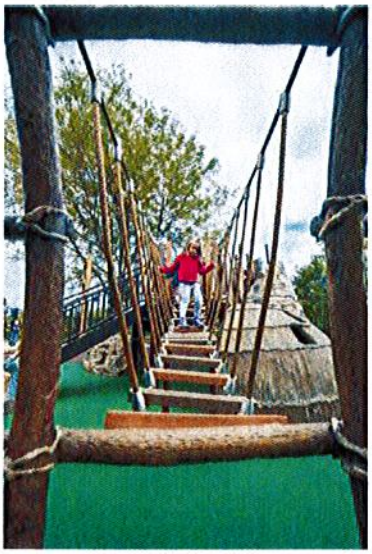
Play features

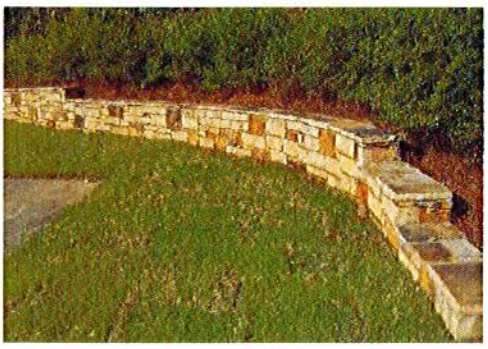
The play areas will include features designed for ages 2-5 and 5-12, and two bays of swings. For older children, non-traditional play equipment is suggested, such as climbing ropes or a structure such as that shown below right that evokes a tree house. For younger children, some features could be slides and scrambling structures.

Since the play area will be installed in a space that is already graded into a slope, a low retaining wall can serve as seating along the uphill side.





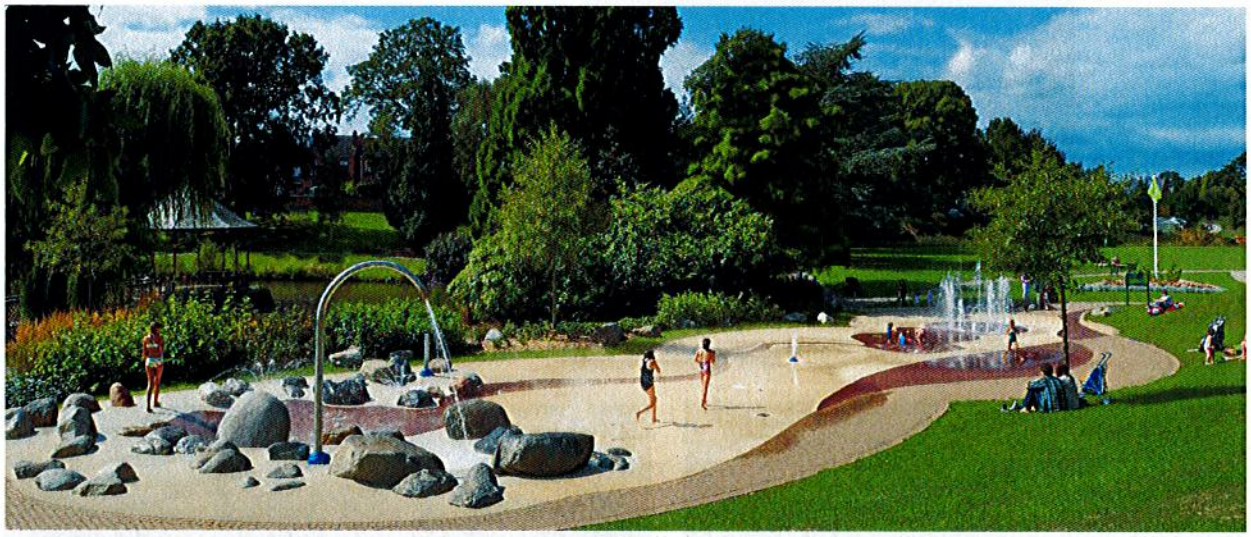


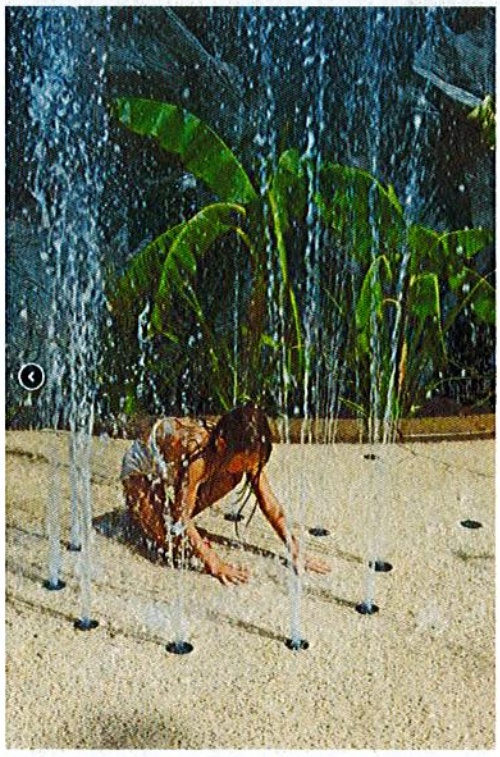


Spray features

This plan proposes a naturalized water play area to operate from May to September, and provide a place to scramble or sit during other months. (See Water Play Area Feasibility in next Chapter.) In keeping with the overall theme of the park as a location for water conservation and water education, the water play area would operate with a recirculation system in which water is captured via central drains, then purified and reused. This system costs more up-front, but recoups the difference in the cost of water.

The water play area would include water jets, bubblers and sprays operating on a daily timer and on-demand basis so that water does not run continually. Water features would not be the "industrial" types that spray from oversize, primary-color daisies. Rather, they would be jets, sprays and bubblers mounted in the ground or in real or manufactured boulders.

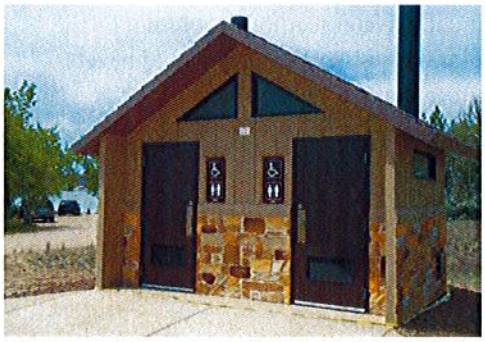




Restrooms

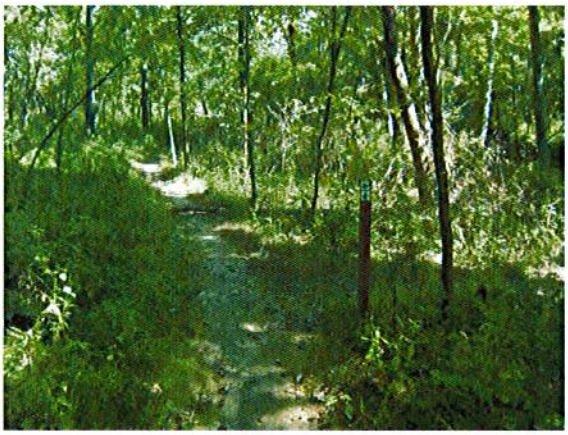
A restroom building would be provided, with a timer governing whether the doors are opened or locked. This plan suggests equipping the building with security lighting and camera. The addition of restrooms are recommended regardless of whether the community opts to build a water play area.

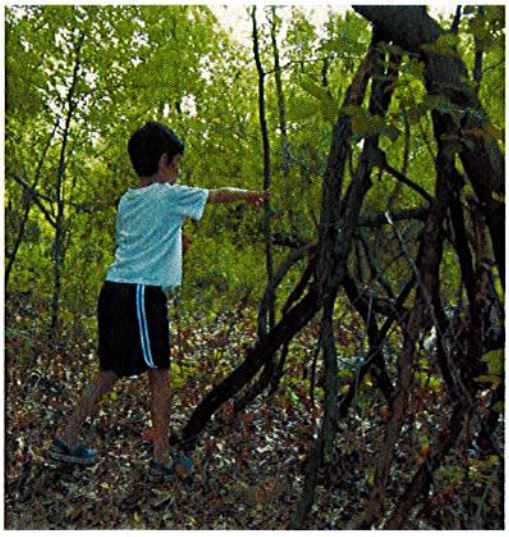
The pump house for water play area operations and maintenance storage would be incorporated into the structure, off to one side of the restroom entrances.

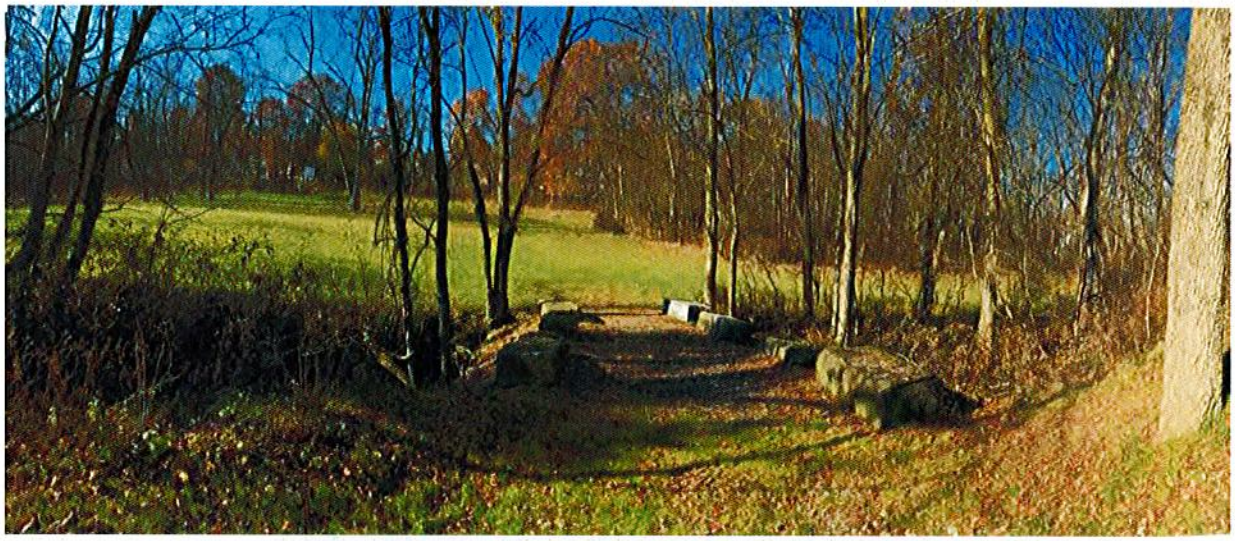


Stream and woodland access

A natural surface trail will afford access to the rehabilitated stream. Small, natural gathering or play areas would be available.







Above, a view of the park interior, including the existing basketball court in the distance, and open lawn area. This photograph is from the vantage point shown below.

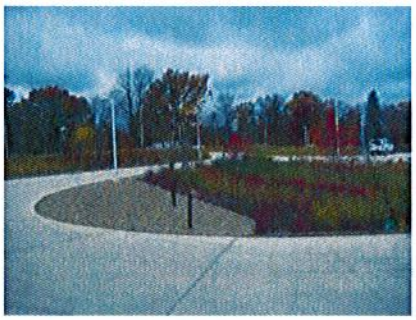
On facing page, a rendering of the same view, showing the reconstructed bridge, the water play area, accessible pathway, play area and restroom building.

Sangree Road Frontage

The main features along Sangree Road will be the perimeter trail, a regulation size basketball court, expanded parking and plantings that provide a barrier and visual screening. Boulders and low-growing shrubs will provide a barrier between the road and perimeter pathway.

The full-size basketball court is designed for this Sangree Road location to separate the park's facilities for older children/teens and the play areas for younger children. Also, the park interior does not have sufficient space for a full-size basketball court, play areas and a water play area. The court surface should be pervious asphalt and the backboard acrylic, as these muffle sound. Sideline fencing is 10 feet and goal fencing is 15 feet tall and constructed of black coated chain link.

The parking lot is reorganized and redesigned to provide smooth, safe entry and exit to Sangree Road. It includes 59 spaces, of which five are designated ADA accessible parking. The parking lot surface is asphalt and will be constructed to shed water into bioretention swales for stormwater management. Alternatively, some portions of the parking lot could be constructed as reinforced turf for stormwater infiltration.


The park's perimeter pathway passes along the inner edge of the parking lot so that it also serves as a collector path for motorists.

Vegetative screening along Sangree Road is constrained by overhead wires. Plants selected for this purpose and location should not exceed 15 feet height at maturity. However, there are many attractive shrubs, grasses and small trees that would be suitable.



Estimate of Probable Construction Costs

This estimate assumes that the entire project would be based on prevailing wage rates. The estimate is based on a master plan, so some costs are simply budget items until greater detail is developed for the first phase of construction. The total cost is estimated to be about $3.8 million including a 10% contingency and design and permit fees.

It is hoped that public or other non-profit grants and in-kind services will reduce the cost of the park improvements to the township. It is also assumed that the project will be built in phases over time as money is available. A chart detailing the estimate of probable construction costs appears below, with detail on subsequent pages.

A NOTE ABOUT DESIGN CHOICES AND COST DIFFERENCES.

As mentioned previously in this report, the consultant had recommended a design that included a reoriented softball field. This version of the master plan design (shown on Page 42) would have improved the solar orientation for players, and provided more convenient access to player and spectator areas, since home plate would be situated near the parking lot. That recommended version of the master plan design would require about $211,000 lower anticipated construction costs than those shown on following pages. The difference in costs is primarily driven by these factors:

- Amount of concrete paving needed to provide accessibility to player and spectator areas;
- Siting of shelter to accommodate field size creates need for a retaining wall foundation for the shelter;
- Siting of main pathway into park interior to accommodate field size forces a longer bridge to the spray/play area.

Sangree Park Cost Summary PASHEK MTR

7/31/2017

Master Plan Component	Cost
Forest and Stream Restoration	$ 421,654
Removals and Site Preparation	$ 24,444
Access Drive and Parking	$ 399,371
Sangree Road Frontage	$ 174,043
Park Entrance, Green Roof Shelter and Vicinity	$ 670,475
Ballfield	$ 430,009
Nature Spray Area	$ 390,719
Restroom / Maintenance Storage Building	$ 441,000
Play Area	$ 365,636
Basketball Court	$ 118,346
Outer Trails	$ 353,480
TOTAL	$ 3,789,176

Sangree Park

Opinion of Probable Construction Costs
7/31/2017

PASHEK MTR

Item		Unit	Unit Cost	Total
Forest and Stream Restoration				
Cut and salvage dead trees for streambed or other uses on-site	1	LS	$15,000	$ 15,000
STREAM				
Permitting - PA DEP & U.S. Army Corps of Engineers	1	LS	$50,000	$ 50,000
Bank layback to 3:1 max				
1. Topsoil removal (1,248 lf x 6'wide x 0.5' deep)	139	CY	$30	$ 4,160
2. Excavation (1248 lf x 6' wide @ 3:1 and 1'deep	278	CY	$30	$ 8,340
3. Respread topsoil	139	CY	$20	$ 2,780
4. Seed and mulch all disturbed areas	3,698	SY	$7	$ 25,884
5. NAG P3000 erosion blanket or equivalent (1248 lf x 6' wide)	7,488	SF	$5	$ 37,440
Rock cross vane				
1. Stone ($35/ton and 6 tons per structure)	8	EA	$210	$ 1,680
2. Trench excavation ($200/hour and 3 hours/structure)	8	EA	$600	$ 4,800
3. Construction of vanes ($200/hour and 4 hours/structure)	8	EA	$800	$ 6,400
4. Erosion control (pump around) ($50/hour, 7 hrs/structure)	8	EA	$350	$ 2,800
J-hook rock vanes				
1. Stone ($35/ton and 3 tons per structure)	15	EA	$105	$ 1,575
2. Trench excavation ($200/hour and 2 hours/structure	15	EA	$400	$ 6,000
3. Construction of vanes ($200/hour and 2 hours/structure	15	EA	$400	$ 6,000
4. Erosion control (pump around) ($200/hour and 2	15	EA	$400	$ 6,000
5. Erosion control devices	1,248	FT	$20	$ 24,960
Construction management				
Construction survey (create file and field stake out)	12	Hours	$135	$ 1,620
Supervision of grading, structure placement, plantings	40	Hours	$135	$ 5,400
Zone 1 planting				
Reach 1 (480 LF x 2' high bank (6 lf) x 2 sides = 5,760 sf				
Reach 2 (60 LF x 2' high bank (6 lf) x 2 sides = 720 sf				
Reach 3 (380 LF x 2' high bank (6 lf) x 2 sides = 4,560 sf				
Reach 4 (120 LF x 2' high bank (6 lf) x 2 sides = 1,440 sf				
Zone 1 planting area total 12,480 sf (24" saplings @ 2' centers)	3,120	EA	$20	$ 62,400
Zone 2 planting				
Reach 1 (480 LF x 10'wide) x 2 sides = 9,600 sf				
Reach 2 (60 LF x 10'wide) x 2 sides = 1,200 sf				
Reach 3 (380 LF x 10'wide) x 2 sides = 7,600 sf				
Reach 4 (120 LF x 10'wide) x 2 sides = 2,400 sf				
Zone 2 planting area total 20,800 (36" banded saplings @ 5'	832	EA	$25	$ 20,800
STREAM RESTORATION SUBTOTAL				$ 294,039
FOREST				
Forest reseeding - (172,150-39,320-20,800=12,030 SF)	1,337	SY	$7	$ 9,357
Trees (1.5" cal. @ 15' centers)	55	EA	$350	$ 19,250
Saplings and shrubs (36" banded @ 5' centers)	480	EA	$25	$ 12,000
FOREST RESTORATION SUBTOTAL				$ 40,607

Sangree Park

Opinion of Probable Construction Costs
7/31/2017

PASHEK MTR

Item		Unit	Unit Cost	Total
FOREST AND STREAM RESTORATION SUBTOTAL				$ 334,646
Contingency (10%)				$ 33,465
Mobilization and Stakeout (6%)				$ 20,079
Design, Construction Documentation & Construction Admin. (10%)				$ 33,465
FOREST AND STREAM RESTORATION TOTAL				$ 421,654
Removals and Site Preparation				
Site clearing	1	LS	$7,500	$ 7,500
Removal of existing shelter	1	LS	$2,500	$ 2,500
Basketball court removal	3,600	SF	$2.50	$ 9,000
Baseball Field Fence Removal	200	LF	$2	$ 400
Removals and Site Preparation Subtotal				$ 19,400
Contingency (10%)				$ 1,940
Mobilization and Stakeout (6%)				$ 1,164
Design, Construction Documentation & Construction Admin. (10%)				$ 1,940
REMOVALS AND SITE PREPARATION TOTAL				$ 24,444
Access Drive and Parking				
Earthwork	1	LS	$50,000	$ 50,000
Bituminous paving	2,550	SY	$60	$ 153,000
Wheel stops	57	EA	$200	$ 11,400
Pavement striping	1	LS	$2,500	$ 2,500
Accessible pavement markings and signage	5	EA	$400	$ 2,000
Concrete walkways	339	SY	$125	$ 42,361
Stormwater management	1	LS	$30,000	$ 30,000
Park sign	1	EA	$3,500	$ 3,500
Trees	18	EA	$400	$ 7,200
Perennials/groundcover	1	LS	$15,000	$ 15,000
Access Drive and Parking Subtotal				$ 316,961
Contingency (10%)				$ 31,696
Mobilization and Stakeout (6%)				$ 19,018
Design, Construction Documentation & Construction Admin. (10%)				$ 31,696
ACCESS DRIVE AND PARKING TOTAL				$ 399,371

Sangree Park

Opinion of Probable Construction Costs
7/31/2017

PASHEK MTR

Item		Unit	Unit Cost	Total
Sangree Road Frontage				
Earthwork	1	LS	$10,000	$ 10,000
Walkway	447	SY	$110	$ 49,133
Seeding	2,274	SY	$7	$ 15,921
Trees	34	EA	$400	$ 13,600
Shrubs @ 4'O.C.	55	EA	$65	$ 3,575
Perennials/Groundcover	1	LS	$25,000	$ 25,000
Boulders	30	EA	$200	$ 6,000
Park sign at SW corner	1	EA	$3,500	$ 3,500
Fence - split rail	285	LF	$40	$ 11,400
Sangree Road Frontage Subtotal				$ 138,129
Contingency (10%)				$ 13,813
Mobilization and Stakeout (6%)				$ 8,288
Design, Construction Documentation & Construction Admin. (10%)				$ 13,813
SANGREE ROAD FRONTAGE TOTAL				$ 174,043
Park Entrance, Green Roof Shelter and Vicinity				
16' Walkways (reinforced for vehicular)	522	SY	$150	$ 78,333
Walkway grate over wet-dry streambed (vehicular)	1	EA	$5,000	$ 5,000
Bridge over stream/culvert (vehicular)	1,004	SF	$200	$ 200,800
Concrete pad for shelter	99	SY	$110	$ 10,890
Retaining wall for shelter	420	SFF	$90	$ 37,800
Fence for shelter	75	LF	$100	$ 7,500
Green roof shelter	1	LS	$60,000	$ 60,000
Picnic tables	6	EA	$2,000	$ 12,000
Green roof planting system	1	LS	$8,000	$ 8,000
Pervious pavers plaza	60	SY	$100	$ 5,967
Electric service and lighting	1	LS	$15,000	$ 15,000
Stream view seating area benches	3	EA	$2,000	$ 6,000
Stream view seating area fence - split rail	35	LF	$40	$ 1,400
Flag pole	1	LS	$3,000	$ 3,000
Bike racks	3	EA	$500	$ 1,500
Wet-dry stream bed	250	SY	$200	$ 50,000
Wet-dry stream bed boulders	50	EA	$200	$ 10,000
Wet-dry stream plantings	1	LS	$4,000	$ 4,000
Bollards	3	EA	$1,200	$ 3,600
Entrance benches	4	EA	$2,500	$ 10,000
Seeding	190	SY	$7	$ 1,333
Park Entrance, Green Roof Shelter and Vicinity				$ 532,123
Contingency (10%)				$ 53,212
Mobilization and Stakeout (6%)				$ 31,927
Design, Construction Documentation & Construction Admin. (10%)				$ 53,212
PARK ENTRANCE, GREEN ROOF SHELTER AND VICINTY TOTAL				$ 670,475

Sangree Park

Opinion of Probable Construction Costs
7/31/2017

PASHEK MTR

Item		Unit	Unit Cost	Total
Ballfield				
Laser Grading	1	EA	$25,000	$ 25,000
Backstop fence, black vinyl-coated	72	LF	$100	$ 7,200
Foul Line fencing - 8' tall, black vinyl	100	LF	$100	$ 10,000
Outfield fencing - 4' tall black vinyl plus 16' mesh extension	360	LF	$125	$ 45,000
Dugouts	2	EA	$25,000	$ 50,000
Bleachers, 5 row x 21'	2	EA	$6,500	$ 13,000
Concrete walkways and pads for bleaches, dugouts	563	SY	$110	$ 61,918
Walkway grate over wet-dry streambed	1	LS	$2,000	$ 2,000
Infield soil mix	1	LS	$14,000	$ 14,000
Seeding (outfield and surrounding area)	7,041	SY	$7	$ 49,284
Property line shrubs, grasses, groundcover	4,258	SY	$15	$ 63,875
Ballfield Subtotal				$ 341,277
Contingency (10%)				$ 34,128
Mobilization and Stakeout (6%)				$ 20,477
Design, Construction Documentation, Permitting & Construction Admin. (10%)				$ 34,128
BALLFIELD TOTAL				$ 430,009
Nature Spray Park				
Spray features	1	LS	$100,000	$ 100,000
Water recirulation and filtration system	1	LS	$50,000	$ 50,000
Waterline service, drains, etc. for spray pad	1	LS	$75,000	$ 75,000
Spray pad surface	440	SY	$125	$ 55,000
Boulders	50	EA	$100	$ 5,000
Walkway (concrete)	165	SY	$110	$ 18,150
Stormwater Management	1	LS	$5,000	$ 5,000
Seeding	278	SY	$7	$ 1,944
Nature Spray Park Subtotal				$ 310,094
Contingency (10%)				$ 31,009
Mobilization and Stakeout (6%)				$ 18,606
Design, Construction Documentation & Construction Admin. (10%)				$ 31,009
NATURE SPRAY PARK TOTAL				$ 390,719

Sangree Park

Opinion of Probable Construction Costs
7/31/2017

PASHEK MTR

Item		Unit	Unit Cost	Total
Restroom/Maintenance Storage Building				
Restroom building / maintenance storage	1	LS	$300,000	$ 300,000
Security camera system at restroom/spray pad	1	LS	$25,000	$ 25,000
Water service to restroom	1	LS	$7,500	$ 7,500
Electric service to restroom	1	LS	$15,000	$ 15,000
Drinking fountain	1	LS	$2,500	$ 2,500
Restroom / Maintenance Storage Building Subtotal				**$ 350,000**
Contingency (10%)				$ 35,000
Mobilization and Stakeout (6%)				$ 21,000
Design, Construction Documentation & Construction Admin. (10%)				$ 35,000
RESTROOM/MAINTENANCE STORAGE BUILDING TOTAL				**$ 441,000**
Play Area				
Accessible walkway	400	SY	$110	$ 44,000
Stairs	8	EA	$1,000	$ 8,000
Play area surface	900	SY	$144	$ 129,600
2-5 and 5-12 play equipment	1	LS	$80,000	$ 80,000
Swings (two bays)	2	EA	$4,000	$ 8,000
Benches	2	EA	$2,500	$ 5,000
Seeding	644	SY	$7	$ 4,511
Play Area Subtotal				**$ 279,111**
Contingency (10%)				$ 41,867
Mobilization and Stakeout (6%)				$ 16,747
Design, Construction Documentation & Construction Admin. (10%)				$ 27,911
PLAY AREA TOTAL				**$ 365,636**

Sangree Park

Opinion of Probable Construction Costs
7/31/2017

PASHEK MTR

Item		Unit	Unit Cost	Total
Basketball Court				
Pervious asphalt and base court surface (5400SF)	600	SY	$40	$ 24,000
Color coating	600	SY	$10	$ 6,000
Fencing 15' court ends and 10' sidelines	310	LF	$150	$ 46,500
Basketball goal	2	EA	$4,000	$ 8,000
Benches	2	EA	$3,000	$ 6,000
Bike racks	3	EA	$500	$ 1,500
Seeding	275	SY	$7	$ 1,925
Basketball Court Subtotal				$ 93,925
Contingency (10%)				$ 9,393
Mobilization and Stakeout (6%)				$ 5,636
Design, Construction Documentation & Construction Admin. (10%)				$ 9,393
BASKETBALL COURT TOTAL				$ 118,346
Outer Trails				
Compacted limestone trail: Sangree Road to play area - 6' wide	220	SY	$60	$ 13,200
Bridge between Sangree Road and Play Area	1	LS	$125,000	$ 125,000
Compacted limestone trail: Play area to/around ballfield - 6' wide	767	SY	$60	$ 46,040
Walkway grate over wet-dry streambed	1	LS	$2,000	$ 2,000
Boardwalk between play area and ball field	860	SF	$105	$ 90,300
Sustainable trail near stream, gathering areas	1	LS	$4,000	$ 4,000
Outer Trails Subtotal				$ 280,540
Contingency (10%)				$ 28,054
Mobilization and Stakeout (6%)				$ 16,832
Design, Construction Documentation & Construction Admin. (10%)				$ 28,054
OUTER TRAILS TOTAL				$ 353,480

Phasing Plan

The Phasing Plan was developed based on the primary goal of rehabilitating the stream and woodlands and subsequent order of construction.

Phase I would include the restoration efforts, site preparation and removals, and construction of the reinforced pathway and stream crossing that will enable access for construction vehicles. The entrance area will also be developed with other features that can be pushed into future phases.

Phase II would include the water play area, play areas and restroom building.

Phase III would include construction of the parking lot and Sangree Road frontage amenities such as sidewalks and screening. This phase also involves construction of the perimeter pathway.

Phase IV involves reorienting the ball field and constructing the basketball court.

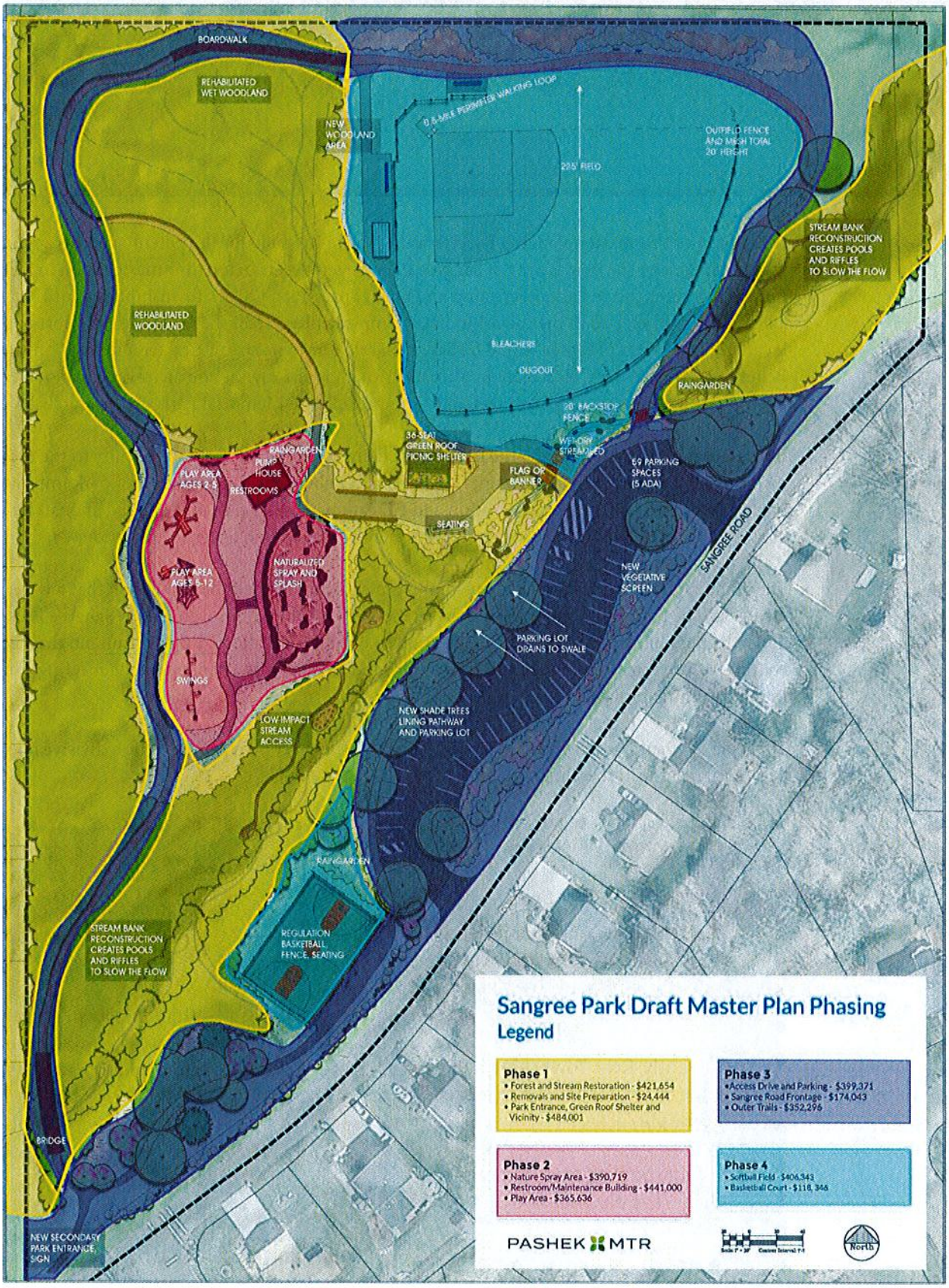
Please refer to the Phasing Plan below and the map on Page 68.

Sangree Park Costs by Phase

PASHEK MTR

7/31/2017

Master Plan Component	Cost	Phase I	Phase II	Phase III	Phase IV
Forest and Stream Restoration	$ 421,654	$ 421,654			
Removals and Site Preparation	$ 24,444	$ 24,444			
Access Drive and Parking	$ 399,371			$ 399,371	
Sangree Road Frontage	$ 174,043			$ 174,043	
Park Entrance, Green Roof Shelter and Vicinity	$ 670,475	$ 670,475			
Ballfield	$ 430,009				$ 430,009
Nature Spray Area	$ 390,719		$ 390,719		
Restroom/Maintenance Storage Area	$ 441,000		$ 441,000		
Play Area	$ 365,636		$ 365,636		
Basketball Court	$ 118,346				$ 118,346
Outer Trails	$ 353,480			$ 353,480	
TOTAL	**$ 3,789,176**	**$ 1,116,573**	**$ 1,116,573**	**$ 926,895**	**$ 548,354**


BOARDWALK
REHABILITATED WET WOODLAND
NEW WOODLAND AREA
0.8-MILE PERIMETER WALKING LOOP
225' FIELD
OUTFIELD FENCE AND MESH TOTAL 20' HEIGHT
STREAM BANK RECONSTRUCTION CREATES POOLS AND RIFFLES TO SLOW THE FLOW
REHABILITATED WOODLAND
BLEACHERS
DUGOUT
RAINGARDEN
20' BACKSTOP FENCE
WETLAND STREAMBED
36-SEAT GREEN ROOF PICNIC SHELTER
RAINGARDEN
PUMP HOUSE
RESTROOMS
PLAY AREA AGES 2-5
FLAG OR BANNER
69 PARKING SPACES (5 ADA)
SEATING
SANGREE ROAD
NATURALIZED SPRAY AND SPLASH
PLAY AREA AGES 5-12
NEW VEGETATIVE SCREEN
PARKING LOT DRAINS TO SWALE
SWINGS
NEW SHADE TREES LINING PATHWAY AND PARKING LOT
LOW IMPACT STREAM ACCESS
RAINGARDEN
STREAM BANK RECONSTRUCTION CREATES POOLS AND RIFFLES TO SLOW THE FLOW
REGULATION BASKETBALL FENCE, SEATING
BRIDGE
NEW SECONDARY PARK ENTRANCE, SIGN
Sangree Park Draft Master Plan Phasing
Legend
Phase 1
• Forest and Stream Restoration - $421,654
• Removals and Site Preparation - $24,444
• Park Entrance, Green Roof Shelter and Vicinity - $484,001
Phase 3
• Access Drive and Parking - $399,371
• Sangree Road Frontage - $174,043
• Outer Trails - $352,296
Phase 2
• Nature Spray Area - $390,719
• Restroom/Maintenance Building - $441,000
• Play Area - $365,636
Phase 4
• Softball Field - $406,343
• Basketball Court - $118, 346
PASHEK MTR
North

Chapter 4: WATER PLAY AREA FEASIBILITY

A key facet of this master planning process was a feasibility study for the potential construction of water play area as one new facility at Sangree Park. Several years before this master plan, in a DCNR-funded Comprehensive Park, Recreation and Open Space Plan (2012), township residents had stated a desire for a splash pad in the township. That comp-rec plan established that the two most opportune locations for a water play area would be Sangree Park, due to its size, character and location, and Bellevue Memorial Park, elsewhere in township, which is already the site of a swimming pool. (The township intends to investigate the feasibility of the Bellevue Memorial Park site separately.)

Because water play areas are aquatic facilities by definition, there is logic and affinity to the idea of incorporating one in the Sangree Park master plan in light of the central theme of park improvements: natural resources and water conservation and education. A water play area could demonstrate water conservation as long as the chosen operating system was based on water recirculation.

The grant application for this master planning project had included the stipulation that a water play area would be part of the community conversation about future improvements at Sangree Park. Thus, the possibility of a water play area was given due consideration by the consultant, the steering committee, the director of Parks and Recreation, and citizens who attended public meetings during this master planning process.

The issue of whether to include a water play area in the master plan proved to be a divisive one, and can be summarized with these main points:

Reasons for

1. The park is surrounded by residential neighborhoods largely populated with families with children who would use and enjoy the park.

2. Currently, Ross Township residents drive to other communities to use a water play area.

3. A highly desired feature would encourage park use and outdoor recreation.

Reasons against

1. Concerns that an expensive new park feature would result in tax increases.

2. Concerns that a water play area would draw large crowds, especially people from outside the township, to a quiet neighborhood park.

3. Concerns about increased noise and traffic in the neighborhood.

It was important that the possibility of a water play area were fully investigated so elected officials would have sufficient information on which to base a decision. Since this matter provoked vigorous debate among citizens, the director of Parks and Recreation asked township commissioners to make a determination about whether a water play area should be included in the master plan.

For the record, we include here a summary of findings about a water play area:

Need and desirability

As noted on Page 2 of this report, Ross Township has fewer people in the youngest age groups (0-9, 10-19, 20-29) than do Allegheny County or the state of Pennsylvania. This documentation of demographics that skew older leads to competing conclusions. Either:

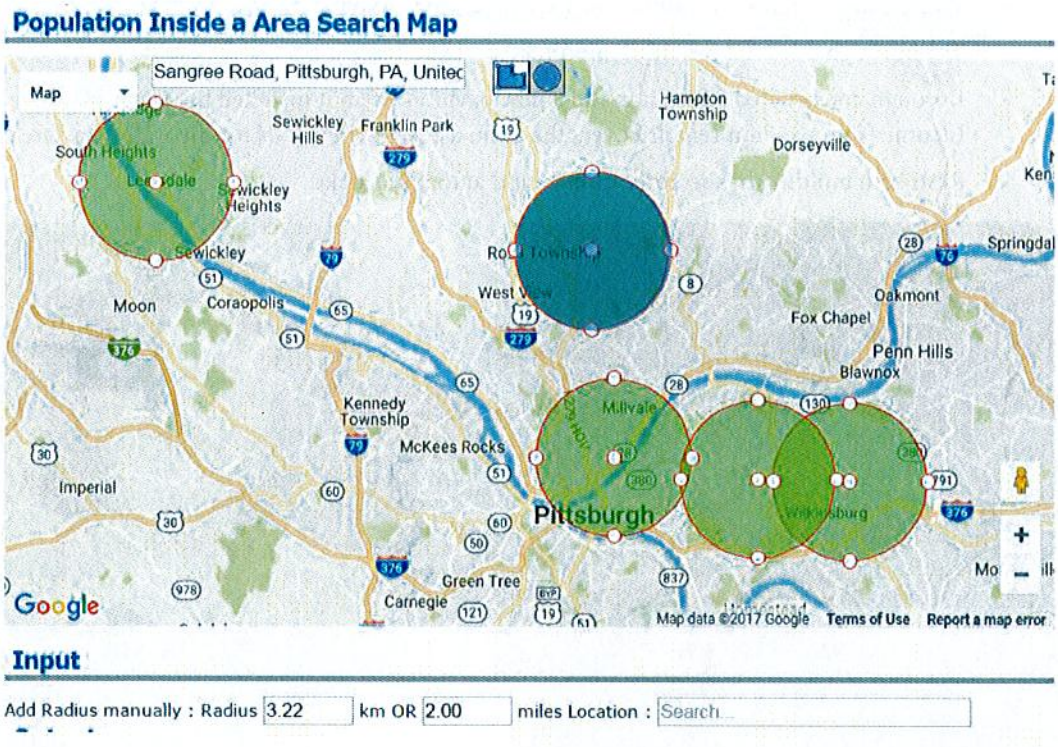
1. With an aging population, the Ross Township doesn't need a water play area.

OR

2. With an aging population, Ross Township needs a water play area to help it attract and retain young families.

Nearby locations

This map marks the locations of the nearest facilities, each shown in a 2-mile radius green circle. The darker circle marks the location of Sangree Park.



Input from communities with water play areas

Key person interviews that informed this report were conversations with people who have experience with water play areas in other communities. One informant is the borough manager at Red Lion, PA, which operates water play area with water recirculating system in a community park. The other informant is the Leetsdale, PA, borough council member who serves as chairman of the council committee that oversees parks.

The gist of their experiences is presented here. (Note that by comparison, Ross Township's population is 31,105.)

Dianne Price, Borough Manager, Red Lion (pop. 6,319)

- This spray park was designed and built through assistance of a DCNR grant. It is sized for 85 kids.
- It has a water recirculating system which collects, purifies and reuses the water.
- The borough tests the water twice a day and also monitors chlorine and pH levels remotely. Water is treated with chemicals and sand filtration. Probably cleaner than a pool because the water recirculates much faster.
- There are two underground tanks: a 1,500-gallon water management system for the splash pad, and a 1,000-gallon tank for stormwater collection when the splash pad is turned off. Captured stormwater is used to wash down the pad daily with mild bleach solution and power washer, and to water nearby plantings.
- Spray features are on a timer that coincides with park hours, and are each operated via on-demand switches.
- Water consumption is minimal due to recirculating system.
- The borough does not provide a monitor.
- Borough constructed restrooms and a new pavilion when it installed the water play area. Income from pavilion rentals covers the annual cost of chemicals for the water play area.
- Restroom building has security camera and automatic locks.

- Skateboarders sometimes use the water play area after hours, which is a violation. But there have been no other problems with people misusing the splash pad.
- Vans often bring children from church or summer youth programs, but this has not been a problem, since they usually arrive and leave before most local families show up. A day-care across the street frequently brings its children. The library across the street has seen big upticks in business since the water play area opened.
- A seat wall along one edge of the water play area is popular. The whole area is fenced in. Families like the lawn nearby and changing rooms/restrooms in a remodeled park building.

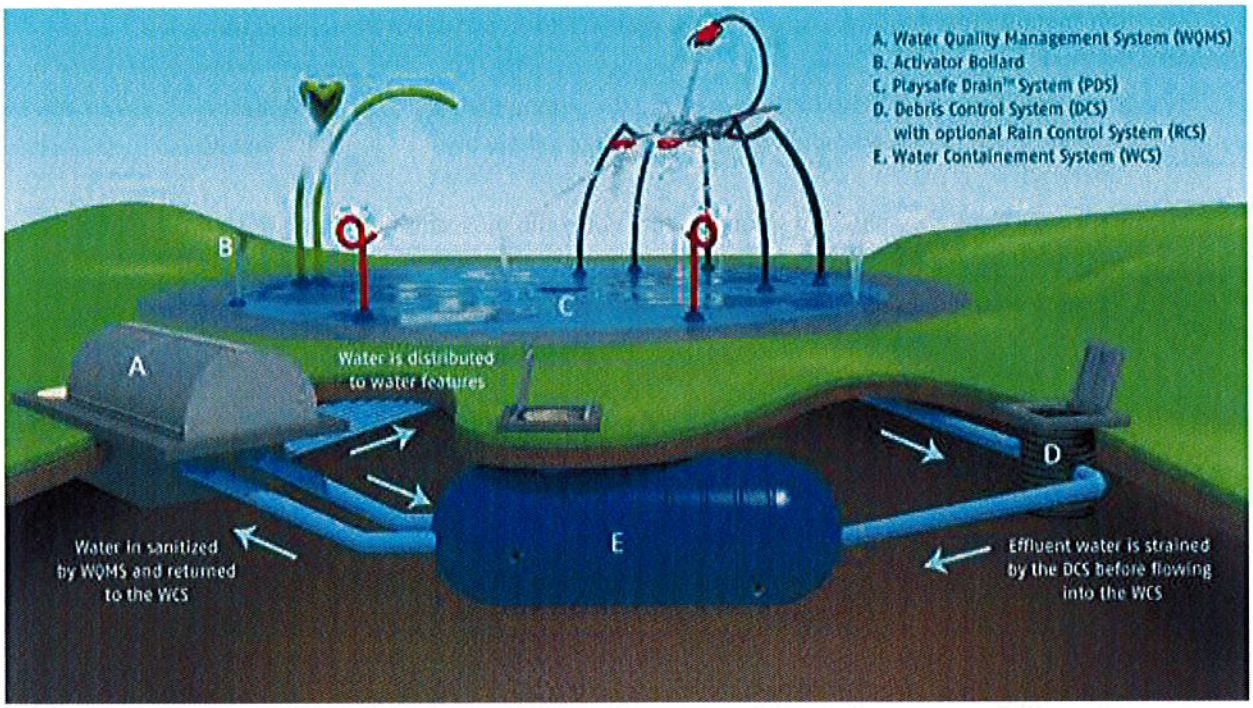
Joe McGurk, Council Member, Leetsdale (pop. 1,206) - System is non-recirculating.

- About 50-60 kids use the water play area daily.
- The community enlarged the size after two years (25 to 50 feet diameter) to meet the demand.
- About 80 percent of the children are not from the borough but arrive in cars or buses. Most are about 9-10 years old. Parents come and spread out blankets or chairs, and do supervise.
- Some vans bring children from summer church or youth programs in surrounding communities.
- Play area, restrooms and concession stand are nearby.
- "Kids do play, yell and scream. But it's *joyful;* it really lifts your spirits."
- One downside to having the facility is the cost of water, which is $14,000/season. Hours and days of operation were reduced in effort to reduce the cost.
- No maintenance issues unless grass clippings clog the drain. DPW hoses down the pad daily or several times a week, and washes it before season.

- Restrooms are nearby and open during park hours.
- Initially the borough provided a staff member on site, but now there is no constant presence. The police department is very close, however.
- Parking needs are for 30-35 cars at a time, plus van parking. Borough has permission for public to use the neighboring VFW lot, but sometimes cars also park on the grass.

Operating a recirculating water system

Various manufacturers can provide a water capture-and-recirculate system. This one, from Vortex, incorporates stormwater capture when the system is not in use, and re-purposes the water to landscape irrigation after two cycles through the system. Other options are available.



Operating a Facility for Community Health

Water play areas are aquatic facilities, and are subject to operating requirements that maintain public health. Outbreaks of diarrheal illness that occur at public aquatic facilities are typically caused by germs such as Cryptosporidium, Giardia, Shigella, norovirus and E. coli. Chlorine treatment will kill germs that cause diarrheal illness, but can take a long time to kill Cryptosporidium specifically. Because "Crypto," short for Cryptosporidium, can survive for days even in a properly disinfected environment, it is important to enlist the public, through education, in keeping a water play area clean.

The U.S. Centers for Disease Control and Prevention considers water play areas to be "increased risk aquatic venues," that is, places where people have an increased risk for microbial contamination or susceptibility to illness. That is because the people most likely to use a water play area are children less than 5 years old.

Pennsylvania Department of Health regulations (Chapter 18. Public Swimming and Bathing Places) govern all aquatic facilities. The regulations defer to the Uniform Construction Code (UCC), which references ANSI/NSPI-1 2003 and ANSI/NSPI-2 1999 for "public swimming pools and spas respectively." However, these codes do not specifically address aquatic spray grounds.

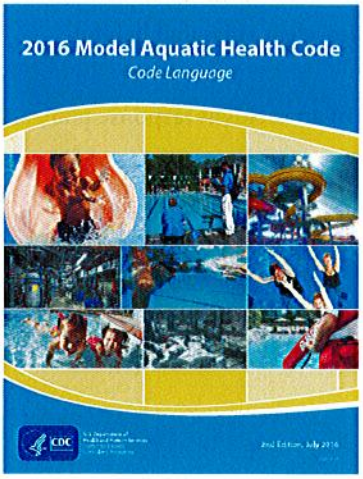
Allegheny County Health Department's regulations (Article IX – Lifeguards, Bathing Places, Bathing Beaches, Hot Tubs and Spas) include spray pools in the definition of "bathing place." These regulations require water to be tested once a week, but are neither detailed nor extensive.

As Pennsylvania does not provide sufficient guidance for operating aquatic spray grounds, this plan recommends following regulations provided by the U.S. Centers for Disease Control and Prevention and the New York State Department of Health. Their rules exceed those available from Pennsylvania or Allegheny County.

U.S. Centers for Disease Control and Prevention

The U.S. Centers for Disease Control and Prevention supplies resources for facilities:

- Model Aquatic Health Code
- Make a Healthy Splash!
- Fecal Incident Response Guidelines
- Steps for Healthy Swimming



The Model Aquatic Health Code is available at this URL (but check for updates in future years):

https://www.cdc.gov/mahc/pdf/2016-mahc-code-final.pdf

It provides guidance on turnover times rates, and filtration and disinfection measures for "Interactive Water Play Aquatic Venues" such as water play areas.

The Fecal Incident Response Guidelines pamphlet and Healthy Splash/Healthy Swimming flyers are available online and included in the Appendix.

Fecal Incident Response Guidelines pamphlet is provided in Appendix.

These CDC posters/flyers (in Appendix) can help educate the public.

New York State Department of Health

New York's public health laws, part of the state's sanitary code, provide regulations specific to "recreational aquatic spray grounds" that have water treatment and recirculating systems. This section of the code incorporates CDC's Model Aquatic Health Code provisions.

The code is available at this URL:

https://regs.health.ny.gov/content/subpart-6-3-recreational-aquatic-spray-grounds

Both the New York code and CDC guidelines emphasize these keys to reducing disease "breakouts":

- Ensure the higher water turnover rates recommended for Increased Risk Venues.
- Employ a secondary disinfection system, such as ozone or ultraviolet
- Educate the public through providing appropriate facilities, clear rules and helpful information
- Follow established protocols and documentation as part of an incident response plan.

Operating and Maintenance costs

The costs of operating and maintaining a water play area are estimated here. This assumes installation of a water recirculating system.

It is likely that a single new piece of maintenance equipment would be needed: a pressure washer to clean water play area surfaces, for approximately $3,000.

Sangree Park Spray Area

Operating & Maintenance Cost Projections - DRAFT

3/23/2017

PASHEK MTR

Services and Supplies				
Electricity				$ 2,500
Sanitation & Disinfection Chemicals				$ 1,000
Water				$ 1,500
Other Operation Costs				$ 1,000
Materials and Supplies				$ 3,000
Insurance				$ 1,000
Services and Supplies Subtotal				$ 10,000
Staffing	**Units**	**Number**	**Cost**	
Spring Preparation	Hrs	40	$20	$ 800
Daily care (2 hrs per day @ 100 days)	Hrs	200	$20	$ 4,000
Repairs/damage/vandalism	Hrs	40	$20	$ 800
Winterization	Hrs	40	$20	$ 800
Staffing Subtotal				$ 6,400
Total				$ 16,400

Ultimately, the feasibility of including a water play area is up to elected officials, who will determine whether the construction, operating and maintenance costs are within the township's capacity.

Chapter 5: OPERATIONS AND MAINTENANCE OF PARK

By adopting this plan, the township is adopting a park master plan that has been designed to help control maintenance costs.

The master plan made the following assumptions to project park maintenance costs.

- Township public works employees will perform general park maintenance
- The township will provide manpower and equipment for general park maintenance tasks
- Seasonal staff will be employed to perform about half the maintenance in the park
- Limited winter maintenance will be performed.

Maintenance Plan

In 1986, the National Recreation and Park Association (NRPA) developed a standard for classifying maintenance programs to allow for the forecasting of maintenance expenses related to park and recreation facilities. This standard was published by the NRPA in its publication *Park Maintenance Standards*. The following analysis utilizes this approach to determine the annual cost of maintaining the park after development of Master Plan recommendations.

The NRPA classification system identifies five levels (modes) of care that a park facility may receive. Each mode is further defined by the level of care for each of fourteen maintenance items. The following maintenance tasks and schedules have been customized from NRPA's Mode II (high-level maintenance). Mode II is intended for well developed park areas with reasonably high visitation. We have adapted the recommendations to align with current sustainability practices that minimize water consumption, stormwater runoff, and use of chemical treatments on lawns.

These are not intended to identify every maintenance task required but rather to recognize typical tasks and schedules for an appropriate level of care.

1. **Turf Care:** Grass cut once every five working days. Aeration as required but not less than two times per year. Reseeding or sodding when bare spots are present.
2. **Fertilizer:** The community does not apply fertilizer, to protect stream quality.
3. **Irrigation**: Not applicable in this case.
4. **Litter Control:** Minimum of once per day, five days a week. High use may dictate higher levels during warm season.
5. **Pruning:** When required for health or reasonable appearance. Shrubs for this site should be selected for size at maturity so no routine pruning would be necessary.

6. **Disease Control:** Usually done when disease or insects are inflicting noticeable damage, reducing vigor of plant materials or could be considered a bother or health hazard to the public. Cultural prevention of disease problems can reduce time spent in this category. Some minor problems may be tolerated at this level.
7. **Snow Removal:** Snow removal done based on local law requirements but generally accomplished by the day following snowfall.
8. **Lighting:** Replacement or repair of fixtures when observed or reported as not working.
9. **Surfaces:** Should be cleaned, repaired, repainted or replaced when appearance has noticeably deteriorated.
10. **Repairs:** Should be done whenever safety, function or bad appearance is in question.
11. **Inspection:** View by some staff member once a day when regular staff is scheduled.
12. **Floral Plantings:** Some sort of floral and ornamental plantings present. Beds essentially kept weed-free.
13. **Restrooms:** Maintained at least once per day as long as they are open to public use. Servicing period should ensure an adequate supply of paper and that restrooms are reasonably clean and free from bad odors.
14. **Special Features:** The water play area should be maintained for safety, function and high quality appearance as per CDC and state of New York guidelines, which exceed those provided by state of Pennsylvania and Allegheny County.
15. **Walkways and Trails:** Decomposed rock pathways need to be inspected and maintained at least weekly, and natural surface trails should be done every other week. Paved walkways, boardwalk and bridge per inspection and repair recommendations.
16. **Shelters:** The green roof shelter should be maintained per manufacturer's specifications. The shelter should be cleaned and inspected twice weekly late spring to late fall. Ensure cleanliness when the shelters are reserved for use. Follow litter control and inspections recommendations included elsewhere in this listing.
17. **Rain gardens:** Mulch annually; control sedimentation flowing into the gardens; weed and prune at least annually, water to establish plants; maintain healthy plants.
18. **Parking areas:** Clear of litter and debris at least weekly. Paint space markings and handicapped spaces annually.

Anticipated Maintenance Costs

Cost to complete maintenance of the park fall into three categories: staffing, supplies, and equipment. The following charts and their related descriptions provide a basis from which the Township can plan of appropriate funding allocations for their new park.

Note that the cost estimated shown in the following charts were developed as though the park were newly added to the community. However, because Sangree is an existing park, many of the maintenance and operations practices and associated costs noted in this chart are already included in annual budgets.

Staffing

It is recommended that Ross Township hire seasonal staff to complete much of the maintenance within the park. Approximately 50 percent of the work hours needed for park maintenance can be allocated to the seasonal staff. The cost estimates in the chart below assume an hourly rate of $12, which includes the payment of minimum wage plus related payroll costs for the seasonal staff. The remaining 50 percent of the staff costs are projected at $45 per hour to include the employee's hourly rate and associated payroll costs. The chart estimates about 1143 hours of staff time to perform maintenance in the park. Of this, an estimated 602 hours will be work that currently does not need to be performed.

The chart estimates maintenance hours as if the park were fully developed and being operated for the 2017 fiscal year. On that basis, 571 hours of seasonal help and 572 hours of public works department time are projected for a total cost of approximately $32,592. Of that total cost for maintenance at the park, new costs would be approximately $17,157.

NOTE: These operating and maintenance costs **do not include** those for a water play area, which are identified in the previous chapter.

The following charts depicts the materials, supplies and equipment. As with the previous chart, these figures were created as though Sangree Park were opened as a new community entity. Most likely, some of the annual costs and some needed equipment and supplies are already embedded in the existing township budget. Check marks indicate new costs prompted by features added during park renovation.

Please note that the costs for operating a water play area are dealt with separately in the previous chapter.

Maintenance Materials and Supplies	Annual Cost	New Item
Utilities	$3,000	√
Water and Sanitary System	$3,000	√
General Repairs and Maintenance	$5,000	
Trail and Sidewalk Maintenance Supplies	$3,000	√
Building Materials and Supplies	$5,000	
Equipment Repairs / Supplies	$3,000	
Turf Maintenance Supplies	$4,000	
Planting Bed / Raingarden Maintenance Supplies	$2,000	√
Total Maintenance and Operations Supply Costs	**$28,000**	**$11,000**

Maintenance Equipment	Cost	New Item
Zero Radius Mower (48")	$12,000	
Utility Trailer	$3,000	
Push Mowers (2)	$1,000	
String Trimmers (3)	$600	
Miscellaneous Mechanical, Landscape and General Use Hand Tools (ladder, wheelbarrow, tools)	$2,000	
Other Power Tools (blower, carpenters tools, etc.)	$3,000	
Total Major Equipment Costs	**$21,600**	

Appendix