

IRVIN PARK MASTER SITE DEVELOPMENT PLAN

Prepared for Curwensville Borough



**THE
EADS
GROUP**

SEPTEMBER 2017



IRVIN PARK MASTER SITE DEVELOPMENT PLAN

Prepared by

The EADS Group, Inc.

for

CURWENSVILLE BOROUGH

Clearfield County, Pennsylvania

September 2017

Irvin Park Master Site Development Plan

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

The Irvin Park Master Site Development Plan was completed to understand community recreation needs and wants and to identify and organize in a clear manner what physical projects, programming and visual improvements the Curwensville Borough will pursue at Irvin Park. The Irvin Park Master Site Development Plan relied heavily on community input, guidance from Curwensville Borough and guidance from the Irvin Park Master Plan Study Committee. This Master Site Plan balances community goals and objectives with realistic and implementable project and programming recommendations. The actual Implementation of the Master Plan may take a number of years to correlate with public demand, available funding and/or volunteer labor support levels. Members of the Irvin Park Master Plan Study Committee include the following:

Irvin Park Master Site Plan Study Committee

Committee Member	Member's affiliation
Diane Holland	Project Manager CARE* board member CRDC** board member
Jim Hoover	Curwensville Borough Council Member Irvin Park Committee Chairman
Doug Bloom	Curwensville Borough Council President CRDC**board member
Ronald Matchock	Curwensville Area School District Superintendent CARE* board member
C. Eric Johnson	Northwest Savings Bank Senior Vice President CRDC** board President
Holly Komonczl	Executive Director- Clearfield County Recreation and Tourism Authority
Erin Ammerman	Northwest Savings Bank branch manager CARE* board President
Kathleen Gillespie	Chief Executive Officer- Clearfield Co Area Agency on Aging, Inc. - Rotary Club President- CARE* board member
John Wright	CARE* board member CRDC** board member
Sheila Williams	Central PA Community Action-housing manager CARE* board member
Cynthia Russell	President-Curwensville Pike Township Historical Society- CARE* board member CRDC** board member
Hildred Rowles	CARE* board member CRDC** board member - Irvin Park Shade Tree Commission member
Janie French	Executive Director- Headwaters Charitable Trust CARE* board member

CARE*- Curwensville Area Revitalization Entity (formerly Curwensville Blueprint)
CRDC**- Curwensville Regional Development Corporation

The Irvin Park Master Plan Study Committee and The EADS Group, Inc, would like to acknowledge and thank the members of the Curwensville Borough Council who supported the preparation of the Irvin Park Master Plan:

- Tom Carfley, Mayor
- Doug Bloom, President of Council
- Tommy Wingard, Council Vice President
- Jim Hoover, Chairman Pro Tem
- Ron Kuhn, Council Member
- Sara Curulla, Council Member
- Dave Donahue Council Member

The Irvin Park Master Plan Study Committee and The EADS Group, Inc, also wish to thank Borough residents and others who participated in the Community Survey completed as part of this planning effort. The input received was thoughtful and informative and provided an insight to how the Park is used, who uses the Park and why the Park is used. The Survey results also served as a guide in the development of the recommendations included in this Master Plan.

Curwensville Borough and the Irvin Park Master Plan Study Committee acknowledge the assistance provided by staff of The EADS Group, Inc. that participated and contributed to the development of the Irvin Park Master Site Development Plan:

- Mark W. Lazzari, AICP
- Brent Cartwright, RLA
- Richard F. Truscello, AICP
- Daniel J. Beyer, P.E.
- Alyssa Rouser, EIT

Curwensville Borough received Land and Water Conservation Funds in 1986 for the renovation of Irvin Park, project number 42-01375. All projects funded through the Land and Water Conservation Fund program are permanently protected for the benefit of the public and cannot be converted to a use that is not consistent with public outdoor recreation.

Irvin Park Master Site Development Plan

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BACKGROUND INFORMATION AND DATA

Irvin Park Master Site Development Plan

Curwensville Borough

Curwensville is located approximately six (6) miles southwest of Clearfield Borough, which is the county seat. Curwensville is named for the land that John Curwen founded. John Curwen obtained 351 acres of land on the banks of the Susquehanna River on December 10, 1798. Curwensville was incorporated as a Borough on February 3, 1851. Curwensville was one of the many lumbering cities that flourished mainly due to the access to the West Branch of the Susquehanna River.

Population Profile

The 2000 US Decennial Census reported that Curwensville Borough had a total population of 2,650. The 2010 US Census reported that there were 2,542 people residing within Curwensville Borough. According to the 2010-2014 American Community Survey (ACS) five year estimates, the population in the Borough had decreased slightly down to 2,493. A summary of the population change and trends appears on the Table below. As shown, from 2000 to 2010 Curwensville Borough's population decreased by 4.1%. Between 2000 and 2010/14, Curwensville Borough's population decreased by 5.9%. In comparison, the total population in Clearfield County also decreased during these time periods, although by smaller percentages.

Population Trends – Curwensville Borough and Clearfield County

Population	2000	2010	2010/14	% Change 2000-2010	% Change 2000-2010/14
Curwensville Borough	2,650	2,542	2,493	-4.1%	-5.9%
Clearfield County	83,382	81,642	81,472	-2.1%	-2.3%

Source: US Census

Age Profile

According to the Borough's 2012 Comprehensive Plan, the Borough's population is aging. The Plan reported that the Borough is experiencing a decrease in its population in the 15 and 24 years of age category. The Plan also reported that the highest percentage of residents (14.5%) were between 35 and 44 years of age, while the lowest percentage was children under 5 years of age.

Demographic Summary

The following was taken in part from the Borough's 2012 Comprehensive Plan Update. It provides an overall profile of the demographic characteristics in the Borough:

- From 1990 to 2000, Curwensville Borough's population decreased by 9.4%. From 2000 to 2010 Curwensville Borough's population decreased by another 4.1%.
- Curwensville has approximately 14.5% of its population between the ages of 35 and 44 years of age, which is the highest age group within in the Borough.
- Approximately 99.7% of Borough residents were born in Pennsylvania.
- The number of families in Curwensville Borough had decreased by 5.4% between 1990 and 2000.

Municipal Park System

Irvin Park is Curwensville Borough's only municipal park. It is located along the West Branch of the Susquehanna River and offers activities such as playground apparatuses, tennis and basketball courts, fishing access, pavilions, picnic tables, and a band shell. The Park is mostly wooded, level and well located to serve the residents of the community and surrounding areas. There are four family sized pavilions available for picnics and reunions. Irvin Park features a nice band shell and is the setting for the Curwensville Days celebrations during one full week in the month of July. Irvin Park is also home to Curwensville Little/Senior League Associations' baseball fields. These include the Curwensville Little League Field and Sherman Fields.

The Curwensville Lake Recreation Area

The Curwensville Lake Recreation Area is a US Army Corps of Engineers operated recreation area located on the shores of the 790-acre Curwensville Lake. Curwensville Lake is located on Route 453 approximately 4 miles south of Curwensville Borough. Curwensville Lake offers many opportunities including biking, hiking, boating, and fishing. The Curwensville Lake Recreation Area is a fee based recreation area. Recreation opportunities at the Lake include:

• No horsepower limit boating	• Fishing and Sand Beach Area
• 200 Picnic Tables and 22 Grills	• Five picnic
• 52 electric RV sites	• 3 Rustic Cabins
• 3 primitive tent sites	• 6 Children's Play Structures
• Sand Volleyball Court	• Dog Park

Curwensville Area School District Facilities

The Curwensville Elementary and Curwensville Jr./Sr. High school campuses are located in the Borough and are in close proximity to Irvin Park. The District maintains fields and play equipment for school related purposes. These facilities are not of the size and scale that would surpass the amenities offered at Irvin Park.

David S. Ammerman Trail

Once known as the Clearfield and Grampian Trail. The name was changed to the David S. Ammerman Trail in 2011 in memory of the man who championed turning the abandoned rail corridor into a recreational trail. The trail is located through Curwensville Borough, and at its closest, is approximately 1-mile from Irvin Park. The David S. Ammerman Trail offers opportunities for walking, jogging, and biking along its course. There are also several opportunities for stops to enjoy the scenic beauty of the area, with picnic tables available at around 2.5 miles, 4 miles and 6.7 miles outside of Grampian. Several railroad bridges remind you of the commerce that was important to the area when the railroad was built in the late 1860s and 1870s. The first two bridges on the trail are located in Curwensville.

Irvin Park Master Site Development Plan

Curwensville Borough Comprehensive Plan Update – 2012

The Comprehensive Plan Update (2012) explored aspects of the physical, social, economic and environmental conditions of Curwensville Borough. The Plan describes that the provision of parks and recreational facilities are vital in providing a safe and appealing place to live. A great need exists to provide a source of emotional and physical outlet for all citizens. If a community fails to provide facilities for these outlets, social problems such as idleness, delinquency, drug use and crime are more apt to develop. Additionally, further need for recreational facilities exists for the school age child during summer vacation months and after school hours. Programs must be provided to channel this leisure time into wholesome and constructive activities. A passive type of recreation is also needed for a growing number of retired senior citizens. It is therefore imperative that a community provides an adequate number and variety of recreational facilities and opportunities for all age groups of its citizenry. The Plan recommends that Irvin Park always remains a Park for the future generations of Curwensville Borough to enjoy.

North Central Pennsylvania Greenway Plan

The Plan provides the North Central Pennsylvania Region, including Clearfield County and Curwensville Borough, and partner organizations with a flexible framework for decision-making on issues related to Greenways, including the conservation of the region's natural, cultural, historic, and scenic resources, trail improvements, and economic development opportunities. This Plan contains specific implementation strategies to implement the Greenways vision for existing and future generations of North Central Pennsylvania residents. The Plan contains many recommendations and implementation strategies for Clearfield County as well as for surrounding counties such as Elk, Cameron, Clinton, Centre, Cambria, and Jefferson. The Plan recommends the following actions relevant to Curwensville Borough

- The Borough of Curwensville should work closely with the Curwensville Area School District to utilize the on-site facilities throughout the year.
- Apply for grants through DCNR to obtain monies for trails and recreational facilities within Curwensville Borough.
- Apply for grants through DCNR to obtain monies for the updating and improving of Irvin Park.
- Connect the David S. Ammerman Trail to the downtown area in Curwensville Borough.
- Connect the David S. Ammerman Trail to the Industrial Park (adjacent to Irvin Park) with a clear and inviting entrance.
- Establish directional signs throughout Curwensville Borough for those who venture off of the David S. Ammerman Trail into the Borough.
- The Plan recommends that Curwensville Borough develop/implement a trail town related approach.

Susquehanna River Greenway and Water Trail

Irvin Park falls within the extent of the Susquehanna River Greenway Corridor. The Susquehanna River Greenway is recognized as a corridor that connects people and places together. The Susquehanna Greenway links natural, cultural, historic, and recreational resources along the 500-mile corridor of the Susquehanna River in Pennsylvania. It also creates a basin-wide organization for resource management and community conservation. The Susquehanna Greenway identifies Irvin Park as a local Park and identifies it as having River Access at River Mile 185.

Heritage Areas

Curwensville Borough is located within the Lumber Heritage Region of Pennsylvania and the Pennsylvania Wilds Conservation Landscape Initiative (CLI). The Lumber Heritage Region is a 15-county, 12,500 square mile area of north-central Pennsylvania that is tied by its historic connection to forest resources and lumbering. The Lumber Heritage Region is marketed as a region known for its dense forests and connection to nature. The Lumber Heritage Region of Pennsylvania is a 501(c)(3) corporation that oversees the management, interpretation, marketing, and tourism efforts associated with the heritage region, with the goal of capitalizing on the history of the lumber industry to preserve the area's resources and sense of place.

A companion program to DCNR's Heritage Areas, DCNR launched the Conservation Landscape Initiative (CLI) in 2004. The CLI is a collaborative process of working in large regions across Pennsylvania while providing state-level support to local governments, community leaders, funders, businesses, non-profits, and individuals, to help communities protect their sense of place and the natural assets that make them unique. The Pennsylvania Wilds CLI, a 12½-county region in north-central Pennsylvania, promotes forest products, outdoor recreation, and nature tourism as significant contributors to the region's character and economy.

Natural Resources in Irvin Park

Irvin Park is blessed with a significant number of large, historic and mature shade trees. Many of these trees provide considerable value to the public and their recreation experiences at the park. The most significant of which are located generally on the western side of the Park between Susquehanna Ave., Irvin Park Rd., the Susquehanna River and Smith St. Additional information of these tree resources is included in the Tree Inventory and Assessment - Appendix B. A large open grass area, approximately 1-acre in size, is located in the Park generally located between Smith St. and the West Branch of the Susquehanna River. Implementation of this Master Plan will not result in impacts to this open space area. An existing natural area populated with mature shade trees and underbrush is located generally in the middle of the Park and is bordered by Irvin Park Rd. and Smith St. A Fitness Trail was previously constructed in this area. This Master Plan recommends that the Fitness Trail be converted in a Nature Trail to provide users an opportunity to observe towering hardwoods and evergreens and to generally experience nature along the route, to create an area appropriate for nature, bird and wildlife watching, and to have an area suitable for environmental education and to. A natural drainage feature is located in the Park generally between the existing Basketball court and the rear of the Band shell and Pavilions and Smith St. Implementation of this Master Plan will not result in impacts to this drainage area. The Clearfield County Natural Heritage Inventory (2004) does not identify any Biological Diversity Areas, Landscape Conservation areas or other areas containing sensitive habitats in Curwensville Borough or Irvin Park. The Inventory does note the importance of maintaining the riparian buffer to the West Branch of the Susquehanna River. Implementation of this Master Plan will not result in impacts to the existing riparian buffer zone within the Park. A National Wetlands Inventory (NWI) search was conducted on the Park area. No wetland areas other than the West Branch Susquehanna River were identified. A PNDI search was completed for the Irvin Park Area. No impacts to habitats or species of special concern were identified.

PUBLIC PARTICIPATION

Irvin Park Master Site Development Plan

The EADS Group along with the Plan Study Committee carried out multiple public engagement initiatives during the planning process that provided local stakeholder and officials multiple opportunities and options to participate and to provide input. The Public engagement process included the following:

- Initial Public Meeting (Public Meeting #1) – held on July 13, 2016 at Irvin Park as part of Curwensville Days
- Public Meeting with Public Officials (Public Meeting #2) – held on September 12, 2016 during the advertised Curwensville Borough Council meeting
- Final Public Meeting (Public Meeting #3) – held on June 14, 2017 at Irvin Park in Pavilion No. 3
- Community Survey – conducted using an on-line *SurveyMonkey* System www.surveymonkey.com/r/IrvinParkSurvey2016 method and by hard copies distributed at the Curwensville Borough building and manually entered into the *SurveyMonkey* System. A total of 197 completed questionnaires were collected and incorporated into the planning process.
- The Irvin Park Master Plan Study Committee was regularly engaged during the planning process. A total of five (5) Study Committee meetings were conducted as follows:
 - June 8, 2016 - Introduction, review Scope and public meeting requirements, identification of Issues and Opportunities and of information needed from the Borough and discussions with Committee members.
 - July 13, 2016 – Held in conjunction with Curwensville Days – Introduction of the Community Survey, review Plan components, scheduling Public Meetings, conducted one-on- one discussion with Committee members and residents.
 - October 19, 2016 – Brief review of Public Meeting with Borough officials and results of the Community Survey, review and discussion of an initial set of Plan recommendations including physical and programming related projects and other Plan related items including Borough policies and project funding related topics.
 - January 11, 2017 – Review of Draft Master Site Plan Map and discussion on project phasing.
 - June 14, 2017 – In conjunction with Public Meeting #3 – to review Final Master Site Development Plan
- Key Person Interviews - five (5) Key Person interviews were conducted during the Planning process:
 1. Mr. Brian K. Spencer - Curwensville Recreation Soccer Association – provided information on the need for additional soccer fields at Irvin Park and assisted with site locations and field specifications.
 2. Mr. Scott Brubaker – representative of local scouting troops – provided information on how a section of the Park is currently used by Scouting troops and their future needs and use of the Park.
 3. Mrs. Doe Augustine - the mother of Matt Augustine (the Boy Scout who originally constructed the Fitness trail within the Park) – provided a scrap book of historical information regarding the Fitness Trail and a number of archived photos taken during its construction.
 4. COL Corey L. Britcher - PA Fish & Boat Commission, Bureau of Law Enforcement – provided detailed information on the Curwensville Dam, including permitting and inspection history/requirements, information on the water restriction marking/areas located up and downstream of the Dam.
 5. Mr. Dennis Curry – Street Leadman (Borough's Street Department) – provided information on the Park's history, its development, localized maintenance issues and concerns and Park use characteristics. Also provided information on site development constraints and maintenance requirements in the Park.

Community WORKSHOP

Irvin Park Master Plan



Come join us to plan for the...

FUTURE OF IRVIN PARK

WHERE
Irvin Park - Pavilion #3
Curwensville Borough

WHEN
Wednesday
June 14, 2017
At 6:30 PM



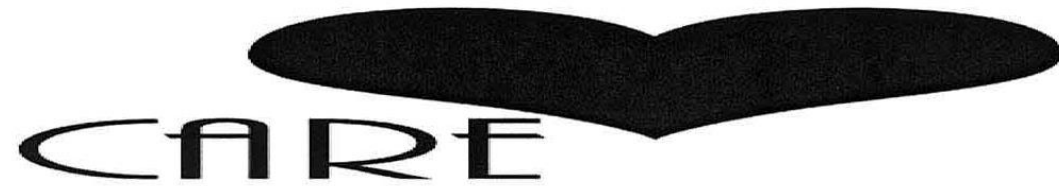
WHAT
Curwensville Borough has prepared a Master Plan for the future development of Irvin Park. A final Community Workshop has been scheduled to review the results of the planning process.

WHY
Representatives from the Borough, Plan Study Committee and The EADS Group, the consultant for this planning effort, will be on hand to review the Master Plan design with attendees. Other Plan recommendations, including proposed Recreation Programming and connections to the David S. Ammerman Trail will also be reviewed. There will be opportunities for group and one-on-one discussions and answering of individual questions regarding the Master Plan.



Irvin Park Master Site Development Plan

Public Meeting #1 – held on July 13, 2016 at Irvin Park as part of Curwensville Days



Minutes: Special Meeting at Irvin Park

July 13, 2016

Attendees: Dee Holland, Gae Kane, Shelia Williams, Cynthia Russell, Janie French, Tyler Wilkinson, Holly Komoncz, John Wright, Borough members Doug Bloom and Jim Hoover, Mayor Tom Carfley and Brent Cartwright, EADS project manager.

Dee opened the meeting.

Brent:

Brent gave a brief introduction about his job and his previous involvement with projects at Irvin Park. He told the audience that it's, "your park" and how important the community's is. He explained to the audience how the funds occurred with funding from CCRTA, DCNR and the Curwensville Borough to create the Master Site Plan and having the plan helps with many grant opportunities. He added that there needs to be 2 public meetings with this being the first and one to follow on September 12th at the Borough Building at 6p.m. The surveys are due by August 5th and he hopes to have them analyzed and results ready for the second meeting. He explained that the MSP is similar to a cookbook once in place, it can be used for years to come. The following list of items are what are/can be part of this plan:

1. River planning process
2. Design considerations
3. Links to other areas
4. Ownership issues
5. Graphic rendering
6. Cost estimates for each facility or project
7. Operating costs now and in the future
8. Bound report with all background data and maps etc.
9. Borough involvement as the municipality

Brent answered questions from the audience and thanked everyone for attending

Public Meeting #2 with Public Officials – held on September 12, 2016 during the advertised Curwensville Borough Council meeting

In addition to Borough Council members, the Mayor, the Borough Secretary and the Solicitor were in attendance. EADS Group representatives also attended to review the results of the Community Survey, including Brent Cartwright, Mark Lazzari and Richard Truscello. After the review of Survey results, feedback and discussion were welcomed. Comments received are summarized as follows:

- River access is an issue since no cars are presently allowed in the vicinity of the River, which complicates canoe, kayak and boat access.
- Use of an open grassy area for parking was discussed but seen as inappropriate since this area is the William Bloom (i.e. reported as the first settler of the County) cabin site. There have also been comments that it may have earlier been a site important for Native Americans.
 - Thus, an archaeological study would likely be required.
 - An interpretive opportunity exists for this site – historic and river.
- An area just west of the open grassy area was identified as being more appropriate for development of a parking area and river access point for boaters. (The EADS Group representatives viewed this area after the meeting and found it to be potentially suitable)
- There is limited access from parking area to pavilions.
 - Pavilion users must hand carry in all needed picnic and related items.
 - One commenter noted that cars do get into the park during certain events (i.e. identified as Curwensville Days) but this seems to be more of an exception.
- There was considerable discussion on the Dam and the present PADEP restrictions associated with it.
 - Slides showing the restrictions and the restricted area were shown.
 - Dam reconstruction opportunity is a possibility – regulatory and liability issues are recognized.
- The enclosing of a drainage ditch in the Park will require permitting via PADEP
- Parking/Road conditions include dust and public safety issues
 - Short-term (i.e. dust control) and longer-term (i.e. separation of road and a defined parking area) solutions were discussed.
- Hiking and biking is occurring on existing roadways within the Park.
 - Possibility of installing a loop trail connected to the pedestrian sidewalk was introduced.
- A former cardio-trail located within the wooded area surrounded by Smith Rd. was identified (i.e. remnants of equipment noted as existing). Reported that the trail is currently mowed. Signing and mapping identification on a website were noted as important for greater use.
- Connection with the Ammerman Trail was discussed.
 - The EADS Group noted that the Plan will identify that connecting the Park with the trail is a goal and may identify suggested routing.
 - The EADS Group noted that designing the actual trail connection was beyond the scope of the Park Master Plan.

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- Sustainability and maintenance are issues to be addressed in the planning process, since the Borough has limited capacities and resources.
 - A “Friends of the Park” and other volunteer efforts were discussed as possible options. Programming opportunities and local groups – School District involvement was noted in the past. A comment was made that a Park and Recreation Board Ordinance is on the books and a Board existed in the past.
 - Curwensville Recreational Soccer Association proposes a multi-use soccer field just below Sherman Fields and would help maintain the facility.
 - ADA access issues exist between the paved pedestrian sidewalk and pavilions – extending a paved sidewalk to each pavilion was discussed as a possible option.
- EADS staff noted that the input will be reviewed and incorporated into the planning process.

Public Meeting #3 – held on June 14, 2017 at Irvin Park in Pavilion No. 3

A final Public Meeting was held to review and discuss the results of the Master Site Development Plan. A total of seventeen (17) people attended and signed the sign-in sheet. The Curwensville Borough Mayor, several members of the Project Study Committee and area residents attended. Mark Lazzari and Brent Cartwright from The EADS Group also attended and facilitated the meeting. Mr. Lazzari reviewed the proposed Recreation Programming approach and a map showing potential connections to the David Ammerman trail. Mr. Lazzari then presented the Master Site Plan that included all the Park improvements. A productive discussion of the Master Site Plan followed. Collaboration amongst the attendees added to the discussion. The following summarizes the comments made by the attendees.

Parking

- Concern was raised on how the redesigned Main Parking Lot could limit the number of parking spaces available during Curwensville Days.
- Concern was also raised on how vehicles with boat trailers will disrupt the movement of vehicles through the new parking lot.

Revisions:

- A Head-In Overflow and Boat Trailer parking area located in the grassy area between Irvin Park Rd and the railroad embankment will be added.
- A walking trail will be added that will connect the Head-In Overflow and Boat Trailer parking area with the Matt Augustine Nature Trail to provide a more direct route for boaters walking back to/from the boat launch area.

Soccer Fields

- An attendee commented on the location and layout of the new soccer fields and also on an agreement that may be entered into between the Borough and the Curwensville Soccer Association.

Revisions:

- No changes to the layout will be made.
- Additional emphasis will be added in the Plan that Curwensville Borough will have the ultimate discretion over language in any type of agreement with the Soccer Association.

Scouting Area

- Notable input was received on how a section of the Park general located southeast of the Matt Augustine Nature Trail is actively used by Scouting troops.

Revisions:

- A Scouting Area will be added to the Master Site Plan.
- This area will have access from Smith St but not to the Matt Augustine Trail.



Community Survey Results

A community survey was conducted to better understand who uses Irvin Park and for what reasons, what are Curwensville area resident's preferred leisure and recreation preferences, what is the public's perception of the Park and its facilities/amenities and what would the public like to see in terms of new facilities and programming. The following section highlights the results of the Community Survey.

Respondent Overview -

There were 197 Responses to the Community Survey. There was a good representation from Curwensville Borough residents (37%) and from surrounding Pike Township (28%). Responses were also received from residents scattered among various Clearfield County communities.

There was good representation of household demographics with School-Age Children (42%), Young Adults (40%), and Middle Age Adults (82%) but a lower percentage with Pre-School Children (20%) and Mature Adult members (28%).

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Who Responded –

- 197 Responses
- 37% from Curwensville Borough
- 28% from Pike Township
- Participants of active and passive recreation activities
- Households with Pre K - School Age Children; Young - Middle Age Adults; and Mature (60+) members were represented



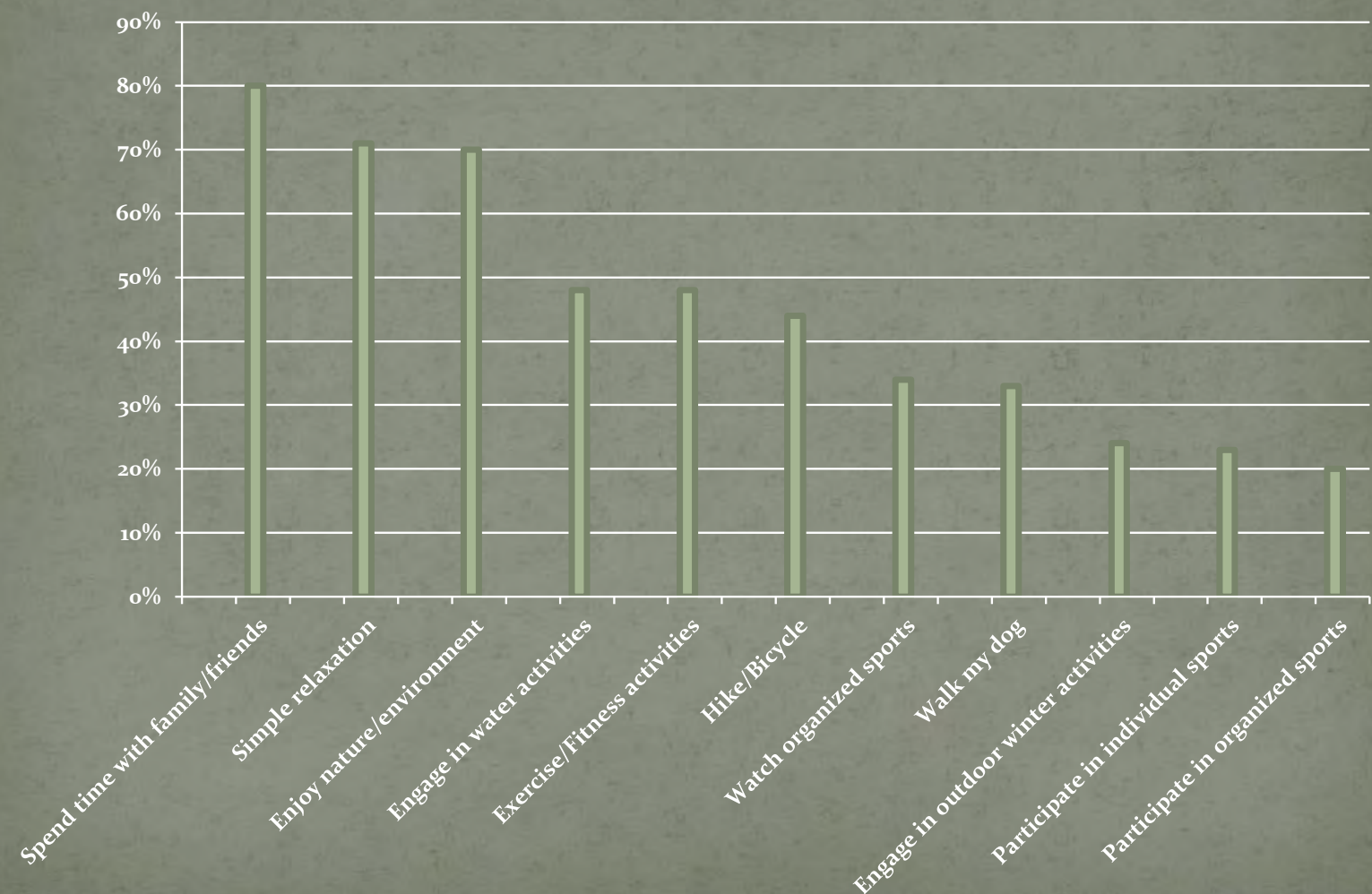
Leisure/Recreational Preferences - Respondents were asked, in general, when they spend leisure and recreation time, what do they prefer to do.

Respondents had more of a passive leisure time orientation involving spending time with family and friends, general relaxation, enjoying nature, and lower segments identifying water activities and fitness. Smaller segments identify individual or group sports as part of their leisure time preferences.

Common “other” responses included swimming and concerts.

Answer Options	Response Percent	Response Count
Spend time with family/friends	79.7%	157
Simple relaxation	71.1%	140
Enjoy nature/environment	70.1%	138
Engage in water activities	47.7%	94
Exercise/Fitness activities	47.7%	94
Hike/Bicycle	44.2%	87
Watch organized sports	34.0%	67
Walk my dog	32.5%	64
Engage in outdoor winter activities	23.9%	47
Participate in individual sports	22.8%	45
Participate in organized sports	20.3%	40
Other (please specify)	7.1%	14

Detail – Leisure Preferences



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How Often is the Park Used - Respondents were asked on average, how often have they or any other member of their household visited Irvin Park within the last 12 months

86% of responders indicated they have made multiple visits in the past year with 45% having visited several times in past year, 33% having visited at least once a month and 7% having visited several times a week.

Visitation during Curwensville Days was especially noted by respondents.

Answer Options	Response Percent	Response Count
Daily	0.5%	1
Several times a week	6.6%	13
Several times a month	19.8%	39
Once a month	13.7%	27
Several times in the past year	45.2%	89
Once	11.7%	23
Did not visit the Park at all this past year	2.5%	5
Other (please specify)		11
answered question		197

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How often is the Park Used – 86% of responders made multiple visits

- 45% visited several times in past year
- 33% visited at least once a month
- 7% visit several times a week
- Common among those who answered “other” are visits during Curwensville Days and occasional visits by people who live out of state



Why Do People Use the Park - Respondents were asked why they visited Irvin Park in the past year.

The most common reasons for visiting the Irvin Park were to accompany a child or grandchild, enjoying nature, for private picnics, reunions and concerts/music events.

Common among those who answered “other” are visits during Curwensville Days, school picnics, scouting events, fishing and kayaking/canoeing.

Answer Options	Response Percent	Response Count
Accompany children/grandchildren	49.2%	97
Enjoy Nature	45.7%	90
Private Picnic	35.0%	69
Family/Other Reunion	32.0%	63
Concert/Music Event	31.0%	61
Other (please specify)	24.9%	49
Watch organized sports	17.3%	34
Play individual sports	12.2%	24
Play organized sports	6.1%	12
Environmental Education	5.1%	10
Geocaching	5.1%	10
History/Heritage Tour	4.6%	9
Camping	1.5%	3
<i>answered question</i>		197

Irvin Park Master Site Plan

Why do People Visit the Park -

- Top 5 – Accompany Child/Grandchild, Enjoy Nature, Private Picnics, Reunions, Concerts/Music Event



- Other notables responses:

Visits during Curwensville Days, school picnics, scouting events, fishing and kayaking/canoeing



Irvin Park Master Site Development Plan

What Amenities are Most Used - Respondents were asked to identify all of the amenities did they visit or use at or around Irvin Park during these visits:

The most popular facilities/amenities used include the Picnic Pavilions, the Children's Play Apparatus, River Access, Restrooms, Trails and the Band Shell.

Common among those who answered "other" are visits during Curwensville Days and other special events.

Answer Options	Response Percent	Response Count
Pavilions	54.3%	107
Play Apparatus	45.2%	89
River Access/Activities	42.6%	84
Restrooms/Comfort Facilities	39.6%	78
Walking/Hiking Trails	31.5%	62
Band Shell/Amphitheater	24.9%	49
Ball Fields	20.3%	40
Fishing Area	20.3%	40
Basketball Court	13.7%	27
Tennis Court	11.7%	23
Other (please specify)	10.7%	21
Did not visit the Park/None of above	3.0%	6
<i>answered question</i>		197

Irvin Park Master Site Plan

What Amenities/Facilities are Used –

- Top 5 – Pavilions, Children's Play Apparatus, River Access & related, Restrooms and the Band Shell
- Other notables responses:
Ball Fields and Fishing Area



Irvin Park Master Site Development Plan

Overall Facility Conditions - Respondents were asked to give their overall rating of the condition (Good, Fair, Poor) of the amenities in Irvin Park. If there are unfamiliar with a certain amenity, they were asked to check "No Opinion."

A summary of the responses are as follows:

- Responders noted that the Band Shell, Ball Fields, Pavilions, and Play Apparatus were all in good condition.
- Responders noted that the Tennis and Basketball Courts and Fishing Areas were in fair condition.
- Responders noted that the Restrooms and River Access Areas were in poor condition.

Answer Options	Excellent	Good	Fair	Poor	No Opinion
Tennis Court	2	25	52	37	68
Basketball Court	1	36	66	24	61
Band Shell/Amphitheater	29	92	45	1	23
Ball Fields	18	59	39	10	62
Pavilions	4	88	76	11	10
Play Apparatus	15	96	54	3	23
Restrooms/Comfort Facilities	1	25	61	68	35
River Access/Activities	7	37	51	58	32
Walking/Hiking Trails	4	48	46	26	63
Fishing Area	5	32	48	20	78
Other (Describe below)	0	2	4	7	53
answered question					197

Irvin Park Master Site Plan

Facility Conditions -

- In Good Condition:
 - Band Shell, Ball Fields, Pavilions, Play Apparatus
- In Fair Condition:
 - Tennis & Basketball Courts, Fishing Area
- In Poor Condition:
 - Restrooms, River Access Area



Irvin Park Master Site Development Plan

Adequacy of Amenities and Programs - Respondents were asked to note their agreement or disagreement with each of the following statements on recreation facilities/amenities (i.e. playgrounds, fields, parks, trails, etc.) in the park.

Open Space is seen as adequate by 68% of the respondents, recreation amenities for young children (3-12 years) and for organized sports is seen as adequate, but inadequate for other age groups and for hiking.

Answer Options	Agree	Disagree	No Opinion
There are adequate recreation facilities for organized sports	70	79	47
There are adequate recreation facilities for youth (age 3-12 years)	90	90	15
There are adequate recreation facilities for teens (age 13-18)	47	121	27
There are adequate recreation facilities for young adults (age 19-29)	50	112	32
There are adequate recreation facilities for middle-aged adults (age 30-59)	56	97	42
There are adequate recreation facilities for mature adults (age 60+)	57	91	46
There is adequate open space for passive recreation	133	30	29
There are adequate trails for hiking and biking	56	80	58
There is adequate access for river activities	57	108	30
answered question			197

Answer Options	Agree	Disagree	No Opinion
There are adequate recreation programs for school age kids (age 5-18)	46	104	47
There are adequate recreation programs for young adults (age 19-29)	25	120	52
There are adequate recreation programs for middle-aged adults (age 30-59)	19	122	55
There are adequate recreation programs for mature adults (age 60+)	20	108	66
answered question			197

Irvin Park Master Site Plan

Adequacy of Amenities/Programs

- Adequate space for passive recreation
- *Need more* recreation facilities and programs for all Age Groups
- *Need more* hiking/biking opportunities
- *Need better* access for river activities



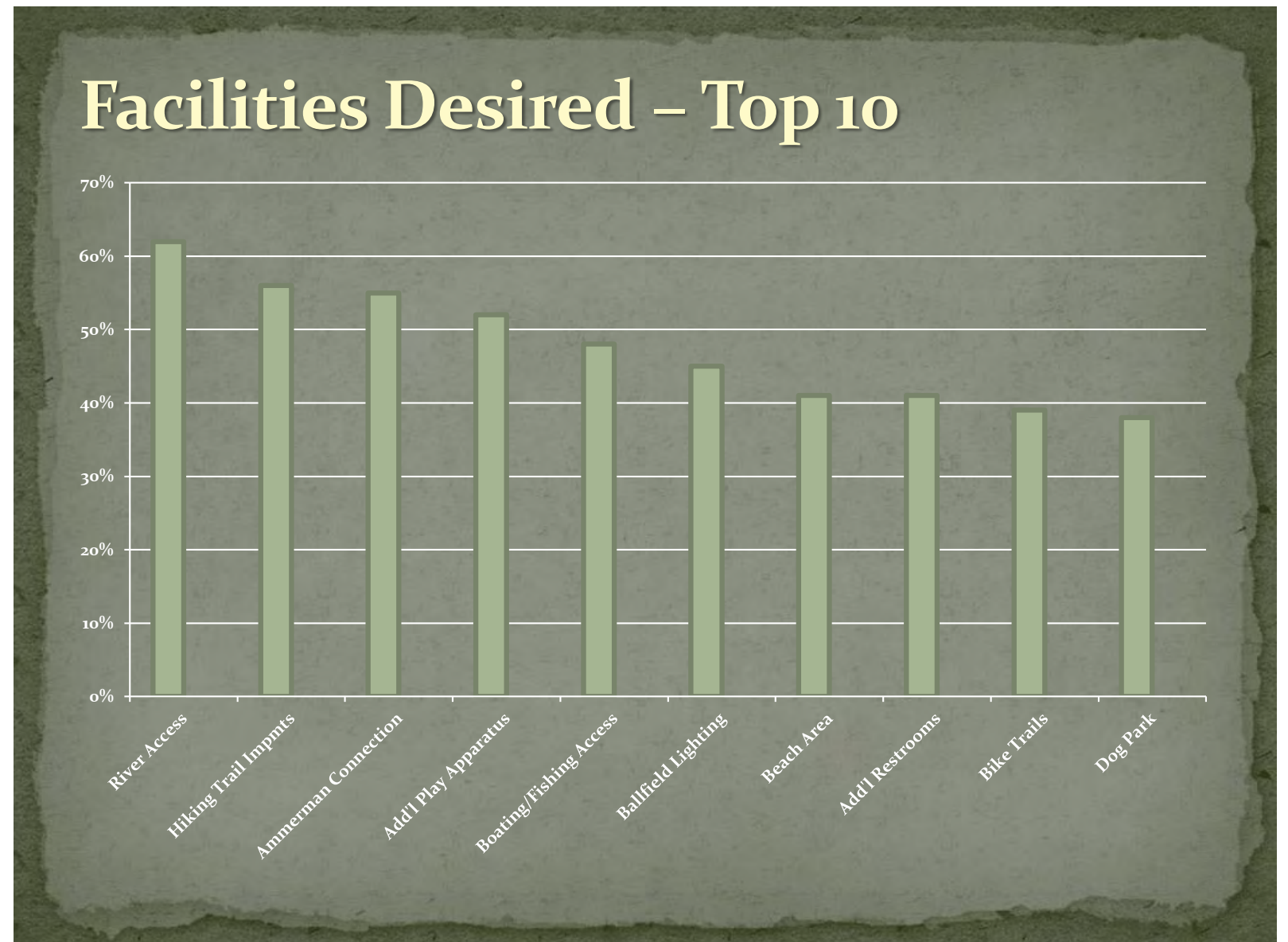
There is an overall need for improved recreation programming. Programming for school age children was the only area deemed to be adequate.

Irvin Park Master Site Development Plan

What Facilities do People Want - Respondents were asked to identify the facilities/amenities they feel are needed in Irvin Park.

The top facility needs include improved River Access, new/improved Hiking/Biking and Walking Trails, a Connection with the Ammerman Trail, Additional Play Apparatus, Boat/Fishing access and improvement of the parking area.

Answer Options	Response Percent	Response Count
Improved river access	62.4%	123
Walking/hiking trail improvements	56.3%	111
Trail connection with the David S. Ammerman Rail Trail	55.3%	109
Additional Play Apparatus	51.8%	102
Boating/fishing access areas	48.2%	95
Lighting for the ball fields	44.7%	88
Beach area	41.1%	81
Additional restrooms	41.1%	81
Bike trails	38.6%	76
Dog (off-leash) park	37.6%	74
Play area for children with physical limitations	36.0%	71
Nature parks/areas	35.0%	69
Improved parking area	32.0%	63
Camping areas	32.0%	63
Food vendor stands	31.5%	62
More picnic shelters/pavilions	27.4%	54
Equipment rental	26.9%	53
Boat ramp	26.4%	52
Environmental educational facilities	24.9%	49
ADA/accessible facilities	23.9%	47
Public open space	22.3%	44
Soccer fields	21.3%	42
Youth football fields	19.3%	38
Other (please specify)	18.8%	37
Basketball courts	13.2%	26
Interpretive signs	11.2%	22
Skateboard park	9.6%	19
In-line skating rink	9.1%	18
More Tennis courts	7.1%	14



Irvin Park Master Site Development Plan

What Programming do People Want - Respondents were asked to identify the recreational programs they feel are needed in the area.

The top programming needs expressed include Adult Fitness, Nature/Environmental Education, Activities for Teens, Summer Youth Camp and Youth Fitness Programs.

Answer Options	Response Percent	Response Count
Adult fitness programs	52.3%	103
Nature/environmental education	49.2%	97
Teen programs	46.2%	91
Youth summer camps	44.2%	87
Youth fitness programs	43.1%	85
Before/after school programs	41.6%	82
Adult sports leagues	39.6%	78
Senior-oriented programs	37.1%	73
Learn-to-swim	35.0%	69
Pre-school programs	33.5%	66
Programs for mentally/physically challenged	33.5%	66
Art, dance & performing arts	31.0%	61
Youth sports leagues	27.9%	55
Child care	17.3%	34
Other (please specify)	9.6%	19
Martial arts	7.6%	15

Irvin Park Master Site Plan

Needed Programs – Top Responses:

- Adult and Youth Fitness Programs
- Nature/Environmental Education
- Programs for Teens
- Youth Summer Camps
- Before/After School Programs
- Adult Sports Leagues
- Senior-Oriented Programs
- Pre-school Programs



Irvin Park Master Site Development Plan

Open Ended Question - Respondents were afforded the opportunity to offer comments and ideas on Irvin Park and/or other recreational needs.

The responses were highly individualized but there were a few common themes, as summarized below. Overall, respondents want to see more in the way of concerts and activities in the Park.

Category	Number	Noted Comments
More events and activities	16	Concerts, venue for local talent, teen activities, tournaments, special athletic events, swim classes, after-school programs, outdoor movies and greater use of bandshell
Maintenance items	11	Visual quality and appearance, landscaping, painting restrooms, clean up beach area, add food vendors, renovate tennis court, more open hours, better advertising of park facilities and events and play repair apparatus
Swimming	8	Children's pool/splash area, adult pool and concessions
Major facilities/amenities	7	More improvements at Sherman Fields (i.e. lighting, bleachers, fence upgrades, etc.), skate park, improved water access, ADA improvements, improved restrooms and boating/kayaking facilities
Minor facilities/amenities	4	More benches, garbage cans, picnic tables, drinking fountain and rental of equipment by vendor
Trails	4	Connections with regional trails, accessible trails for physically challenged and elderly and nature trail
Parking/Roadway Improvements	3	Paved road/parking lot, loading/unloading area for pavilions, ADA/elderly-friendly surfaces/access
Security	3	Perceived threat posed by certain types of people (i.e. drug users).

Irvin Park Master Site Plan

Notable Open-Ended Comments

- More activities/events – concerts, local talent venue, tournaments and outdoor movies
- Maintenance items – landscaping, visual quality, enhanced advertising and additional operational hours
- Swimming and splash area
- Sherman Fields improvements – lighting and bleachers



SITE INFORMATION AND ANALYSIS

Irvin Park Master Site Development Plan

Location

Irvin Park is located on the southern edge of Curwensville Borough. The western edge of the Park is adjacent to Susquehanna Ave. The Park's southern edge is the West Branch of the Susquehanna River while the eastern edge is adjacent to an area used for industrial and manufacturing business. Irvin Park is made up of three (3) individual parcels totally approximately 65 acres:

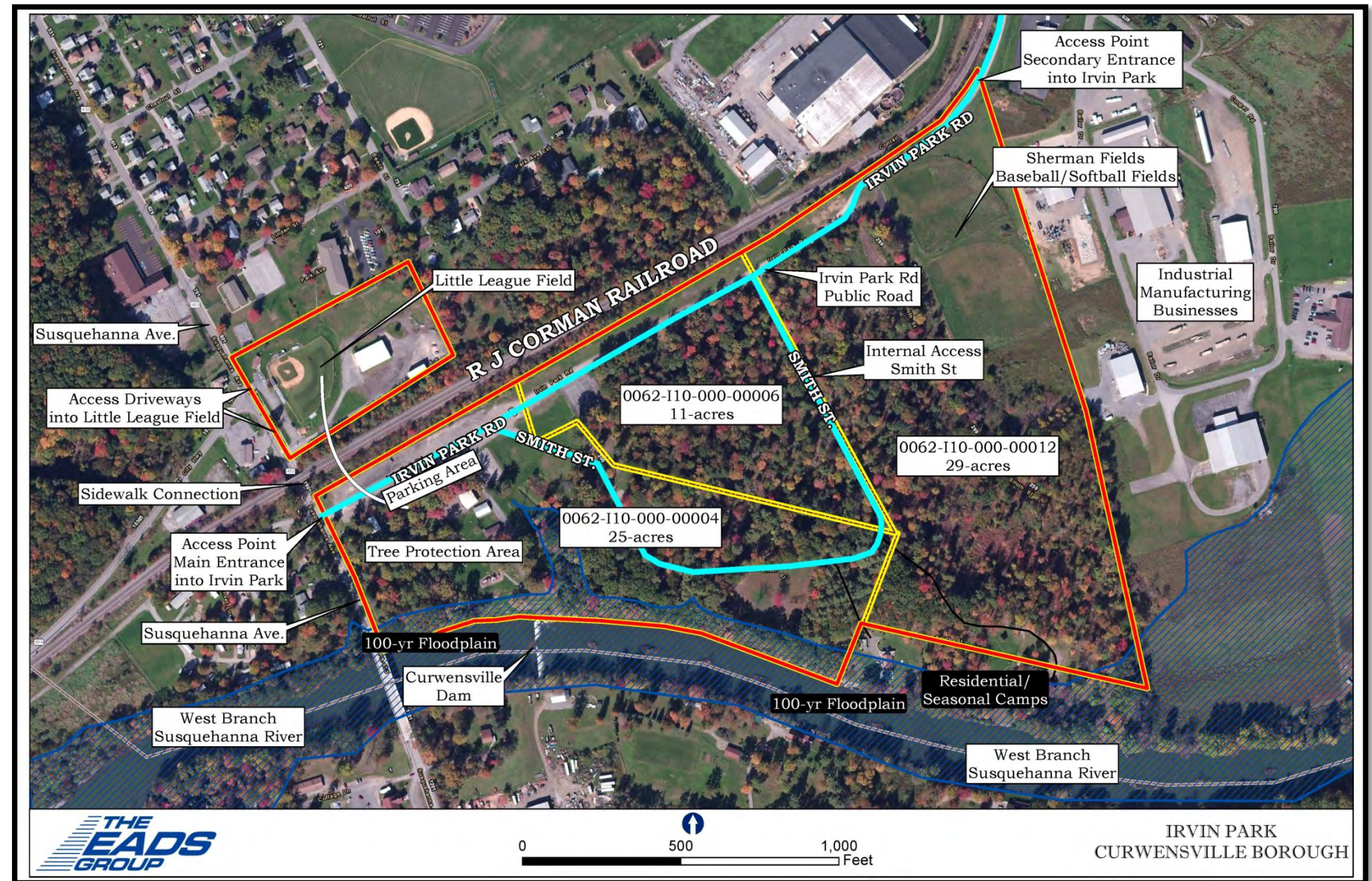
Pin #	Size
0062-110-000-00004	25-acres
0062-110-000-00006	11-acres
0062-110-000-00012	29-acres

Access

The main entrance into the Park is located off of Susquehanna Ave. A secondary entrance into the Park is located at the far northeastern corner. Access through the Park is provided by Irvin Park Road. Internal access is also provided by Smith St. Irvin Park Rd. and Smith St. are both public roads. Irvin Park Rd. is used heavily by local residents and by workers at the businesses located beyond the eastern edge of the Park. Smith St. provides access to private driveways leading to residential/seasonal camps located outside of the Park along the West Branch Susquehanna River. Access to the Little League Field is provided directly off of Susquehanna Ave. A sidewalk located along Susquehanna Ave. and under the railroad bridge connects the Little League Field area with the main part of the Park. Access to Sherman Field is provided off of Irvin Park Rd. Sidewalks along Susquehanna Ave. provide pedestrian access to the Park's main entrance area. A large parking area is located off of Irvin Park Rd. near the main entrance area.

Surface Features

A R.J. Corman railroad line, although not located in the Park, is a dominant feature to the Park, and as shown on the map to the top right, creates a physical barrier and separates a smaller portion of the Park from the main Park area. Two (2) areas in the Park are developed with baseball/softball fields. These include the Curwensville Little League Field located above the main Park area and the Sherman Fields located along the eastern edge of the Park. The Curwensville run-of-the-river Dam extends across the River and is a prominent feature to the Park



Wetlands, Surface Waters and other Natural Features

A National Wetlands Inventory (NWI) search was conducted on the Park area. No wetland areas other than the West Branch Susquehanna River were identified. Portions of the Park are with the 100-yr floodplain of the West Branch Susquehanna River. Those areas are highlighted on the map above. A Pennsylvania Natural Diversity Inventory (PNDI) search was conducted for the project location and the conservation report indicated there are no known impacts.

Irvin Park Master Site Development Plan

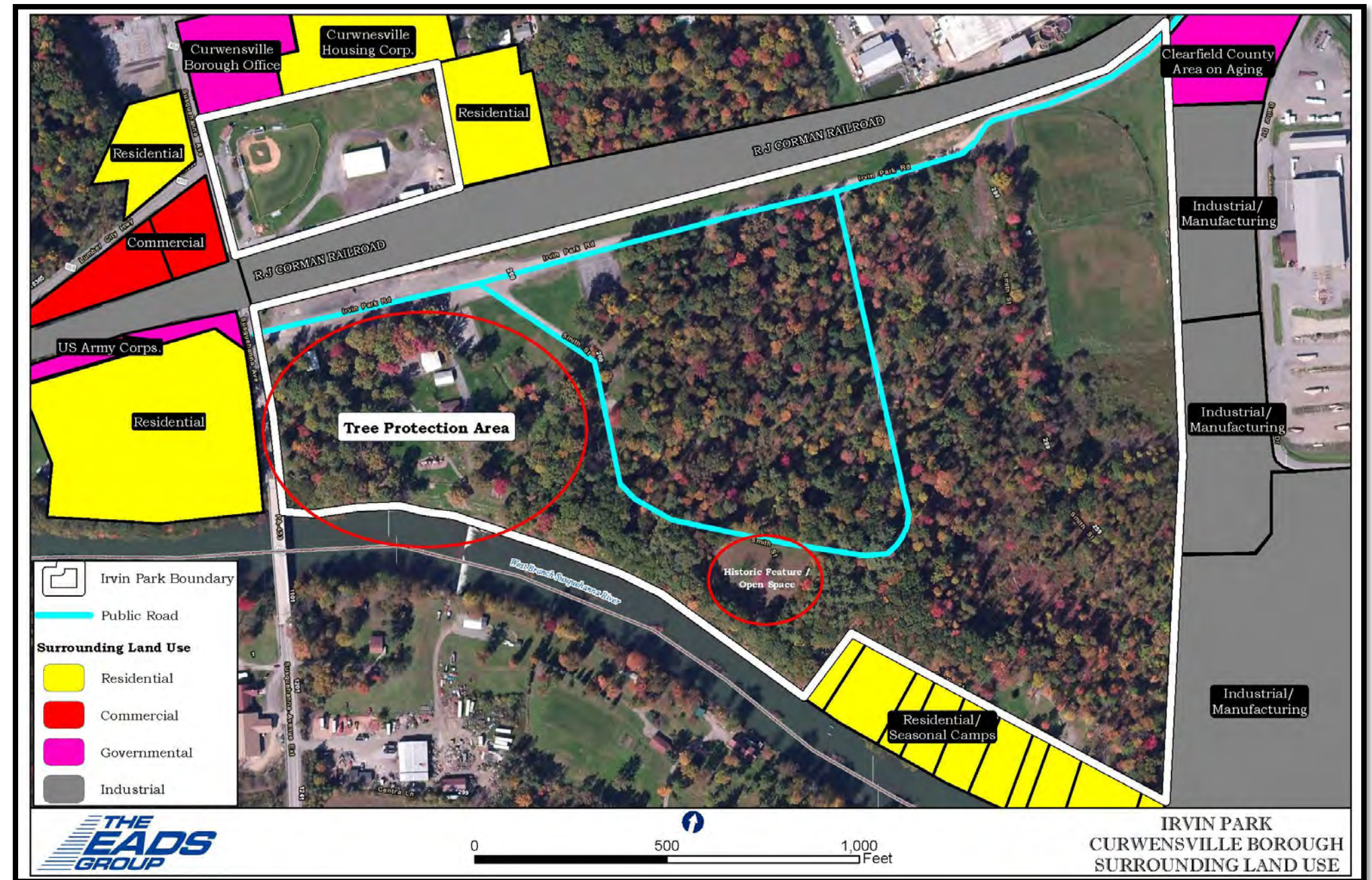
Historic Features – Open Space Area

A large open grass area (see photo below and map to right) is located in the Park generally between Smith St. and the West Branch Susquehanna River. This area is reported to be the location of the cabin site of William Bloom, the first settler of Clearfield County. It was also reported that this area may also be an important Native American site. This site provides opportunities for individual historic interpretation and contributes to the Park's overall connection with local history and heritage. This area is to remain undisturbed



Surrounding Land Use

The Surrounding Land Use map to the right highlights the land uses surrounding the Park. As shown, the surrounding land uses consist of Residential, Commercial, Governmental and Industrial uses. Pockets of Residential land are generally located to the west, north and south of the Park. Wooded areas in the Park and Susquehanna Ave. itself provide an appropriate noise and light buffer to these residential areas. The commercial area to the west is also separated from the Park by Susquehanna Ave. No direct impacts from the Park on the Industrial/Manufacturing facilities located along the western edge of the Park (or vice versa) were identified during this Master Planning process. As noted previously, the R.J Corman railroad line creates a physical barrier and separates a smaller portion of the Park from the main Park area. Use of the line is limited and its operation does not impact use of the Park. The Curwensville Borough office is located on property adjacent to the Little League Field.



Tree Protection Area

Irvin Park is blessed with a significant number of large, historic and mature shade trees. Many of these trees provide considerable value to the public and their recreation experiences at the park. The most significant of which are located generally on the western side of the Park between Susquehanna Ave., Irvin Park Rd., the Susquehanna River and Smith St. One of the positive measures already in place is the provision requiring a replacement tree to be planted in the Park whenever a tree is removed in this Tree Protection Area. This area is highlighted on the map above.

Irvin Park Master Site Development Plan

Soils

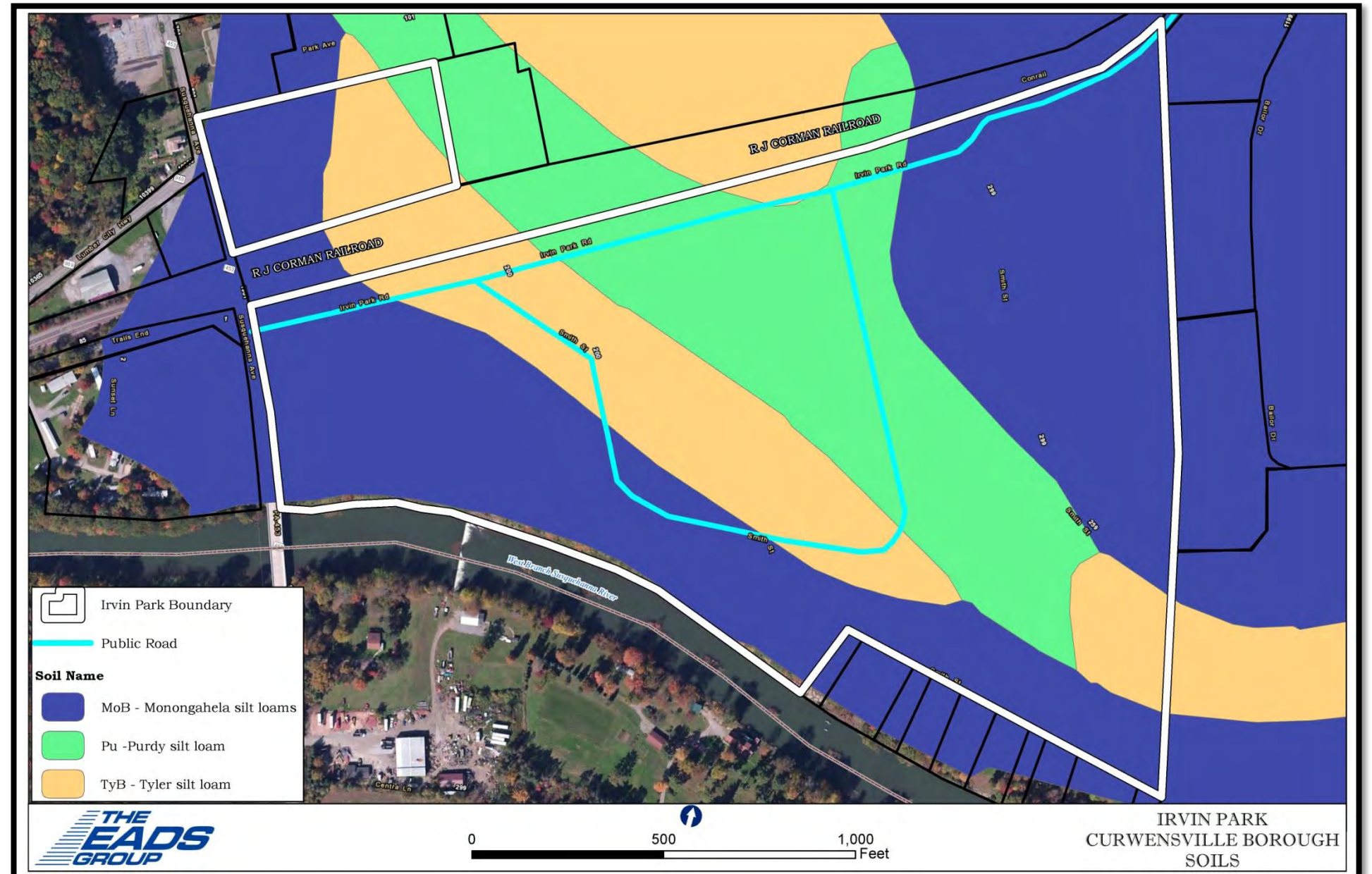
There are three (3) types of soil types located in Irvin Park. As shown on the Soils map to the right, these include the Monongahela silt loam (MoB), Purdy silt loam (Pu) and the Tyler silt loam (TyB) soils.

Monongahela silt loam (MoB) soils are typically found in areas with 3 to 8 percent slopes and is described as being moderately well drained. Purdy silt loam (Pu) soils are typically found in flat areas with 0 to 2 percent slopes and are described as being poorly drained. Tyler silt loam (TyB) soils are typically found in areas with 3 to 6 percent slopes and area described as being somewhat poorly drained.

Suitability and Limitation ratings, specifically focused on recreation facilities, were obtained and review for each soil type. The chart below highlights the limitations of each soil type for standard recreation area facilities. Since Irvin Park is a developed Park area with numerous recreation amenities, the suitability and limitation information for recreation development is provided for reference purposes only.

Soil	Playgrounds	Camp Areas	Paths/Trails	Picnic Areas
MoB	Very limited	Somewhat limited	Somewhat limited	Somewhat limited
Pu	Very limited	Very limited	Very limited	Very limited
TyB	Very limited	Very limited	Somewhat limited	Somewhat limited

"Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use.



Irvin Park Master Site Development Plan

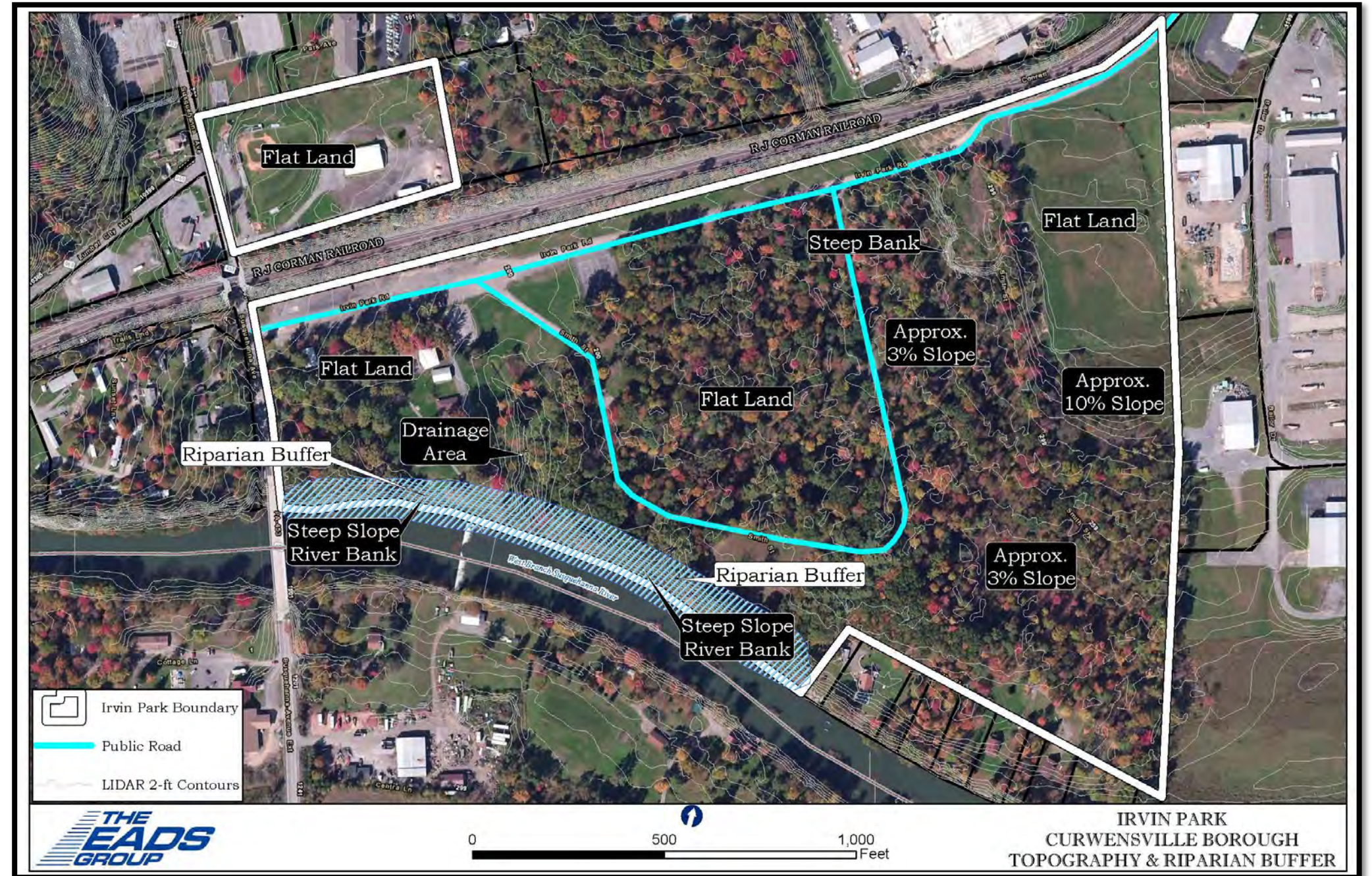
Topography

Irvin Park is located on mostly level flat land. A notable exemption to this are the steep slopes created by the West Branch Susquehanna River bank located along the far southern edge of the Park. These steep slopes do make it difficult for Park users and in particular canoes and kayakers to access the Rivers from the Park (see photos below). A small portion of the Park at its eastern edge (just below Sherman Fields) has slopes that are approximately 10%. A steep bank surrounds an area just off of Irvin Park Rd. that is used by the Borough for composting and related activities.



Riparian Buffer

The Clearfield County Natural Heritage Inventory (2004) identifies the importance of maintaining riparian buffers to the West Branch of the Susquehanna River. Approximately a quarter mile stretch of West Branch of the Susquehanna River bank and riparian buffer zone is located in the Park. This area is highlighted on the map to the right.

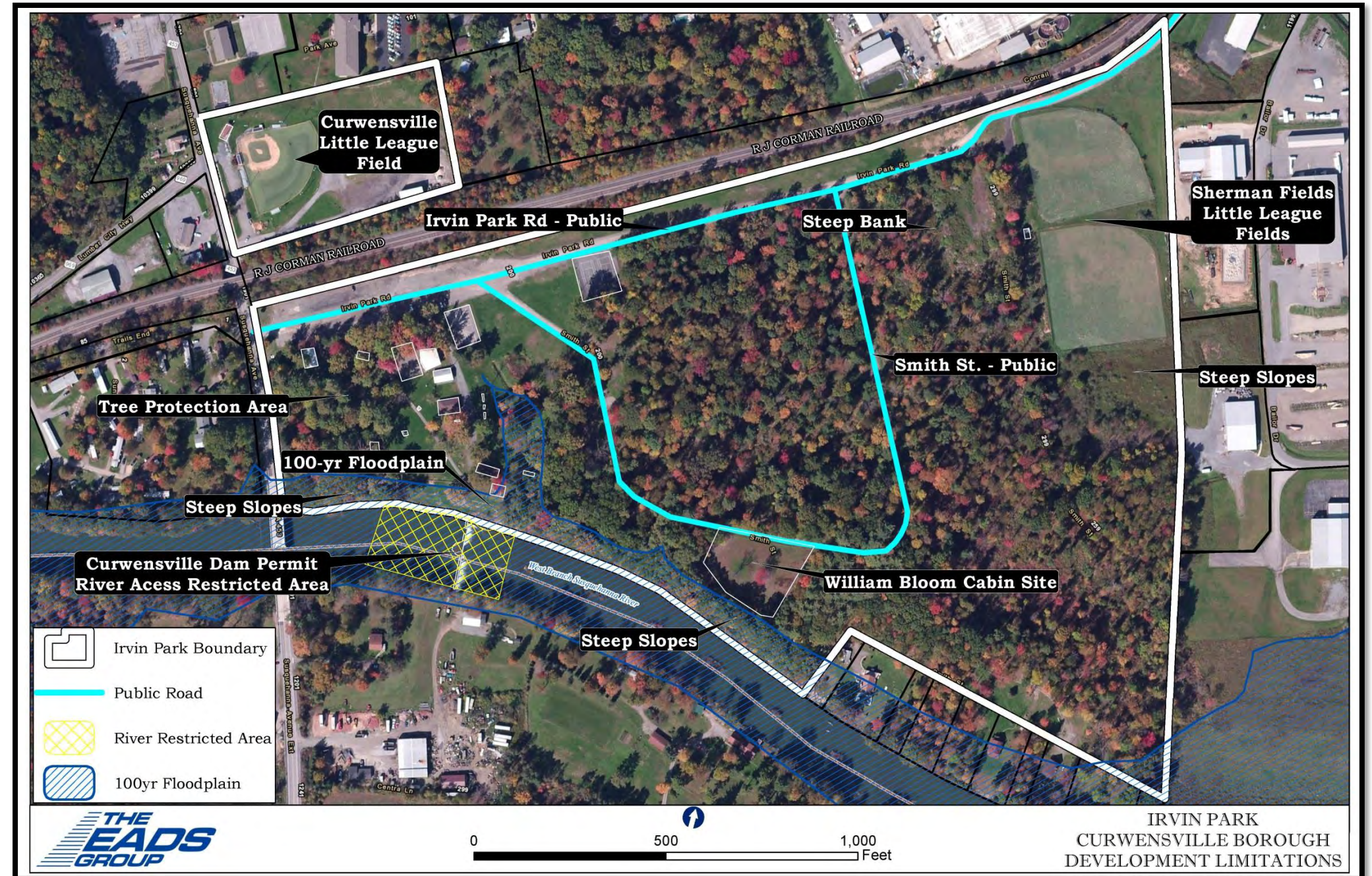


Irvin Park Master Site Development Plan

Development Limitations

This Site Information and Analysis section culminates in a summary of the site limitations that need to be considered in conjunction with the planning of future projects and facilities within Irvin Park. The map to the right highlights specific areas and/or features that reflect development limitations in Irvin Park. Below provides a brief summary description of the limitations.

- Little League Ball Fields – The Curwensville Little League Field and Sherman Fields and associated amenities were developed and are actively managed and operated by the Curwensville Little League Association through cooperation from Curwensville Borough. Developing features that would impact use of these areas would not be appropriate.
- William Bloom Cabin Site (Historic Feature) - This area is the William Bloom (i.e. reported as the first settler of the County) cabin site. It is also thought that this area may have earlier been a site important for Native Americans. Any development in that would impact the site would not be appropriate.
- 100-yr Floodplain - Portions of the Park are with the 100-yr floodplain of the West Branch Susquehanna River. Installation of permanent structures within the floodplain would not be appropriate.
- Tree Protection Area – Generally consists of the area at the western edge of the Park bordered by Susquehanna Ave, Irvin Park Rd and Smith St. A majority of the Park's facilities are already located in this area. Any trees removed in this area are required to be replaced in the Park. Installation of facilities that would require removal of trees in this area would not be appropriate.
- Steep Slopes – There are a few areas in the Park with Steep Slopes over 10%. The most prominent of these is the river bank of the West Branch Susquehanna River which extends along the southern edge of the Park. Installation of permanent structures other than vegetated landscaping or walkways within these areas would not be appropriate.
- River Access Restriction Area – The Curwensville run-of-the-river Dam is permitted and inspected by the Pennsylvania Department of Environmental Protection. The placement of DANGER DAM warning signs on the adjacent river bank and an enforceable river access restriction of 200-ft upstream and 100-ft downstream of the dam are requirements of the dam's permit.





ACTIVITIES AND FACILITIES ANALYSIS

Irvin Park Master Site Development Plan

The following section provides an inventory and analysis of existing recreational facilities and amenities within Irvin Park and also the types of park improvements, programming and connections proposed for the Park. The information provided reflects an examination of the types of recreation choices (Active or Passive) provided at Irvin Park and those proposed for the Park. This type of evaluation provided the Project Study Committee with a better understanding of how the Park is current providing recreation opportunities to the community and how the proposed improvements will allow the Park to offer a wider range of recreation opportunities moving forward.

Curwensville Days

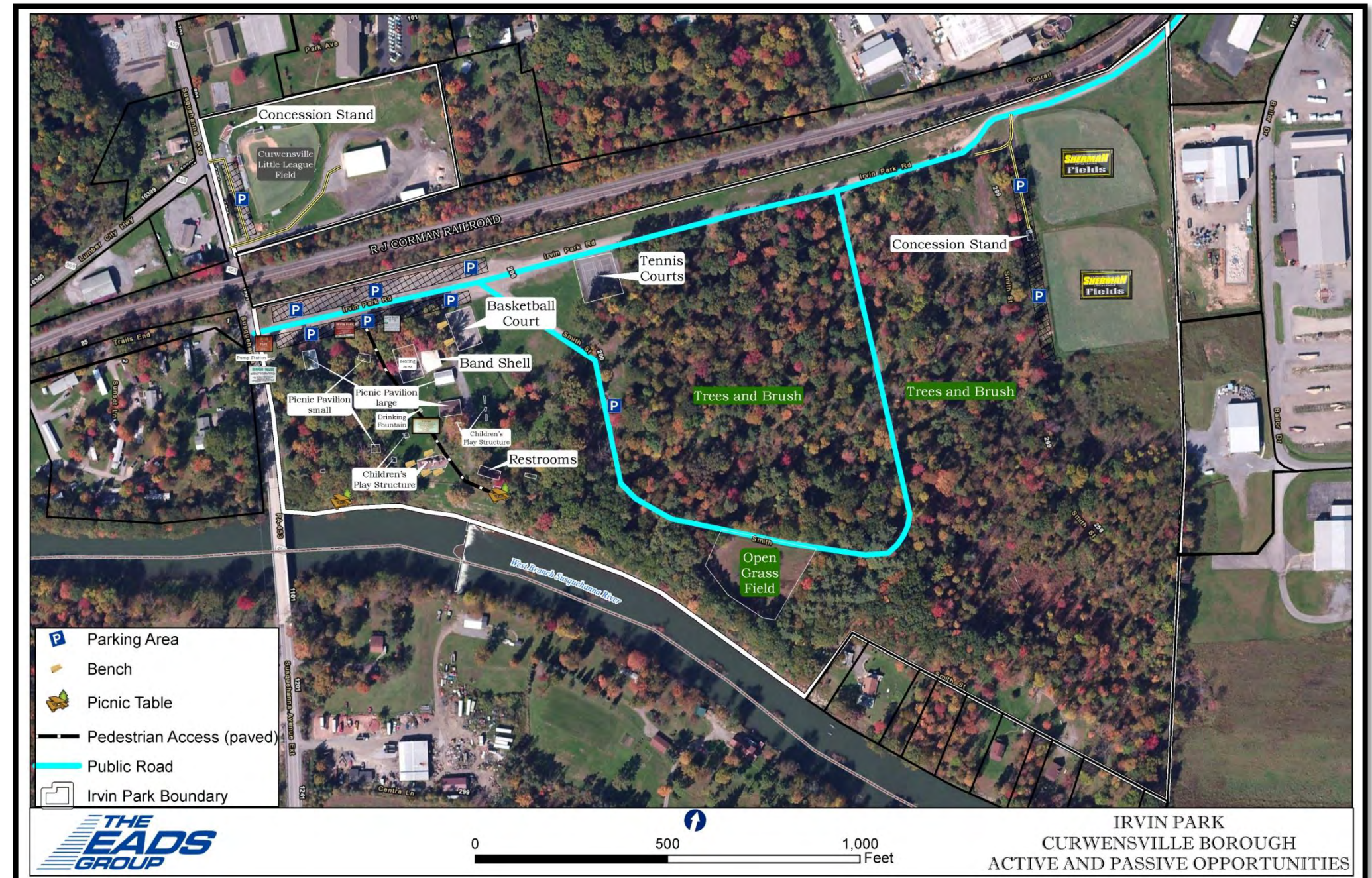
Irvin Park is home to the annual Curwensville Days festival. Curwensville Days is a weeklong festival held in July and includes food vendors, games and live entertainment all located within the Park. Curwensville Days uses existing facilities at the Park including the parking areas, pavilions and Band Shell. Parking in the Park is at a premium during Curwensville Days and sometimes that demand can be greater than what is available. Creating additional parking areas in the Park should be considered.

Existing Passive and Active Recreation Opportunities

Users of Irvin Park want a mix of passive and active forms of recreation. Irvin Park does offer a mix of active and passive recreation choices. An Active recreation type is any facility or activity requiring a user to exert an above normal level of effort to participate. Passive Recreation is any facility or activity that can be experienced with little to no extra effort. Active recreation type facilities and amenities offered at Irvin Park include playground apparatuses and areas, tennis and basketball courts and two (2) baseball/softball field areas. More passive forms of recreation available at the Park includes picnic pavilions and tables, concession stands, benches, the band shell, the paved pedestrian access way and wooded areas. Irvin Park Rd. and Smith St. are also used by pedestrians as a walking route. They both provide a compact surface and a relatively easy grade which provides for a passive walking experience. Public restroom facilities are also provided for Park users. The map to the right highlights the locations of these existing Active and Passive recreation opportunities in the Park.

Facility Conditions

Provided on the following page is additional information for selected existing facilities at the Park. Information on their condition and recreation type (Active or Passive) is also provided.



Irvin Park Master Site Development Plan

Facility Description	Photo
<p>Pavilions – There are five (5) pavilions (P1 – P5) at the Park. Three (3) are larger and contain 14 picnic tables each. These pavilions also each have a stable asphalt floor and contain lighting and electric. The two (2) smaller pavilions each contain two (2) picnic tables and also have a stabilized floor with lighting and electric available. There are two (2) additional picnic tables located along the top of the river bank that can be used by the public.</p> <p>Condition: Respondents to the Community Survey report that the Pavilions are in Good Condition.</p> <p>RECREATION TYPE: PASSIVE</p>	
<p>Band Shell – A prominent feature in the Park is the Band Shell. The Band Shell consists of a stage and backstage staging areas. An ADA ramp connects to the rear of the facility. A large asphalt sitting area is located at the front of the stage area.</p> <p>Condition: Respondents to the Community Survey report that the Band Shell is in Good Condition.</p> <p>RECREATION TYPE: PASSIVE</p>	
<p>Restrooms – A public restroom facility is located in the main part of the Park. Separate Women's and Men's facilities are provided. The facility is connected to the public water and sewage system.</p> <p>Condition: Respondents to the Community Survey report that the Restrooms are in Poor Condition and would benefit from painting the exterior and interior.</p> <p>RECREATION TYPE: PASSIVE</p>	
<p>Public Roads for Walkers – Irvin Park Rd is located thru the Park while Smith St. loops thru the Park connecting with Irvin Park Rd. at two points. The surface of both roads consists of crushed sandstone that expells dust when cars drive on it.</p> <p>Condition: Reported that th dust expelling from the roads coat the pavilions and surrounding area and result in increase maintenance requirements.</p> <p>RECREATION TYPE: PASSIVE</p>	

Facility Description	Photo
<p>Tennis Courts – Two (2) tennis courts are located just off of Irvin Park Rd. The courts have a hard surface in fair condition with appropriate stripping for its use. The tennis courts are fully enclosed by fencing.</p> <p>Condition: Respondents to the Community Survey report that the Tennis Courts are in Fair Condition.</p> <p>RECREATION TYPE: ACTIVE</p>	
<p>Basketball Court - A basketball court is located just off of Irvin Park Rd. The court has a hard surface in fair condition with appropriate stripping for its use.</p> <p>Condition: Respondents to the Community Survey report that the Basketball Court is in Fair Condition.</p> <p>RECREATION TYPE: ACTIVE</p>	
<p>Play Apparatus – Two (2) separate areas in the Park contain play apparatus. A new larger playground set is located closer to the river bank area . A second area consisting of older syle equipment, including two (2) swing sets and a set of teeter totters are located to the rear of Pavilions P1 and P2.</p> <p>Condition: Respondents to the Community Survey report that the Play Apparatus are in Good Condition.</p> <p>RECREATION TYPE: ACTIVE</p>	
<p>Little League Ball Fields - There are two (2) areas in the Park that were developed and are activley managed and operated by the Curwensville Little League Association. These include the Curwensville Little League field area located on the smaller portion of the Park separated from the main Park area and the Sherman Fields located on the far eastern edge of the Park.</p> <p>Condition: Respondents to the Community Survey report that the Ball Fields are in Good Condition.</p> <p>RECREATION TYPE: ACTIVE</p>	

Irvin Park Master Site Development Plan

Proposed Park Improvement Ideas

The Project Study Committee used the information obtained from the Community Survey and from the public meetings conducted as part of this planning effort along with the results of the Activity and Facility Analysis described previously to develop an inventory of proposed Park Improvement ideas. The Park Improvements are organized into the following four (4) categories:

- New Facility/Amenity
- Enhance Existing Facility/Amenity
- Park Connections
- Recreation Programming

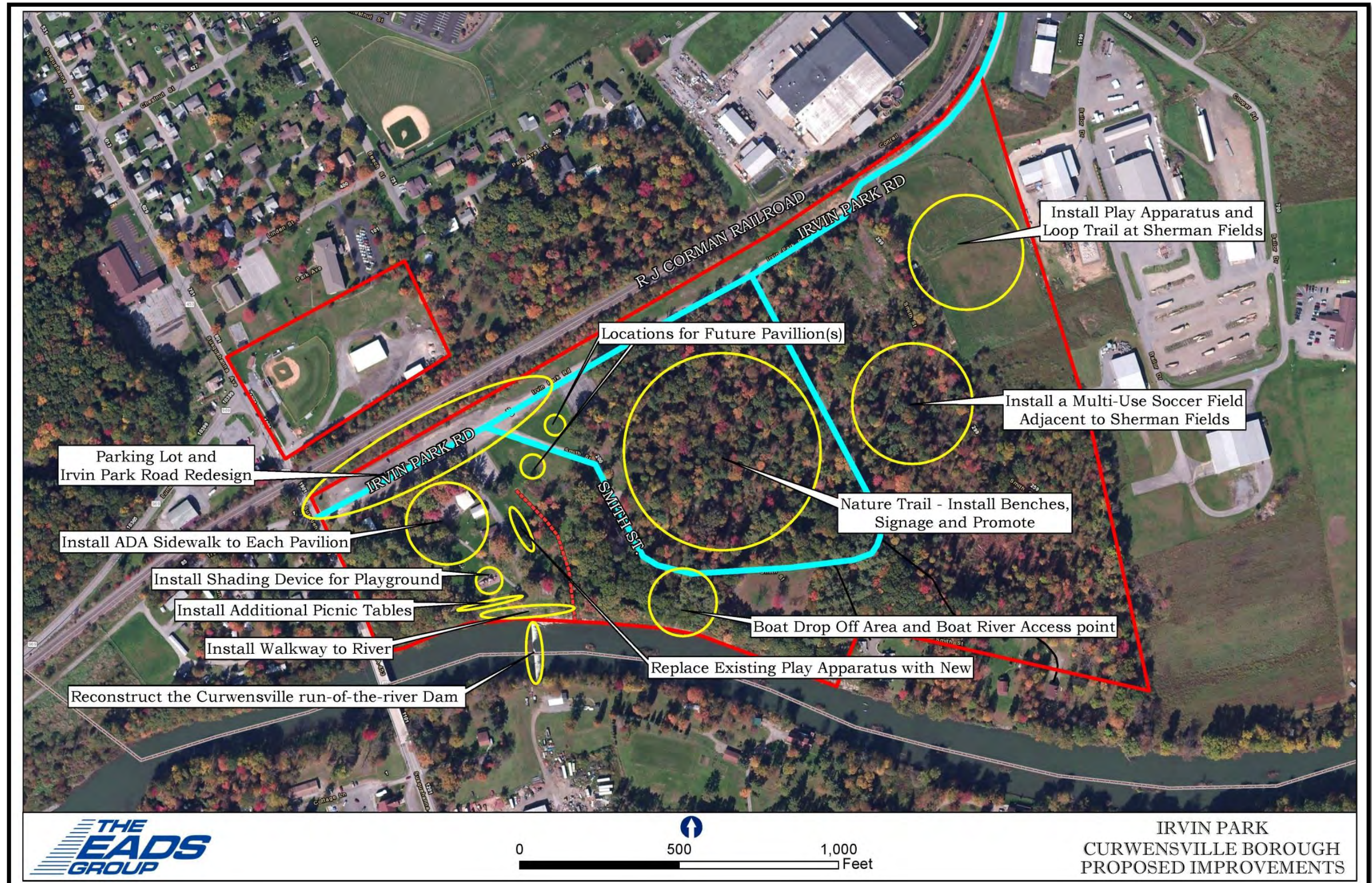
The following section describes the Park Improvements that the Project Study Committee envisions for Irvin Park. Guidance on Recreation Type (Active or Passive), Skill Level (High or Low) and Support facilities is provided for planning purposes. As noted previously in this section, Active recreation is considered to be a facility or activity requiring a user to exert an above normal level of effort to participate. Passive Recreation is considered a facility or activity that can be experienced with little to no extra effort. A High Skill level requires having an advanced skill or needing a higher level of effort to participate in an activity/use a facility. Low Skill level indicates that the facility/activity can be experienced by a normal range of participants. Information in the Recreation Type column reflects a participants use of the facility/activity described in the Project column. It is a given that all Passive recreation types require a Low Skill Level to use.

New Facility/Amenity			
Project	Comments	Recreation Type / Skill Level	Support Facilities
Create a new Boat Drop Off area with River access <i>Located within 100-yr floodplain</i>	Not to be used as boater parking lot.	Active High Skill Level	<ul style="list-style-type: none"> • Existing Parking Lot to be used • Directional and Informational Signage • Install a concrete or similar ramp to the River • Walkway connection the Drop Area with the Park
Install a multi-use soccer fields with connecting walkways near Sherman Field <i>ADA Compliance</i>	To be constructed and maintained by the Curwensville Soccer Association or other Association	Active High Skill Level	Construct Parking area and Walkways to connect to Sherman Field
Construct a Nature Trail	Locate within the Wooded Area near Smith St.	Passive	<ul style="list-style-type: none"> • Directional and Informational Signage • Benches and Tables for nature watching and enjoyment should be installed
Construct new Pavilions for public rental <i>ADA Compliance</i>	To be accessible from Smith St. Will provide an additional revenue source to the Park.	Passive	Construct Parking areas and Walkways to connect each Pavilion
Install new picnic tables and river walk trail overlooking the River <i>ADA Compliance</i>	Serves functional purpose and takes advantage of the aesthetic view of the River.	Passive	Construct walkway connecting to the asphalt pedestrian walkway
Sign and designate a walkway between restroom facility and Boat Drop Off Area	Serves functional purpose by providing walking connection to/from Park and Drop Off area	Passive	Construct walkway connecting to the asphalt pedestrian walkway

Irvin Park Master Site Development Plan

Enhance Existing Facility/Amenity			
Project	Comments	Recreation Type / Skill Level	Support Facilities
Create a pathway leading down to the River <i>Located within 100-yr floodplain</i>	Pathway should be suitable for elderly users who want to walk down to the river.	Active Low Skill Level	Visual improvements are recommended to beautify the pathway and surrounding area
Replace older Play Apparatus behind Pavilions with New	Install similar style of equipment	Active High Skill Level	Existing supportive facilities are adequate
Install Play Apparatus at Sherman Fields	For parents and siblings of kids using the fields for games and tournaments.	Active High Skill Level	Existing supportive facilities are adequate
Install shading device to cool down the large Playground apparatus	Playground equipment becomes too hot in the summer time	Passive	Existing supportive facilities are adequate
Install Loop Trail at Sherman Fields <i>ADA Compliance</i>	For parents and siblings of kids using the fields for games and tournaments.	Passive	Existing supportive facilities are adequate
Repair the Curwensville run-of-the-river Dam <i>Located within 100-yr floodplain –</i>	Stabilize the Dam	Passive	Existing supportive facilities are adequate
Redesign the main Parking Lot and Entrance Area- <i>ADA Compliance</i>	Realignment of Irvin Park Rd between Susquehanna Ave and Smith Rd to create a safer and visually attractive entrance and parking area along Irvin Park Road.	Passive	Existing supportive facilities are adequate
Install sidewalks to connect the existing Pavilions to the paved pedestrian sidewalk <i>ADA Compliance</i>	Would spur off of existing asphalt pedestrian walkway to provide continuous stabilized access	Passive	Existing supportive facilities are adequate

Irvin Park Master Site Development Plan



Irvin Park Master Site Development Plan

Park Connections			
Project	Comments	Recreation Type / Skill Level	Support Facilities
Identify potential routes to connect Irvin Park with the Ammerman Trail	Identify conceptual level options only	Active Low Skill Level	<ul style="list-style-type: none"> Internal – install signage to mark Route. External – complete sidewalk / road improvements to accommodate pedestrians.
Identify potential routes to connect the Curwensville School campus to Irvin Park	Identify conceptual level options only	Passive	<ul style="list-style-type: none"> Internal - identify or construct new walking routes inside the Park that connect uses to the center of Park. External – complete sidewalk / road improvements to accommodate pedestrians.

Recreation Programming			
Project	Comments	Recreation Type / Skill Level	Support Facilities
Adult and Youth Fitness	Promote to existing service providers in the community that the Park can be used for classes	Active High Skill Level	Use existing facilities and areas with the Park
Activities for Teens	Promote to existing service providers in the community, to girl and boy scout troops and other existing organizations that Park can be used for these types of activities	Active Low Skill Level	Use existing facilities and areas with the Park
Summer Youth Camps	Promote to existing service providers in the community, to girl and boy scout troops and other existing organizations that Park can be used for these types of activities	Active Low Skill Level	Use existing facilities and areas with the Park
Nature/Environmental Education	Expand opportunities in conjunction with a new Natural Trail	Passive	Use existing facilities and areas with the Park
Concerts at Band Shell	Better promote the availability of the Band Shell for these types of events	Passive	Use existing facilities and areas with the Park

A photograph of a park area. In the foreground, there is a red metal fence with three horizontal rails. Behind the fence is a gravel path that leads towards a building in the background. The building has a dark roof and large windows. There are many trees and greenery around the building. The text "DESIGN CONSIDERATIONS" is overlaid in the center of the image.

DESIGN CONSIDERATIONS

Irvin Park Master Site Development Plan

Improvements to Irvin Park made as a result of this Master Plan will need to consider certain guidelines, regulations and principles during the projects design and construction phases. The following summarizes the guidelines, regulations and principles most relevant to Irvin Park. The Design Considerations map below highlights proposed Park Improvement Projects and gives guidance as to which guidelines, regulations and principles will need to be considered as the projects move forward toward construction.

ADA Accessibility - the regulatory guidelines of the Architectural Barriers Act of 1968, Section 504 of the Rehabilitation Act of 1973, as amended, and the Americans with Disabilities Act of 1990 and the 2010 ADA Standards for Accessible Design (2010 Standards) for providing universal accessibility to facilities will be followed as appropriate in the construction of parking areas, pedestrian access ways, pavilions and/or recreation related facilities.

Playground Equipment - all new playground equipment installed at the Park shall be in compliance with ASTM and CPSC guidelines.

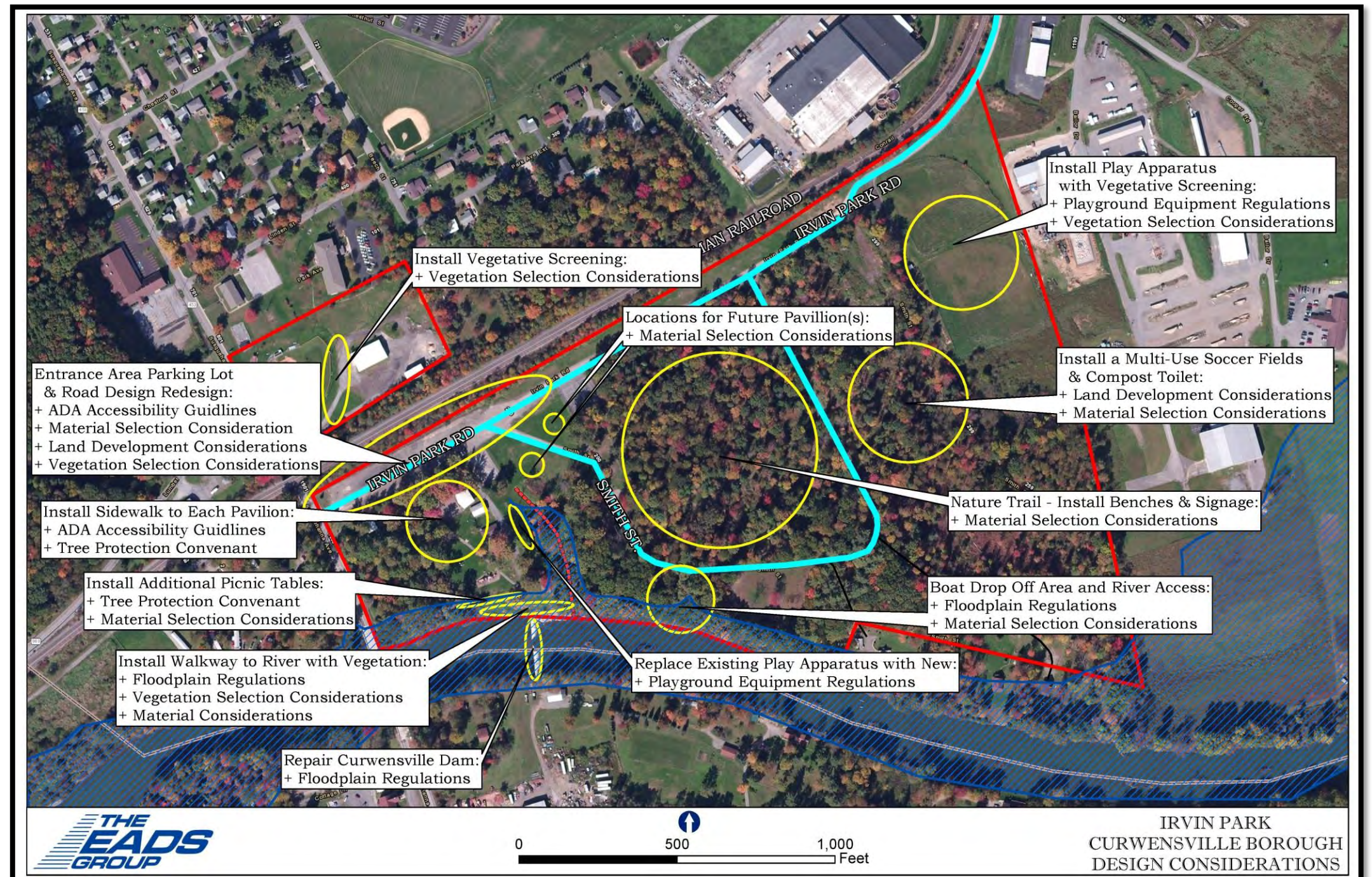
Material Selection - Material choices shall consider alternate green materials as practical to reduce environmental impacts and disturbance to the natural setting.

Vegetation Selection - Recommended vegetation and landscaping will use native plants as appropriate.

Land Development - Park improvements must follow Curwensville Borough's land development review process. Green and Sustainable facilities and practices and Stormwater Best Management Practices (BMPs) will be incorporated during the construction phase of any project. Use of pervious surfaces should be considered where applicable. The Pennsylvania Stormwater Best Management Practices Manual offers numerous potential design solutions for handling stormwater on site.

Floodplain Regulations - Portions of Irvin Park are located within the 100-yr floodplain of the West Branch Susquehanna River. Facilities installed within the flood plain will need to be consistent with the regulations established in local floodplain regulations. These generally include river access pathways and associated features.

Tree Protection Covenant - Park improvements must consider the Tree Protection covenant requiring a one to one replacement of trees if any are removed or otherwise disturbed in the area generally between Smith St. - Susquehanna Ave - Irvin Park Rd and the West Branch Susquehanna River.





DESIGN PROCESS

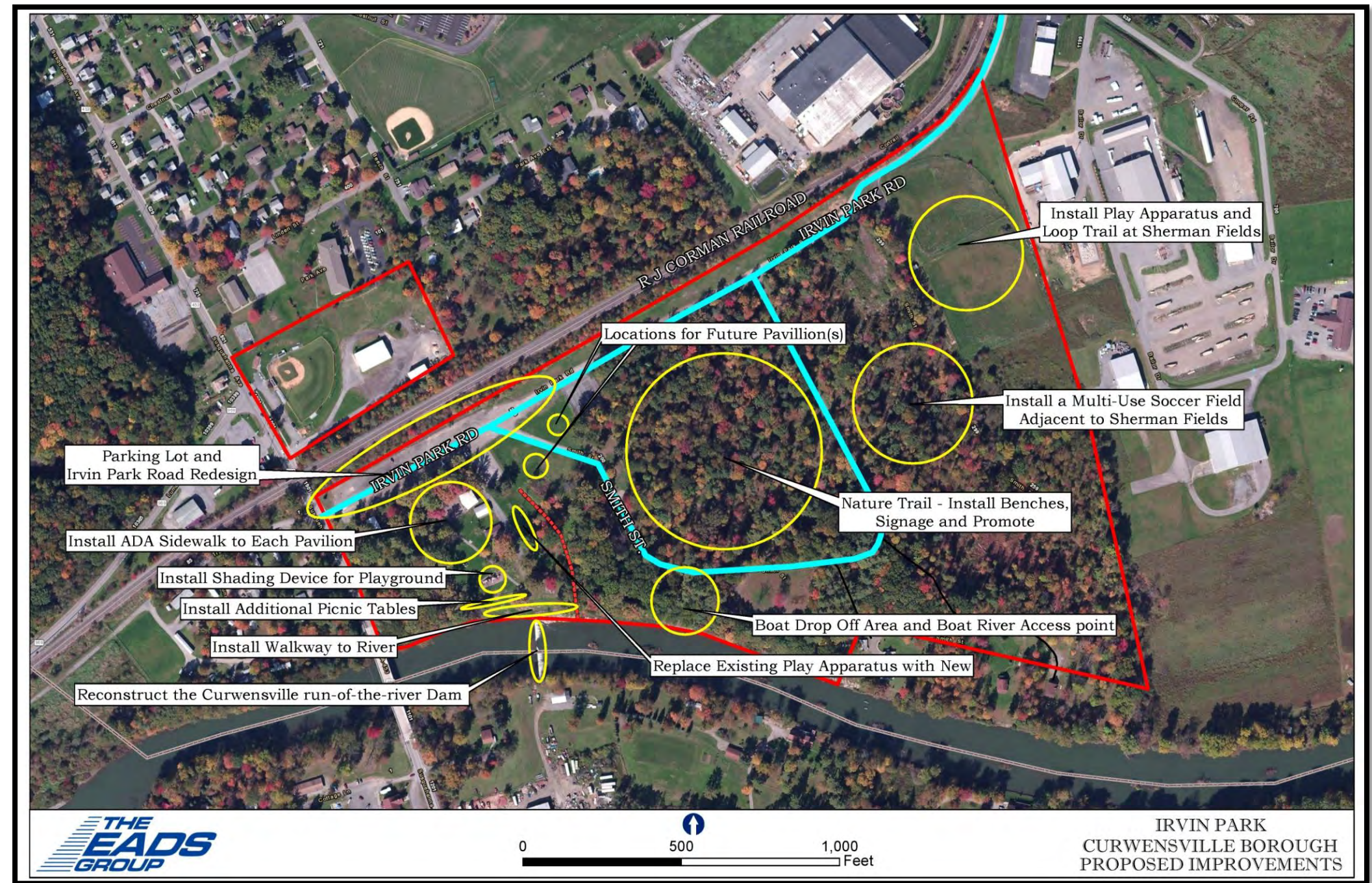
Irvin Park Master Site Development Plan

Initial Park Improvement Recommendations

A meeting with the Project Study Committee was held on October 19th, 2016 to review the list of initial Park Improvement ideas, results of the Public Meeting held with Curwensville Borough Council and results of the Community Survey. Robust discussion and collaboration amongst the attendees added to the productivity of the meeting. In reflection of the public input received, Committee members provided their own input and guidance on the types of facilities and amenities they would like to see at the Park. Their input was part in-reflection of the Community Survey results and from their local knowledge of the Curwensville Community and their personal experiences with Irvin Park.

The initial set of Park Improvement ideas (described previously in the Activities and Facilities Analysis Section) were further defined by the Study Committee during this meeting and evolved into a working set of Park Improvement Recommendations. The recommendations are identified below and are visually highlighted on the Proposed Improvements map to the right:

- Reconstruct the main Parking Lot and Entrance Area
- Realign Irvin Park Rd between Susquehanna Ave and Smith Rd as part of the Parking Lot redesign
- Incorporate Stone markers from Irvin Park into the redesigned Entrance Area
- River Access - Create a Boat Drop Off area and River Access point just west of the open grassy area
- Nature Trail - Install Signage in the Park and identify on a website the former cardio-trail as an internal walking nature trail
- Construct a new stabilized walkway to the River connected to the pedestrian sidewalk and visually improve the surrounding area
- Install ADA access sidewalks to each pavilion
- Install a multi-use soccer field near Sherman Field
- Install Loop Trail around Sherman Fields



- Install Play Apparatus at Sherman Fields
- Construct two (2) additional Pavilions off of Smith St.
- Install shading devices on top of the large children's Playground
- Reconstruct the Curwensville run-of-the-river Dam
- Install/Replace Additional Play Apparatus
- Install additional picnic tables along the hillside overlooking the River

Irvin Park Master Site Development Plan

Conceptual Development Plan

The Overall Site Plan Drawing No. 1 below is the initial Conceptual Development Plan that translated the initial set of Park Improvement Concepts described above into a working plan drawing. Many of Irvin Park's existing facilities, developed areas, physical features and development limitations identified in the Site Information and Analysis section of this Plan governed how the proposed Park Improvements were incorporated into the Park. The following drawing represents an initial stage in developing the final Master Site Development Plan. Several versions of this conceptual drawing were prepared. Several revisions were made to best incorporate the proposed projects and features with existing conditions in the Park and to best meet the Study Committee's vision for the Park.



Irvin Park Master Site Development Plan

Draft Master Site Plan

A meeting with the Project Study Committee was held on January 11, 2017 to review the draft Master Site Development Plan shown below (Overall Site Plan Drawing No. 2). A robust discussion and review of the draft Master Site Plan was completed during the meeting. The following page summarizes the revisions requested by the Project Study Committee.



Irvin Park Master Site Development Plan

Redesigned Parking Lot Area

- Verify new width of Irvin Park Rd has capacity for two (2) larger trucks.
- Show how traffic will enter and exit

Fencing

- Install Stone and Lumber fencing parallel to the back side redesigned Parking Lot.
- Extend fencing along Susquehanna Ave.

Redesigned Entrance

- Add installation of two (2) Stone Marker signs – one on either side of the main entrance.

Basketball/Tennis Courts

- Convert Basketball court to sand volleyball court.
- Convert Tennis court to a Basketball court.

New Pavilions off of Smith St

- Add parking lots and connecting walkways.

River Walk

- Connect with the Tree Ring Project.

Playground shading device

- Install a capping system on top of the playground

Boat Drop Off Area

- Crushed stone base and signed for drop off only.
- Access to River towards the second river island.

Nature Trail

- Install picnic tables and/or 2 smaller pavilions between the trail and Smith St.

Soccer Fields

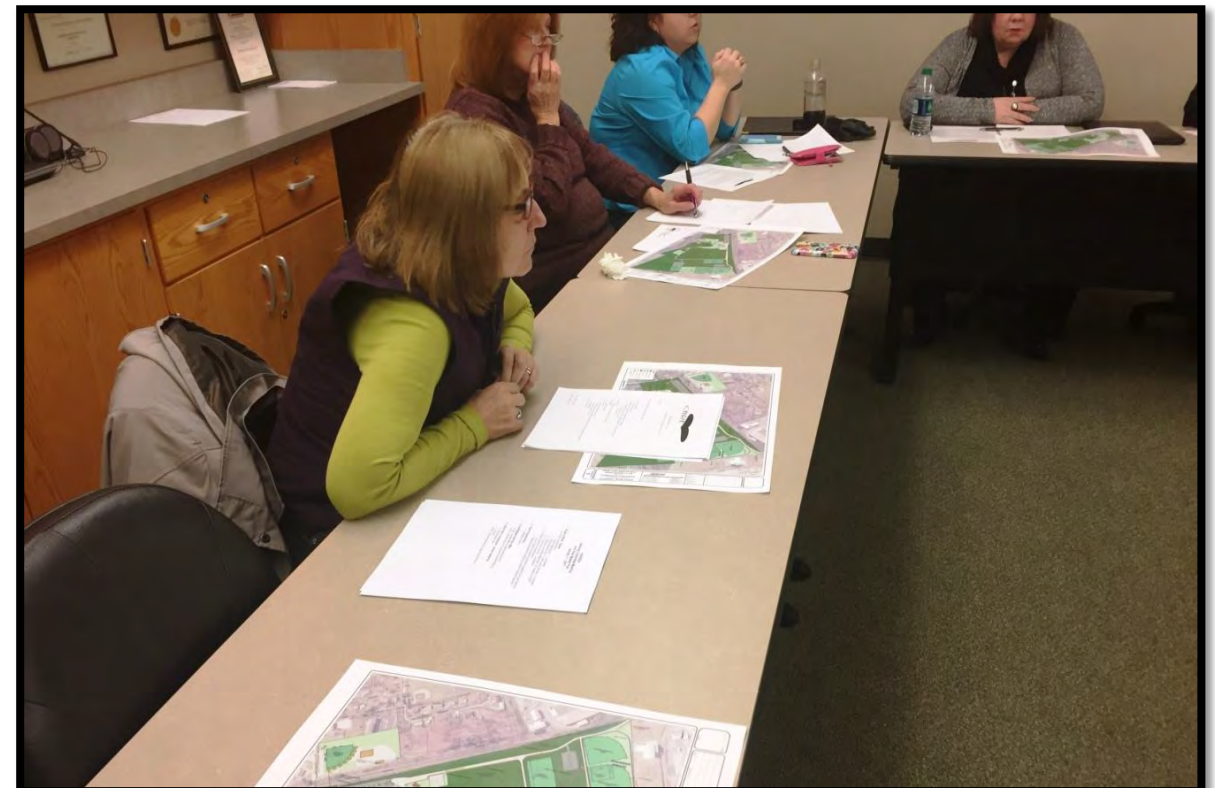
- Show an access way connecting the proposed parking lot to the proposed walk trail.
- Add a composting restroom facility near the existing concession stand.

Sherman Fields

- Add lighting around the fields.
- Add vegetative screen around playground area.

Curwensville Dam

- Approach will be to repair the Dam – not reconstruct



Irvin Park Master Site Development Plan

Final Draft Master Site Plan

A meeting with the Project Study Committee and the Public was held on June 14, 2017 to review the final draft Master Site Development Plan shown below (Overall Site Plan Drawing No. 3). A robust discussion and review of the draft Master Site Plan was completed during the meeting. The following page summarizes the revisions requested by the Project Study Committee.



Irvin Park Master Site Development Plan

Main Parking Lot

- Concern was raised on how the redesigned Main Parking Lot could limit the number of parking spaces available during Curwensville Days.
- Concern was also raised on how vehicles with boat trailers will disrupt the movement of vehicles through the new parking lot.

Revisions:

- A Head-In Overflow and Boat Trailer parking area located in the grassy area between Irvin Park Rd and the railroad embankment will be added.
- A walking trail will be added that will connect the Head-In Overflow and Boat Trailer parking area with the Matt Augustine Nature Trail to provide a more direct route for boaters walking back to/from the boat launch area.

Soccer Fields

- An attendee commented on the location and layout of the new soccer fields and also on an agreement that may be entered into between the Borough and the Curwensville Soccer Association.

Revisions:

- No changes to the layout will be made.
- Additional emphasis will be added in the Plan that Curwensville Borough will have the ultimate discretion over language in any type of agreement with the Soccer Association.

Scouting Area

- Notable input was received on how a section of the Park general located southeast of the Matt Augustine Nature Trail is actively used by Scouting troops.

Revisions:

- A Scouting Area will be added to the Master Site Plan.
- This area will have access from Smith St but not to the Matt Augustine Trail.



Irvin Park Master Site Development Plan

Park Connections

As described previously in this Plan, the Project Study Committee requested that the Master Plan conceptually identify and map connecting pedestrian routes between Irvin Park and the David S. Ammerman Trail and between Irvin Park and the nearby Curwensville School complex. Initial conceptual drawings depicting these potential connections were presented to the Project Study Committee. Requested revisions were then made.

Additional information on the Park Connection and Conceptual Mapping of the recommended connections are provided in the following Recommendations section of this Plan.

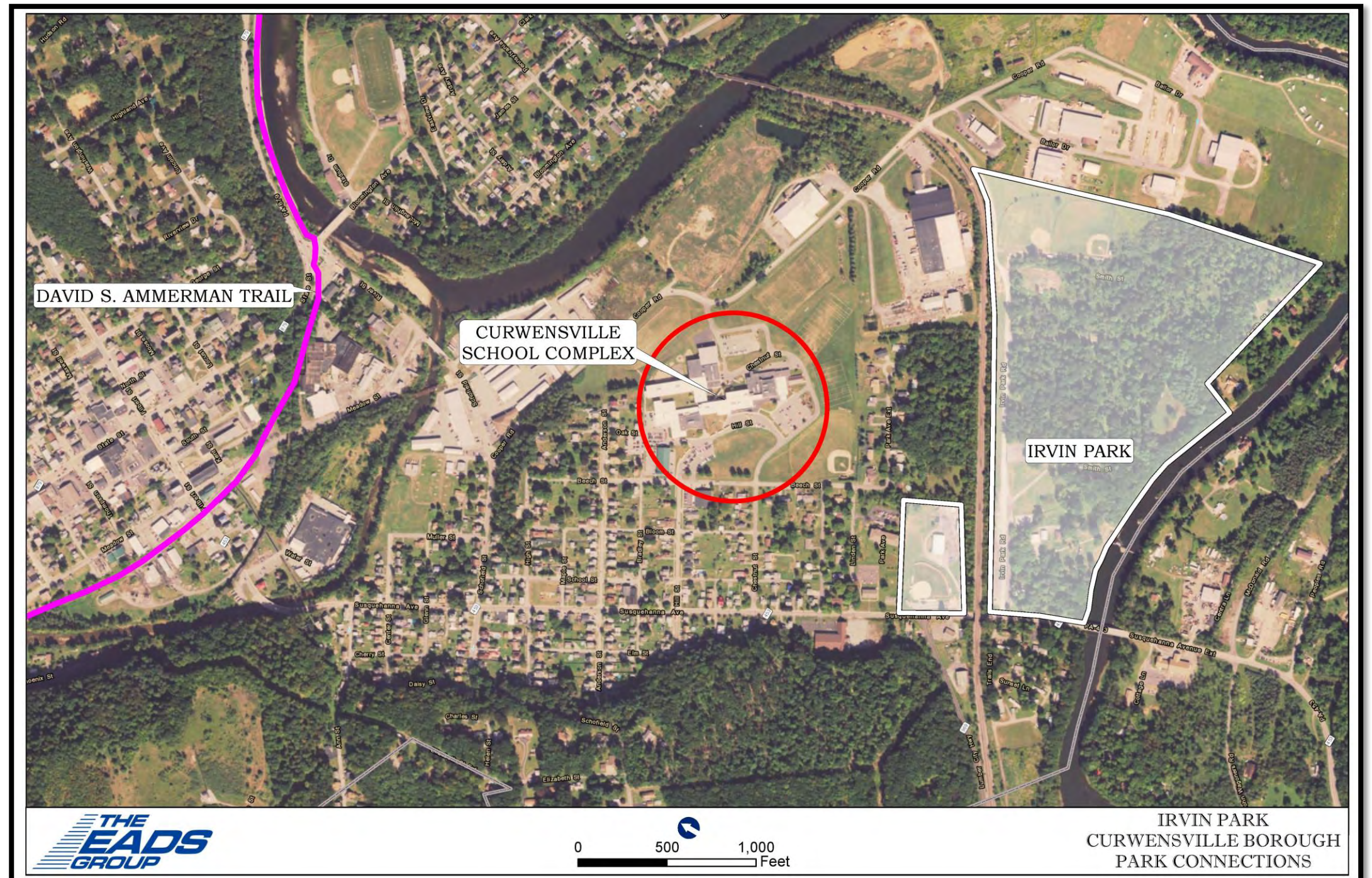
Recreation Programming

As described previously in this Plan, the Project Study Committee considered the input received from the Community Survey and identified that the following types of recreation programming be recommended in the Master Plan.

- Adult and Youth Fitness
- Activities for Teens
- Summer Youth Camps
- Nature and Environmental Education
- Concerts at the Band Shell
- Use of the Park for existing Community Events

Additional guidance was provided by the Study Committee on how to best develop recreation programming at the Park.

Information on the Recreation Programming Approach recommended for the Park is provided in the following Recommendations section of this Plan.

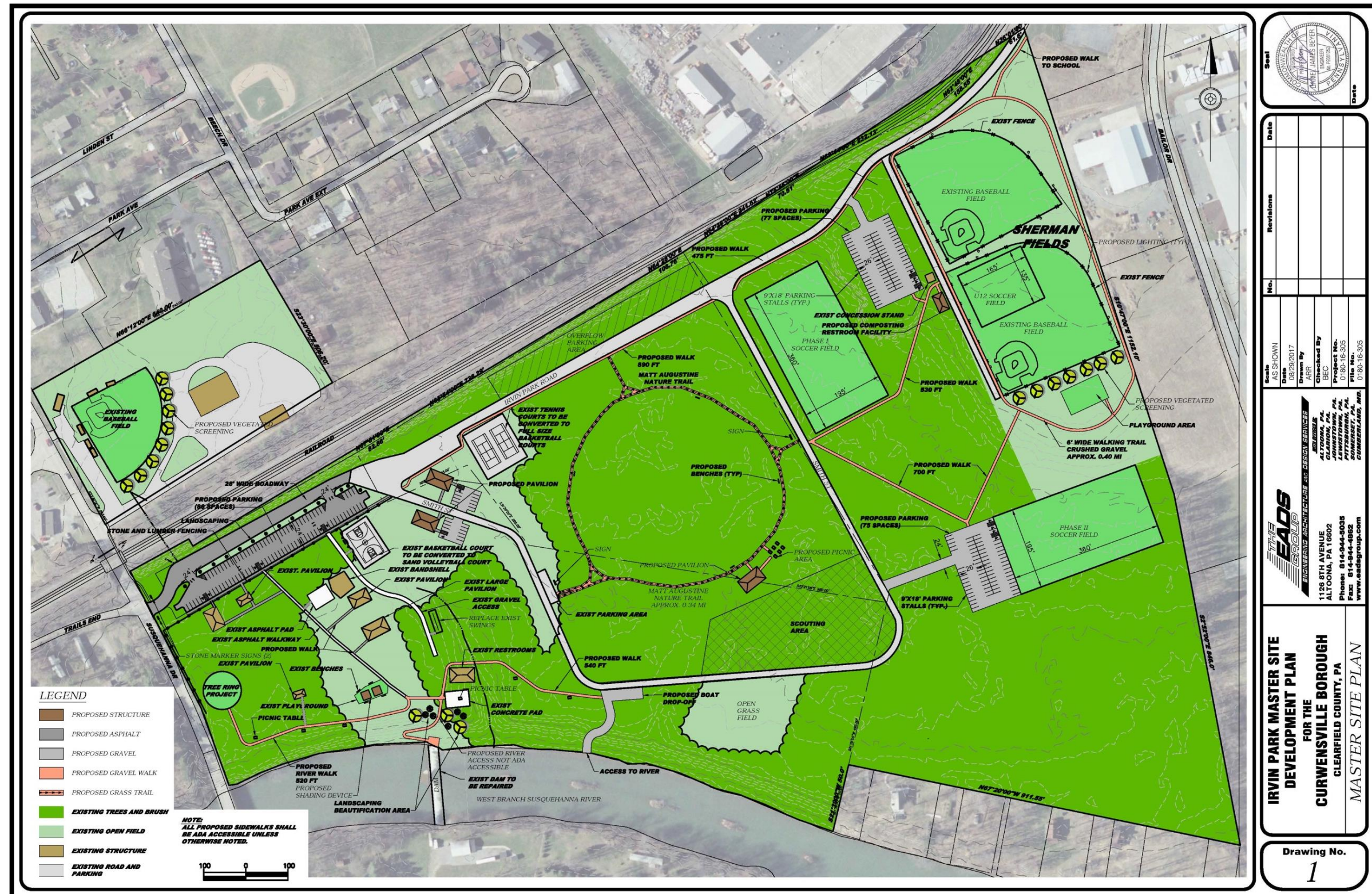




RECOMMENDATIONS

Irvin Park Master Site Development Plan

The Master Site Development Plan prepared for Irvin Park best represents the vision of the Park as a place to play volleyball, basketball, baseball, softball and soccer; where parents can bring their children to safely play; where boaters can easily access the River; where the community can gather for reunions, events and other social occasions; and where one can come to enjoy the nature and views of the River. The Study Committee truly believes that making the improvements recommended in this Plan will make Irvin Park a key community asset well into the future. The Final Master Site Development Plan is presented below. A full size copy of the Master Site Development Plan is provided in Appendix A.



Irvin Park Master Site Development Plan

Park Improvement Categories

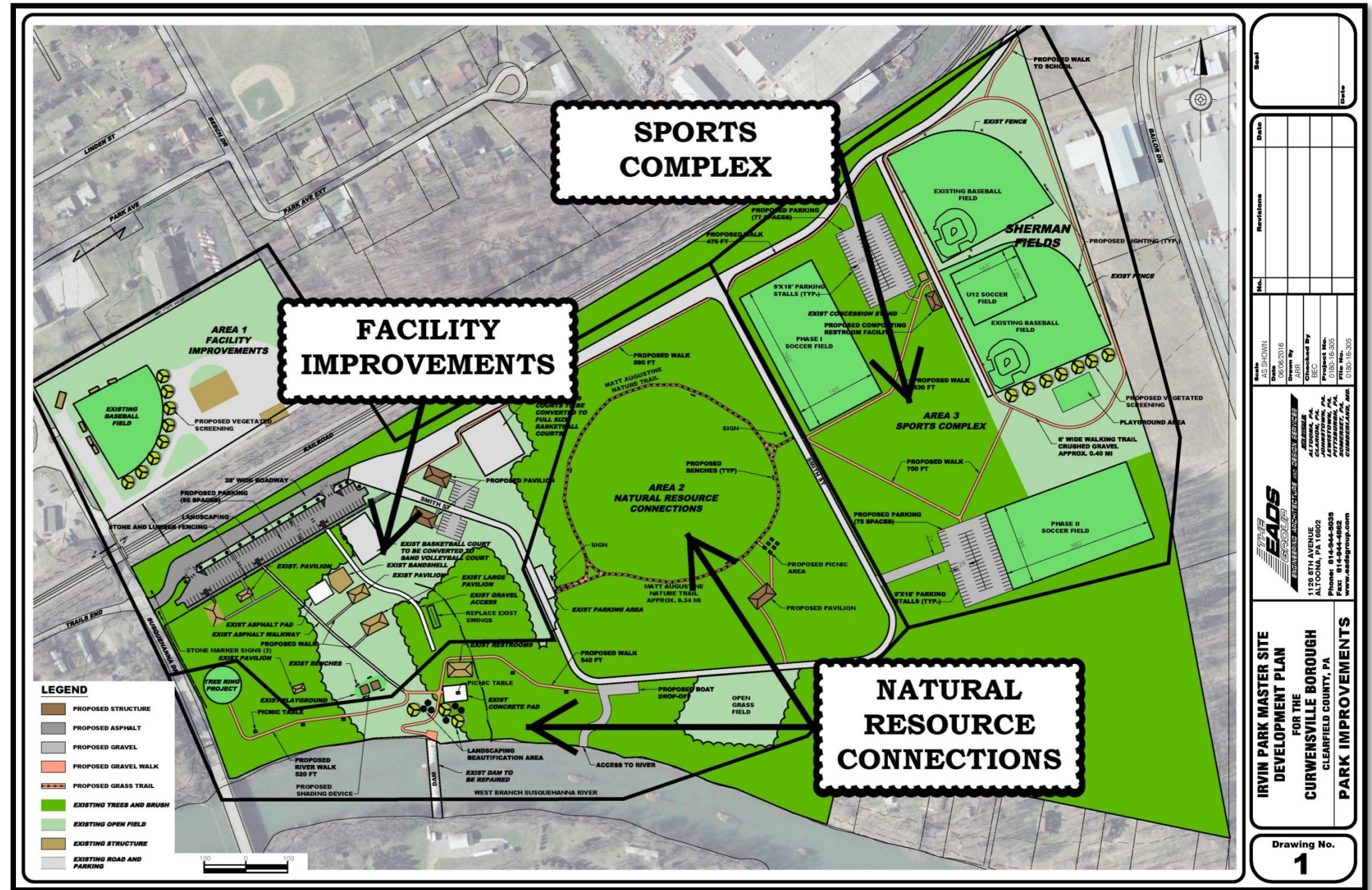
Given the number of different types of improvements identified for Irvin Park, it was necessary to organize them in a useful manner for general understanding and implementation purposes. Recommended Park Improvements are organized into the following three (3) categories:

- **Facility Improvements** – improvements focused on enhancing an existing facility within the Park.
- **Natural Resource Connections** – improvements focused on connecting users to a natural resource at the Park.
- **Sports Complex** - improvements associated with creating a multi-use sports area within the Park.

These categories describe the type of improvements recommended and also a geographic location within the Park. The map to the right highlights the general location within the Park associated with each category.

The following sections provide a conceptual map that highlights the recommended projects within each category. A detailed description of each project is also provided along with cost estimates.

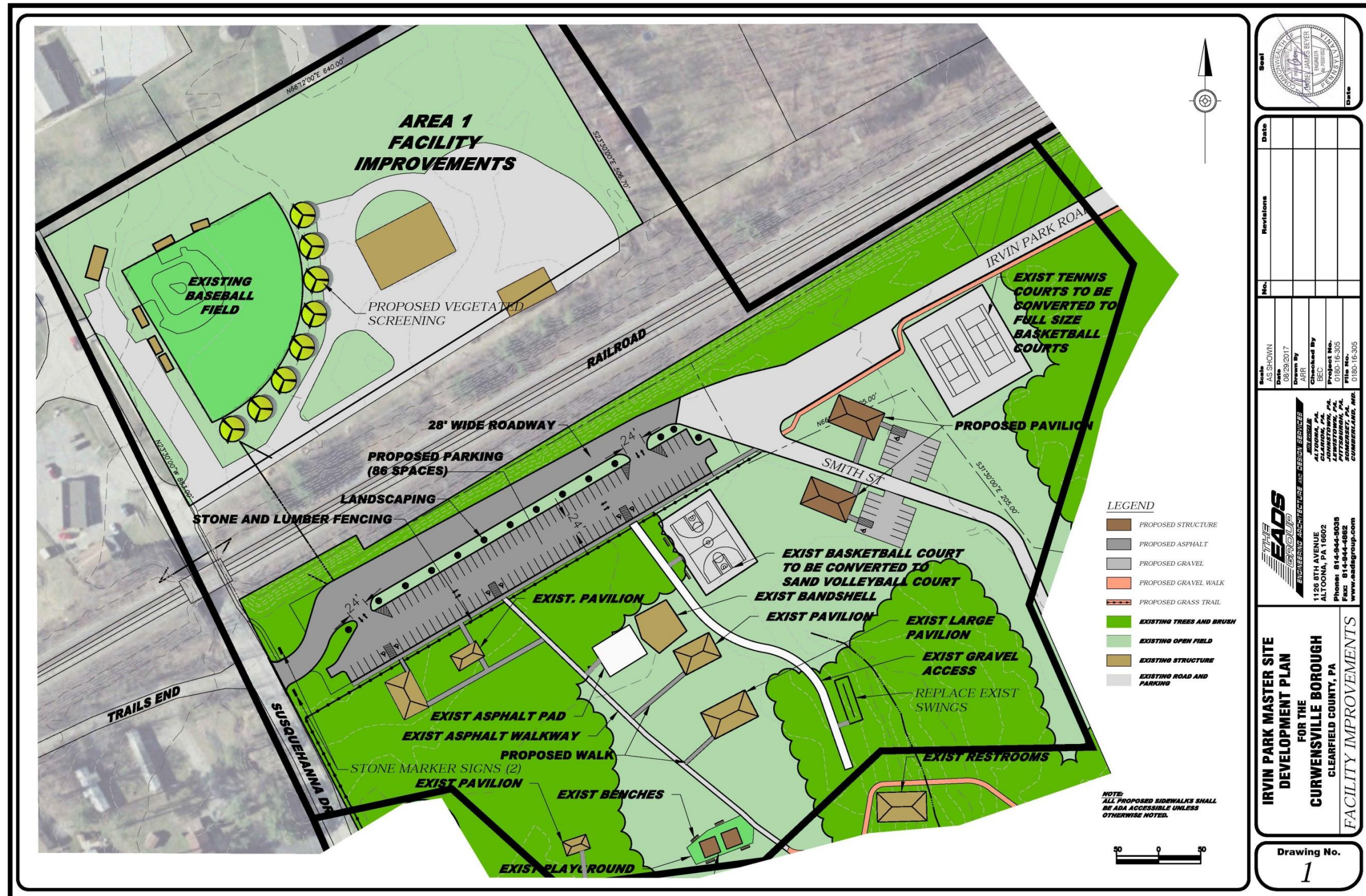
The provided cost estimates anticipate that Curwensville Borough will contract out all phases of construction. Thus, a contingency/inspection amount and a cost associated with design have been included with the cost estimates. Curwensville Borough would be able to reduce project costs significantly by using Borough staff or volunteer groups to construct all of or a portion of a project. For example, Curwensville Borough staff may be able to complete certain tasks at no cost such as clearing and grubbing/preparing the base for trail/walkway construction, erecting signs or general landscaping (plant installation). Volunteer labor can also be coupled with Borough oversight to accomplish certain development tasks. Various scouting groups, religious and business volunteer groups and other organizations can assist the Borough in the construction of pavilions, developing trails/walkways or general landscape installation.



Irvin Park Master Site Development Plan

FACILITY IMPROVEMENTS

The recommendations in this category are designed to improve and expand existing facilities located generally on the western side of the Park. The intent is to enhance the Park experience for users that regularly come and use Park facilities and to attract additional casual users to the Park. The conceptual map below highlights the recommended improvements. Descriptions of each recommendation and opinions of probable costs are provided on the following pages.



Irvin Park Master Site Development Plan

The recommended projects in this category are designed to improve the function of existing facilities in the main park area and to improve a user's overall experience in the Park:

- **New Parking Area** - The main parking area in the Park will be reconstructed to create a more functional and prominent parking area for the Park. The alignment of Irvin Park road in this area will be adjusted to allow for construction of the new parking area. The new alignment of Irvin Park Rd will be no less than 28-ft wide to accommodate larger trucks travelling in each direction through that area. The new parking area and the realigned portion of Irvin Park Rd will be asphalt paved to reduce the amount of airborne particulates that currently emanate from their existing surfaces. A landscaped vegetative buffer strip will be installed to separate the new parking area from Irvin Park Rd. Two (2) points of exit/entrance will be included with the parking area. Asphalt paving the parking lot will also improve access from the parking area to the Park's facilities. Parking spaces will be stripped and the required number of handicapped and accessible spaces will be included. It is envisioned that the new parking area will contain 86 parking spaces. An asphalt sidewalk will be constructed along the Park side edge of the parking area to improve mobility and access to and from the Park. This sidewalk will extend the entire length of the parking area and will terminate near Smith St. It is the intent to incorporate green and sustainable features with the stormwater management elements associated with the new parking lot area.
- **New Entrance Area** - In conjunction with the new parking area and alignment of Irvin Park Rd, the Main Entrance area into the Park off of Susquehanna Ave will be redesigned to better introduce the Park to users. The center piece of the new entrance area will be the placing of two (2) Stone Marker signs on either side of the entrance area. Existing Park signage along Susquehanna Ave and along the existing parking area will be relocated to this area. All non essential and inconsistent signage will be removed at the discretion of Curwensville Borough.
- **New Pavilions (2)** - Two (2) new pavilions will be constructed off of Smith St. The pavilions will be patterned off of the existing larger pavilions in the Park. A parking area and connecting walkway with a compacted base will be constructed with the each new pavilion. It is the intent to incorporate green and sustainable features with the stormwater management elements associated with the new parking area.
- **Stone and Lumber Fencing** - The existing required fencing along the parking lot area will be replaced with a decorative stone and lumber featured fencing system that will extend along the entire length of the new parking area and will continue southward along Susquehanna Ave.
- **ADA Asphalt Sidewalks Connecting to Pavilions** - Extending perpendicular from the new parking area will be two (2) ADA compliant sidewalks that will directly connect to the nearby pavilions. ADA compliant sidewalks will also be extended off of the existing asphalt pedestrian walkway aligned through the Park and will be directly connected to each pavilion.
- **Playground Shade Device** – Two (2) shading devices will be attached directly to the top of the the existing newer childrens playground apparatus to reduce excessive surface temperatures resulting from exposure to the mid day sun.
- **New Swing Set Apparatus** - The older sets of swings located behind Pavillions P1 and P2 will be replaced with a more modern set of swings and equipment.
- **Convert Basketball Court to Sand Volley Ball Court** - The existing basketball court will be converted to a full size sand volley ball court. .
- **Convert Tennis Court to Basketball Court** - The existing tennis courts will be replaced with a new full size basketball court.
- **Vegetative Screening around Little League field** - A vegetated screen will be planted around the entire outfield fence of the existing Little League baseball field. This will help to better separate the field from the Curwensville Borough garage structure located in that area and will provide a more unified view for batters.
- **Irvin Park Rd Walking Path** - A new walking path will be constructed along the south side of Irvin Park Rd. between Smith St. and Sherman Fields. The portion of the Irvin Park Walking Path included in this category will extend for approximately 262-lf from the terminus of the new asphalt sidewalk constructed with the new parking area towards Sherman Fields.



Irvin Park Master Site Development Plan

Estimate of Probable Cost:

The following provides cost estimates for each individual project as well as for the overall category. The total cost of the improvements is estimated to be **\$906,070.00**. Professional services and administration fees are estimated to be **\$154,032.00**. These fees reflect typical grant funding allowable rates - actual fees may vary. The overall total cost of the projects in this category is estimated to be **\$1,060,102.00**.

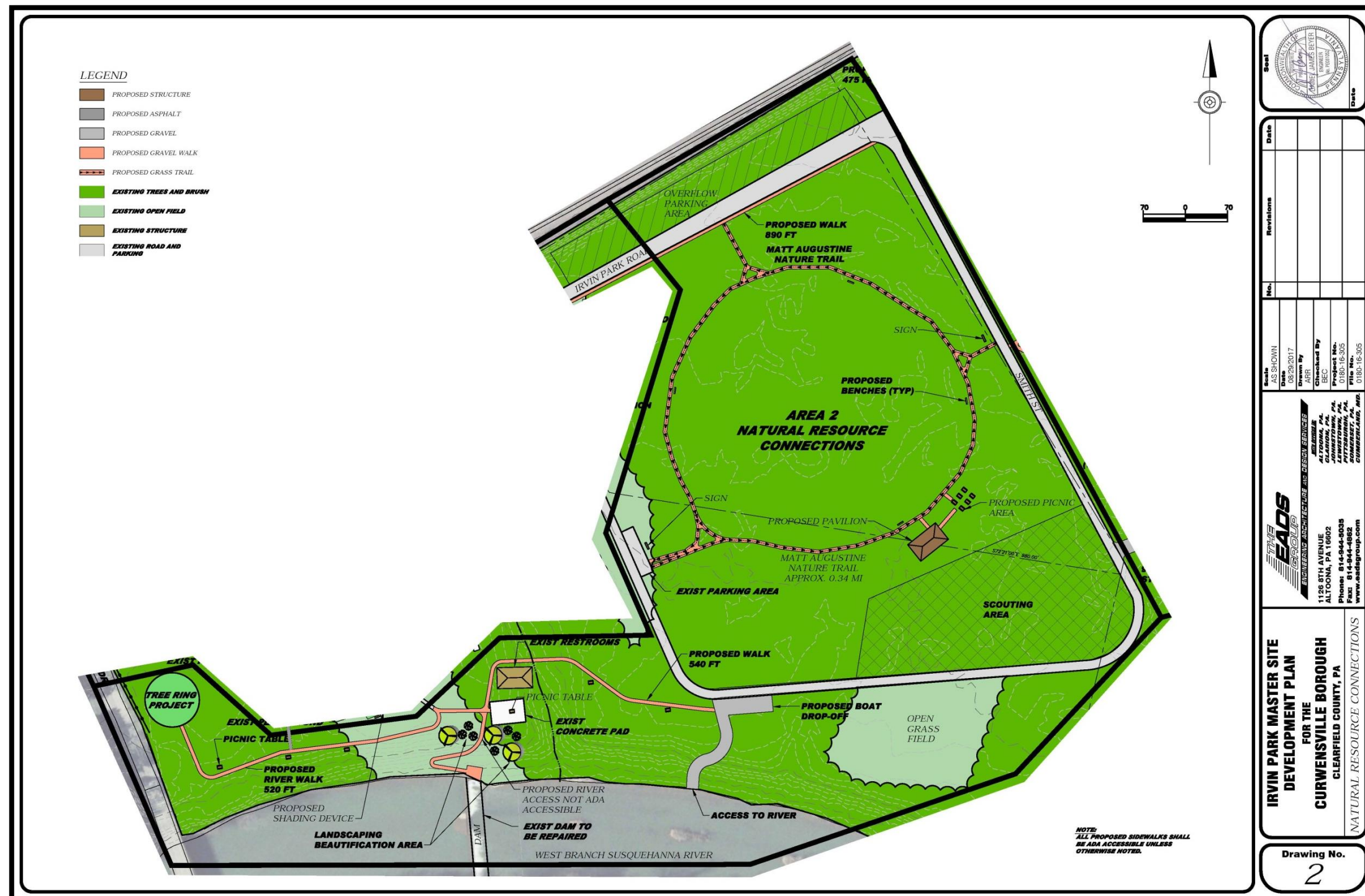
ITEM	ITEM DESCRIPTION	QNTY	UNIT	UNIT PRICE	TOTAL
1	NEW PARKING AREA and MAIN ENTRANCE				
	Asphalt Paving	5,550	SY	\$80.00	\$444,000.00
	6" Sub base	6,070	SY	\$25.00	\$151,750.00
	Excavation	2,000	CY	\$10.00	\$20,000.00
	Asphalt Sidewalks	309	SY	\$80.00	\$24,720.00
	Parking Lot Landscaping	1	LS	\$4,000.00	\$4,000.00
	subtotal	-	-	-	\$644,470.00
2	PAVILIONS:				
	Two (2) New Pavilions	2	EA	\$10,000.00	\$20,000.00
	Gravel Parking Lots/Walkways	710	SY	\$30.00	\$21,300.00
	subtotal	-	-	-	\$41,300.00
3	Stone and Lumber Fencing	830	LF	\$50.00	\$41,500.00
4	ADA Asphalt Sidewalks Connecting to Pavilions	211	SY	\$80.00	\$16,880.00
5	New Swing Set Apparatus and ASTM Safety Surface	1	EA	\$13,000.00	\$13,000.00
6	Playground Shade Screen	2	EA	\$2,500.00	\$5,000.00
7	Convert Basketball Court to Volleyball	1	LS	\$20,000.00	\$20,000.00
8	Convert Tennis Courts to Basketball	1	LS	\$30,000.00	\$30,000.00
9	Vegetated Screening at Little League Field	1	LS	\$5,000.00	\$5,000.00
10	Irvin Park Rd Walking Path	262	SY	\$25.00	\$6,550.00
SUBTOTAL					\$823,700.00
CONSTRUCTION CONTINGENCIES @ 10%					\$82,370.00
TOTAL CONSTRUCTION					\$906,070.00
PROFESSIONAL SERVICES FEES (DESIGN/ENGINEERING/INSPECTION) @ 15%					\$135,910.50
ADMINISTRATIVE @ 2%					\$18,121.50
GRAND TOTAL					\$1,060,102.00

The EADS Group, Inc. is not a construction contractor and therefore the above cost opinions are based solely upon our experience with construction. This requires The EADS Group to make a number of assumptions, including actual conditions to be encountered, specific decisions of other design/engineering professionals engaged, the means, methods and materials of construction, permitting and other factors not under the control of The EADS Group. Given these assumptions which must be made, The EADS Group states that the above is a fair and reasonable estimate of probable costs. The above costs do not include utility connection or service fees.

Irvin Park Master Site Development Plan

NATURAL RESOURCE CONNECTIONS

The recommendations in this category are designed to better connect Irvin Park users with natural resources that exist within and adjacent to the Park. The location of these Natural Resource Connection projects are generally located in the central portion and along the southern edge of the Park. The recommendations build upon opportunities provided by a previously constructed exercise fitness trail and the availability of the West Branch of the Susquehanna River. The intent is to develop facilities that will attract users wanting to better connect themselves to natural outdoor spaces and scenic overviews as well as boaters wanting to access the River. The following conceptual map highlights the recommended improvements. Descriptions of each recommendation and opinions of probable costs are provided on the following pages.



Irvin Park Master Site Development Plan

The recommended projects in this category are designed better connect the natural resources located in or adjacent to the Park and to better provide user access to those resources:

- **Matt Augustine Nature Trail** - In 1983, Matt Augustine, a Boy Scout from Curwensville, constructed a quarter mile, seven station, fitness trail within the center portion of Irvin Park. Matt was 15 at the time and completed the project as his Eagle Scout Project. The fitness trail followed a design originating in Switzerland and adapted for the United States by the US Forest Service. The fitness trail consisted of a compacted grass base with the fitness stations located adjacent to the trail. Most of the fitness stations have been removed or deteriorated away since the trail was first opened in 1983. Fortunately, the compacted grass base of the trail remains in good condition and is readily able to be repurposed as a natural trail. The Project Study Committee wishes to recognize Matt's contribution to the Park by formally naming the trail the Matt Augustine Nature Trail. The Matt Augustine Natural Trail will provide users an opportunity to observe towering hardwoods and evergreens along the route. A pavilion and picnic tables will be installed on the south side of the trail for public use. At least four (4) benches will be installed along the trail to provide users an opportunity to passively nature watch and otherwise enjoy the natural setting of the Park. Two (2) existing connections from the Natural Trail to Smith St will be formalized by signage that will designate the trail as the Matt Augustine Nature Trail. A third connection will be created to connect the trail directly to Irvin Park Rd. Information included on Curwensville Borough's website and other websites and publications describing Irvin Park will be updated to include reference to the Matt Augustine Nature Trail.
- **Irvin Park Rd Walking Path** - A new walking path will be constructed along the entire south side of Irvin Park Rd between Smith St and Sherman Fields. The portion of the Irvin Park Walking Path included in this category will extend for approximately 230-lf generally between the two (2) Smith St. access points onto Irvin Park Rd.
- **Boat Drop Off Area** - A formal boat drop off area will be established off of the southern edge of Smith St. The drop off area will have a crushed gravel base. The boat drop off area will be signed for Boat Drop Off only. It is the intent that boaters will pull into the area, unload their boats, and then park elsewhere in the Park.
- **Scouting Area** – A relatively large section of the Park located southeast of the Matt Augustine Nature Trail and adjacent to Smith St. will be designated for Scouting troop uses. The Scouting Area will be near but not connected to the Matt Augustine Trail or its associated amenities.
- **Access to River**- Extending from the Boat Drop Off Area will be a defined access path that will connect to the exposed rock bank along the West Branch Susquehanna River. Boaters will then be able to directly access the River from this point. The access path will be located in the 100-yr floodplain of the West Branch Susquehanna River.
- **Trailer Boat and Overflow Parking Area** – A linear grass strip adjacent to Irvin Park Rd. will be designated for parking for vehicles with boat trailers and/or for general overflow parking during Curwensville Days or at other times when parking is at a premium. No alternation to grass area is proposed. Signage designating this as a parking area for boat trailers and overflow parking will be installed.
- **River Walk** - An approximately 1,000-lf River Walk will be constructed generally along the top of the river bank between the Boat Drop Off Area and the Tree Ring Project. The River Walk will have a crushed gravel or similar base. The River Walk will serve three (3) purposes. First, it will provide an additional general pedestrian walking opportunity along the southern edge of the Park. Secondly, it will connect to the existing asphalt pedestrian walkway to provide a continuous off-road access way for boaters to walk to and from Boat Drop Off Area to parking areas. And finally, extending the River Walk to the west beyond the existing asphalt pedestrian walkway to the Tree Ring Project exposes users to scenic vistas overlooking the West Branch of the Susquehanna River. New picnic tables will be installed along the River Walk to provide additional opportunities for users to enjoy views of the River.
- **River Access Path** - A new River Access path will be constructed connecting the existing asphalt pedestrian walkway and the proposed River Walk described above down to the edge of the River near the Curwensville Dam. The existing dirt pathway will be eliminated and replaced by a more stabilized River Access path. The River Access path will have a stabilized surface and a subtle grade that will provide a useable access to the River for most potential users. The River Access path is not envisioned to be ADA compliant. The area surrounding the River Access path will be landscaped to create a beautification area that will improve the visual quality of the Park in that area. The River Access path will be located in the 100-yr floodplain of the West Branch Susquehanna River.
- **Curwensville Dam Repairs** - Repairs to the Curwensville Dam are recommended to help stabilize the structure from future deterioration and section failure. Further evaluation and coordination with the Pennsylvania Department of Environmental Protection and the Pennsylvania Fish and Boat Commission will need to be completed to prepare a repair and stabilization plan for the Dam.

Irvin Park Master Site Development Plan

Estimate of Probable Cost:

The following provides cost estimates for each individual project as well as for the overall category. The total cost of the improvements is estimated to be **\$424,132.00**. Professional services and administration fees are estimated to be **\$72,103.00**. These fees reflect typical grant funding allowable rates - actual fees may vary. The overall total cost of the projects in this category is estimated to be **\$496,235.00**.

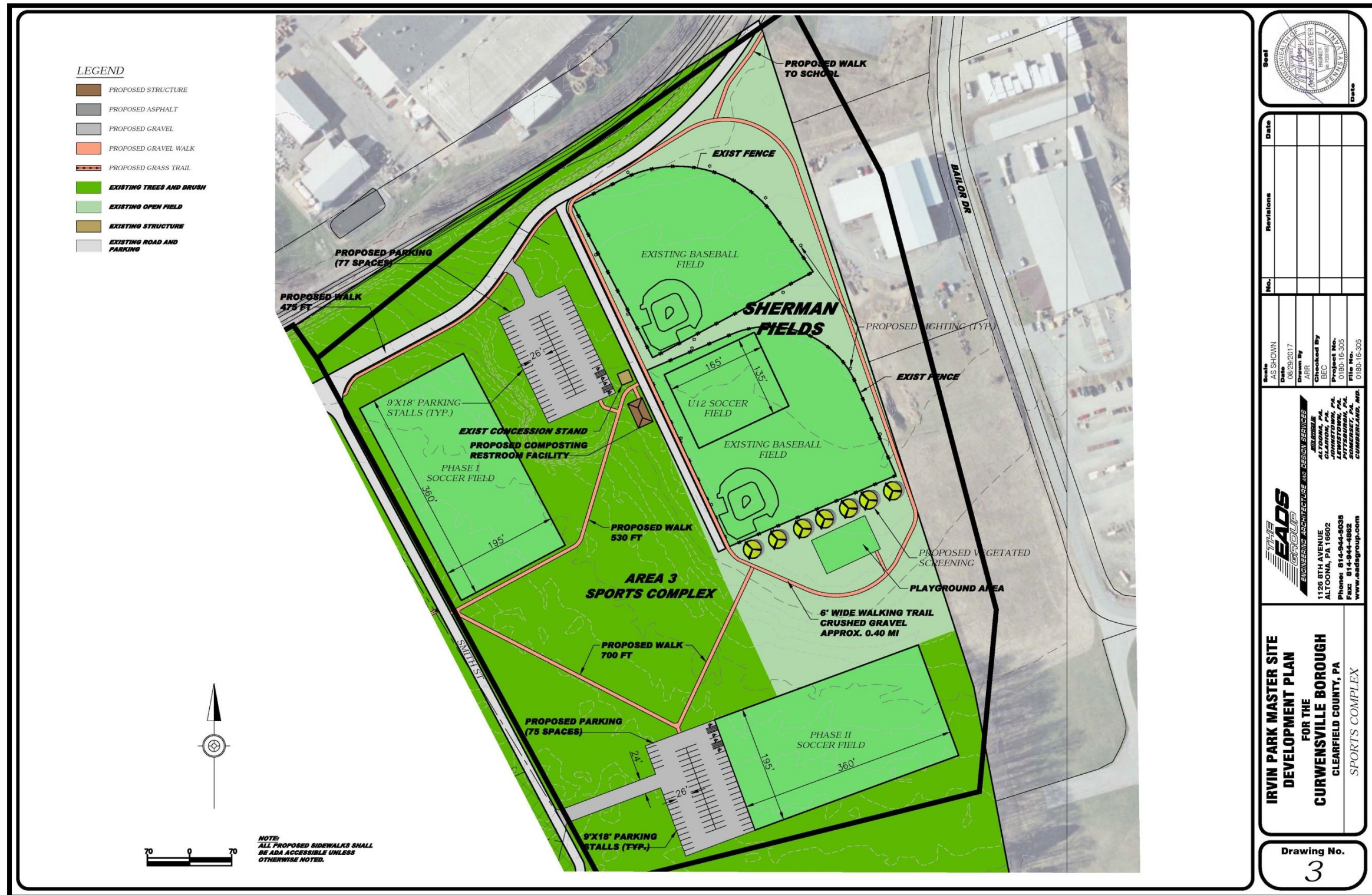
ITEM	ITEM DESCRIPTION	QNTY	UNIT	UNIT PRICE	TOTAL
1	MATT AUGUSTINE NATURE TRAIL				
	Signage (Trail)	2	EA	\$500.00	\$1,000.00
	Benches (around Trail)	4	EA	\$1,000.00	\$4,000.00
	Pavilion	1	EA	\$10,000.00	\$10,000.00
	Picnic Tables	6	EA	\$1,000.00	\$6,000.00
	Gravel Sidewalk from Trail to Pavilion/Picnic Tables	220	SY	\$25.00	\$5,500.00
	<i>subtotal</i>	-	-	-	\$26,500.00
2	BOAT DROP OFF AREA				
	Gravel Boat Drop-Off	302	SY	\$25.00	\$7,550.00
	Signage (Drop Off Only)	1	EA	\$500.00	\$500.00
	Signage (Boat Trailer Parking/Overflow Parking)	1	EA	\$500.00	\$500.00
	River Access	331	SY	\$25.00	\$8,275.00
	<i>subtotal</i>	-	-	-	\$16,825.00
3	RIVER WALK				
	Gravel Sidewalk	910	SY	\$25.00	\$22,750.00
	Picnic Tables	6	EA	\$1,000.00	\$6,000.00
	<i>subtotal</i>	-	-	-	\$28,750.00
4	RIVER ACCESS PATH				
	Gravel Sidewalk	150	SY	\$25.00	\$3,750.00
	Landscaping/Beautification Improvements	1	LS	\$4,000.00	\$4,000.00
	<i>subtotal</i>	-	-	-	\$7,750.00
5	Repair Curwensville Dam (Final design required to determine actual construction costs)	1	LS	\$300,000.00	\$300,000.00
6	Irvin Park Rd Walking Path	230	SY	\$25.00	\$5,750.00
SUBTOTAL					\$385,575.00
CONSTRUCTION CONTINGENCIES @ 10%					\$38,557.00
TOTAL CONSTRUCTION					\$424,132.00
PROFESSIONAL SERVICES FEES (DESIGN/ENGINEERING/INSPECTION) @ 15%					\$63,621.00
ADMINISTRATIVE @ 2%					\$8,482.00
GRAND TOTAL					\$496,235.03

The EADS Group, Inc. is not a construction contractor and therefore the above cost opinions are based solely upon our experience with construction. This requires The EADS Group to make a number of assumptions, including actual conditions to be encountered, specific decisions of other design/engineering professionals engaged, the means, methods and materials of construction, permitting and other factors not under the control of The EADS Group. Given these assumptions which must be made, The EADS Group states that the above is a fair and reasonable estimate of probable costs. The above costs do not include utility connection or service fees.

Irvin Park Master Site Development Plan

SPORTS COMPLEX

The following recommendations are designed to create a Sports Complex at the eastern side of Irvin Park. The recommendations build upon opportunities provided by the existing Sherman Fields and the availability of developable land surrounding the Fields. The intent is to provide facilities that will bolster use of the Park for baseball, soccer and other related sporting uses and to provide amenities that will improve the spectator experience.



Irvin Park Master Site Development Plan

The recommended projects in this category are designed to better enhance ‘sport’ facilities in the Park and to improve user and spectator experiences.

- **Soccer Fields** - Three (3) new soccer fields are intended to be installed in this area. This initial effort will focus on establishing a U12 size field by stripping off an area in the outfield of the existing lower ball field. Adjustments to the outfield fencing may be necessary to accommodate the soccer field alignment. An approximately 360-ft x 195-ft area adjacent to Smith St. and Irvin Park Rd. is available to construct a Soccer Field (shown as Phase I). A second approximately 360-ft x 195-ft area located below the Sherman Fields is available to construct another Soccer Field (shown as Phase II). The exact size of the new soccer fields will be determined during the construction process by the Curwensville Recreation Soccer Association.
- **Parking Lots** - Two (2) new parking lots will be constructed to accommodate the parking demand generated from the new soccer fields and overflow parking from Sherman Fields. One parking area will be constructed adjacent to Irvin Park Road and the access road into Sherman Fields. This lot is intended to accommodate up to 77 spaces. The second lot will be located adjacent to the Phase II Soccer Field and will accommodate up to 75 spaces. Both lots will have a gravel base. Both lots will also provide additional parking areas for Curwensville Days attendees. It is the intent to incorporate green and sustainable features with the stormwater management elements associated with the new parking area.
- **Sherman Field Playground** - A new playground facility will be installed below the lower ball field. Families and siblings are often required to spend extended time at the fields and are in need of additional activities to occupy their time. The playground area will consist of swings and other age appropriate apparatus. Vegetated screening will be installed between the baseball field and the playground area to provide protection against errant balls leaving the playing field.
- **Sherman Field Lighting** - A longer term goal is to provide field lighting around each of the existing baseball fields. Field lighting will extend the number of hours the fields could be used and will elevate the playing experience at Sherman Fields.
- **Sherman Fields Loop Trail** - A public use loop walking trail will be installed around Sherman Fields to improve the spectator experience and to add to the active recreation opportunities in the Park. The loop trail facility will be 6-ft wide with a crushed gravel base suitable for walking. The loop trail will be approximately 0.40 miles in length. A spur will be installed off of the loop trail to provide pedestrian access to and from the northeast corner of the Park. This spur is relevant to future efforts aimed at connecting Irvin Park to the Curwensville School complex and to the Ammerman Trail. Additional information on these connections are provided in the following Park Connections section.
- **Connecting Walkways** - An approximately 530-ft of gravel walkway aligned to connect Smith St. with the Phase I Soccer Field, the upper parking lot and Sherman Fields will be constructed. A second approximately 700-ft gravel walkway aligned to connect Smith St. with the Phase II Soccer Field and Sherman Field will be constructed. The walkways will accommodate pedestrian movement between the fields and parking areas and will provide an alternate walking route for Park users wanting to access the Sherman Fields area from inside the Park.
- **Composting Restroom** - A composting restroom facility will be installed to improve the amenities offered in this part of the Park. A composting facility is recommended to better maintain the natural setting of the Park.
- **Irvin Park Rd Walking Path** - A new walking path will be constructed along the south side of Irvin Park Rd between Smith St. and Sherman Fields. The portion of the Irvin Park Walking Path included in this category will extend for approximately 375-ft generally between Sherman Fields and the northeastern corner of the Park.

Irvin Park Master Site Development Plan

Estimate of Probable Cost:

The following provides cost estimates for each individual project as well as for the overall category. The total cost of the improvements is estimated to be **\$1,021,570.00**. Professional services and administration fees are estimated to be **\$173,667.00**. These fees reflect typical grant funding allowable rates - actual fees may vary. The overall total cost of the projects in this category is estimated to be **\$1,195,237.00**.

ITEM	ITEM DESCRIPTION	QNTY	UNIT	UNIT PRICE	TOTAL
1	SOCCKER FIELDS (see note below)				
	Soccer Field	2	EA	\$100,000.00	\$200,000.00
	Gravel Parking Lot (Phase 1)	2,816	SY	\$25.00	\$70,400.00
	Gravel Parking Lot (Phase 2)	3,112	SY	\$25.00	\$77,800.00
	Gravel Sidewalks (Connecting Smith St, Soccer Fields and Sherman Fields)	860	SY	\$25.00	\$21,500.00
	subtotal	-	-	-	\$369,700.00
2	SHERMAN FIELD ENHANCEMENTS				
	Loop Trail	1,385	SY	\$25.00	\$34,625.00
	Playground and ASTM safety surface	1	EA	\$20,000.00	\$20,000.00
	Vegetated Screening	1	LS	\$5,000.00	\$5,000.00
	Baseball Field Lighting	2	EA	\$200,000.00	\$400,000.00
	subtotal	-	-	-	\$449,625.00
3	Composting Restroom	1	LS	\$90,000.00	\$90,000.00
4	Irvin Park Rd Walking Path	375	SY	\$25.00	\$9,375.00
SUBTOTAL					\$928,700.00
CONSTRUCTION CONTINGENCIES @ 10%					\$92,870.00
TOTAL CONSTRUCTION					\$1,021,570.00
PROFESSIONAL SERVICES FEES (DESIGN/ENGINEERING/INSPECTION) @ 15%					\$153,235.50
ADMINISTRATIVE @ 2%					\$20,431.50
GRAND TOTAL					\$1,195,237

Note: Coordination with the Curwensville Recreation Soccer Association during this planning process indicates a likelihood that the Association will construct the Soccer Fields and associated Parking Lots on an in-kind basis. Completing these elements under an in-kind scenario is acceptable to Curwensville Borough and the Project Study Committee. This would obviously reduce the overall costs provided above. Curwensville Borough and the Project Study Committee should consider incorporating the level of in-kind match provided by the Association when preparing grant applications or other funding request packages to complete the remaining projects in this category.

The EADS Group, Inc. is not a construction contractor and therefore the above cost opinions are based solely upon our experience with construction. This requires The EADS Group to make a number of assumptions, including actual conditions to be encountered, specific decisions of other design/engineering professionals engaged, the means, methods and materials of construction, permitting and other factors not under the control of The EADS Group. Given these assumptions which must be made, The EADS Group states that the above is a fair and reasonable estimate of probable costs. The above costs do not include utility connection or service fees.

Irvin Park Master Site Development Plan

Early Action Items

Curwensville Borough and the Project Study Committee requested that the Master Plan identify early action items that can be completed at little to no cost. The following Matrix lists those projects that will require minimal funding to construct or install in the Park. As shown, construction of the soccer fields and associated parking lots and connecting pedestrian walkways are included with the anticipation that they will be constructed by the Curwensville Recreation Soccer Association at no cost to the Borough.

Project	Category	Cost
Playground Shade Screens (2)	Facility Improvements	\$5,000.00
Vegetated Screening at Little League Field	Facility Improvements	\$5,000.00
Matt Augustine Nature Trail Signage (2)	Natural Resources Connections	\$1,000.00
River Access Path – Landscaping/Beautification	Natural Resources Connections	\$2,000.00
Matt Augustine Nature Trail Picnic Tables (6)	Natural Resources Connections	\$3,000.00
River Access Path – Gravel sidewalk	Natural Resources Connections	\$3,750.00
Matt Augustine Nature Trail Benches (4)	Natural Resources Connections	\$4,000.00
Soccer Fields (2)	Sports Complex	*
Parking Lots (2)	Sports Complex	*
Connecting Pedestrian Walkways	Sports Complex	*

* Anticipates in-kind construction by the Curwensville Recreation Soccer Association

Irvin Park Master Site Development Plan

RECREATION PROGRAMMING

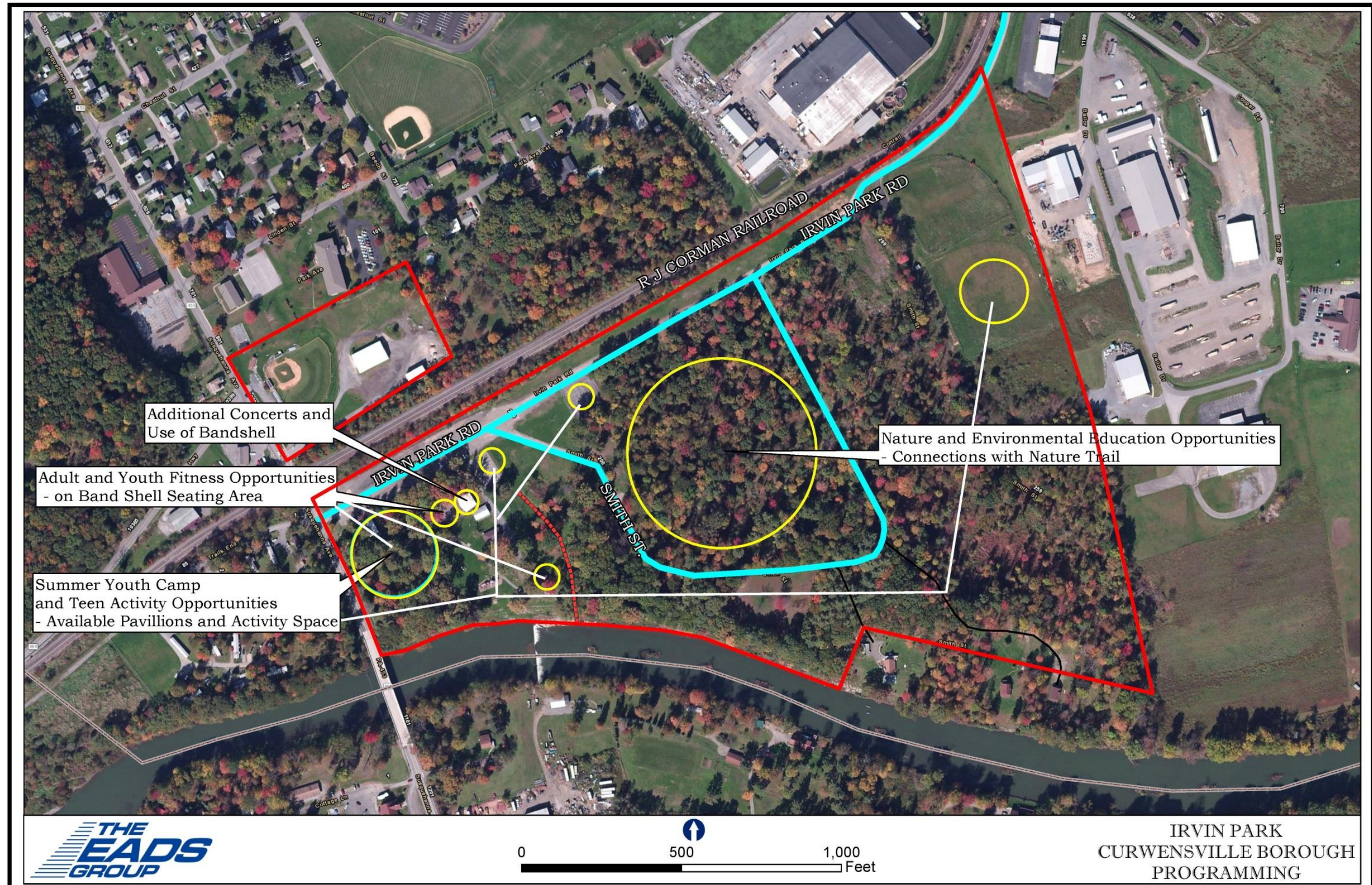
Results from the Community Survey highlighted the need to increase recreation programming at Irvin Park. The Survey also provided guidance on the types of programming wanted at the Park and the age groups that the programming should serve. The Project Study Committee has developed the following Recreation Programming Approach to match the public's need for additional programming with the Borough's capacity to expand recreation programming at the Park.

Recreation Programming Approach

The Recreation Programming Approach focuses on increasing six (6) types of recreation related programs at the Park. The matrix below and the map of the following page summarize the Recreation Programming Approach. The Approach provides examples of activities within each program type and identifies which facilities/areas in the Park are best suited to hold those types of activities. Curwensville Borough does not have a Recreation Programming Department or staff person responsible for developing programming at the Park. Curwensville Borough has indicated that they are unable to directly develop and sponsor recreation programming in the Park. Therefore, guidance is provided on activity/event schedules and the types of service providers that may be able to develop a program at the Park on behalf of the Borough. The Approach will be implemented by directly engaging potential service providers to explore their willingness and capacity to develop a class, activity or event in the Park. The Steering Committee and Curwensville Borough will actively promote the availability of the Park for programs, activities and events to local groups and organizations through word of mouth promotion and at annual events and dinners. Curwensville Borough will revise their web-site to more clearly identify persons to contact for use of the Park and information regarding reserving the Band Shell for use. Particulars regarding a new program, event or activity at the Park will be documented by the Study Committee and presented to Curwensville Borough for comment and input. Approval for a new program, event or activity at the Park will ultimately be the responsibility of Curwensville Borough.

Program Type	Examples	Location	Schedule	Service Provider
Adult and Youth Fitness	<ul style="list-style-type: none"> Yoga Classes Zumba in the Park Event Other group outdoor fitness classes 	<ul style="list-style-type: none"> Asphalt pad located in front of the Band Shell Concrete pad behind the restrooms The wooded/grass area near the Tree Ring Project 	<ul style="list-style-type: none"> Regular schedule of classes A onetime event As a series of signature events 	<ul style="list-style-type: none"> Existing Fitness Instructors, Personal Trainers and related Service Providers in Curwensville and surrounding area
Activities for Teens	<ul style="list-style-type: none"> Kick Ball League Art Activities – <i>Art in the Park</i> Performance Art – Theatre Troup 	<ul style="list-style-type: none"> Existing Pavilions Basketball/Tennis Court Areas Band Shell Sherman Fields 	<ul style="list-style-type: none"> Maintain a league schedule or as a onetime event Regular schedule of classes Varying performance dates 	<ul style="list-style-type: none"> Local Special Interest Clubs Church Groups Service Clubs
Summer Youth Camps	<ul style="list-style-type: none"> Educational and Arts Based 	<ul style="list-style-type: none"> Existing Pavilions Basketball/Tennis Court Areas Open Grass area 	<ul style="list-style-type: none"> On weekly schedule on a once a week/month basis 	<ul style="list-style-type: none"> Church Groups Boy Scout Troops Service Clubs
Nature and Environmental Education	<ul style="list-style-type: none"> Organized Group Walks Tree, Plant and Wildlife Identification Clean Water Programs 	<ul style="list-style-type: none"> On or are surrounding the Matt Augustine Nature Trail 	<ul style="list-style-type: none"> Promote as an event on a monthly basis 	<ul style="list-style-type: none"> Local Experts Conservation District Watershed Groups Susquehanna Greenway Reps.
Concerts at the Band Shell	<ul style="list-style-type: none"> Themed Music concerts – a 60s night - using a Disc Jockey Seasonal Music Concerts – Summer Concert Series, Memorial Day/Veterans' Day Artistic Performances 	<ul style="list-style-type: none"> Band Shell 	<ul style="list-style-type: none"> Individual event promotion 	<ul style="list-style-type: none"> Bands and Music Groups Disc Jockeys School Theatre Groups Dance Schools
Use of the Park for Existing Events	Focus on Halloween and Christmas: <ul style="list-style-type: none"> Expansion of the Halloween Parade into the Park Have a Trunk-or-Treat event Expand Home for the Holidays into the Park 	<ul style="list-style-type: none"> Parking Lot Asphalt pad located in front of the Band Shell 	<ul style="list-style-type: none"> Individual event promotion with larger event promotion 	<ul style="list-style-type: none"> Curwensville Merchants Association Clearfield Kiwanis

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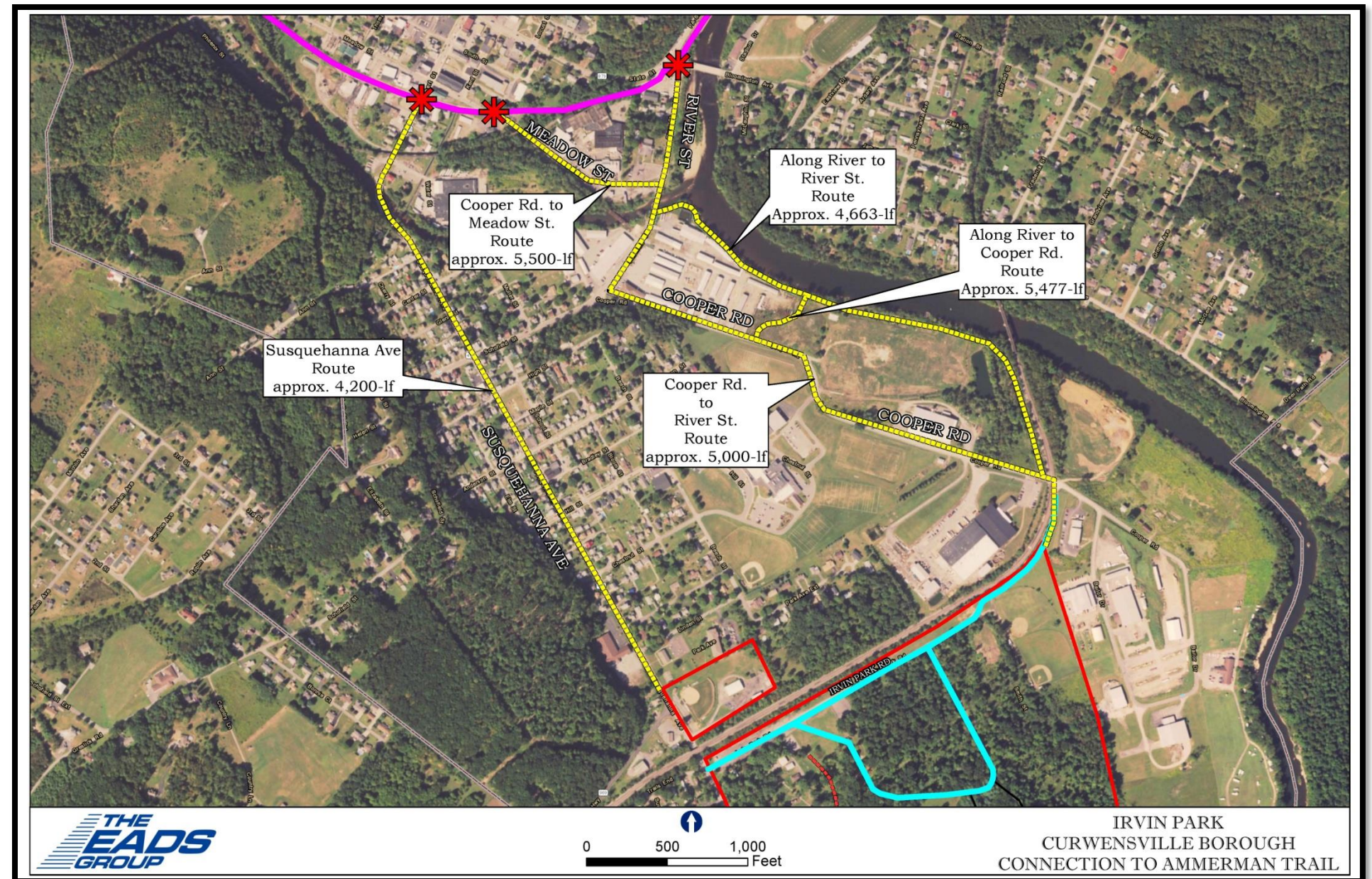


PARK CONNECTIONS

Connection to Ammerman Trail

Results of the Community Survey show that users of the Park would like to have a connection between Irvin Park and the Ammerman Trail established. An evaluation was conducted as part of this Master Site Plan to identify potential routing for this connection. It is the intent to provide conceptual level options only in this Master Site Plan and to allow future efforts to develop and establish the actual connecting route including installing any on-road improvements necessary to accommodate pedestrian access. The map to the right highlights five (5) potential routes while the following provides a description.

- **Susquehanna Ave. Route** – The Susquehanna Route begins at the western edge of the Park and extends for approximately 4,200-ft to an existing Ammerman Trail access point on Meadow St. in downtown Curwensville. The Route would use the sidewalk system in place along Susquehanna Ave. This is the only route that would connect to the western edge of the Park.
- **Cooper Rd. to River St. Route** – This Route extends from the eastern edge of the Park and follows Cooper Ave. and then River St. for approximately 5,000-ft to an existing Ammerman Trail access point on River St. near its intersection with Stadium Dr. and PA 879. Improvements along Cooper Rd. and River St. would be needed to accommodate pedestrians and other users.
- **Cooper Rd. to Meadow St. Route** – The Route follows the same alignment as the Cooper Rd. to River St. Route except that users would take Meadow St. to access the Trail prior to the River St. intersection with Stadium Dr. and PA 879. This route would extend for approximately 5,500-ft. Although longer in length, Meadow Ave. does provide for a calmer connection point with the Trail in comparison to the River St. intersection area. Improvements along Cooper Rd., River St. and Meadow St. would be needed to accommodate pedestrians and other users. This Route extends from the eastern edge of the Park.



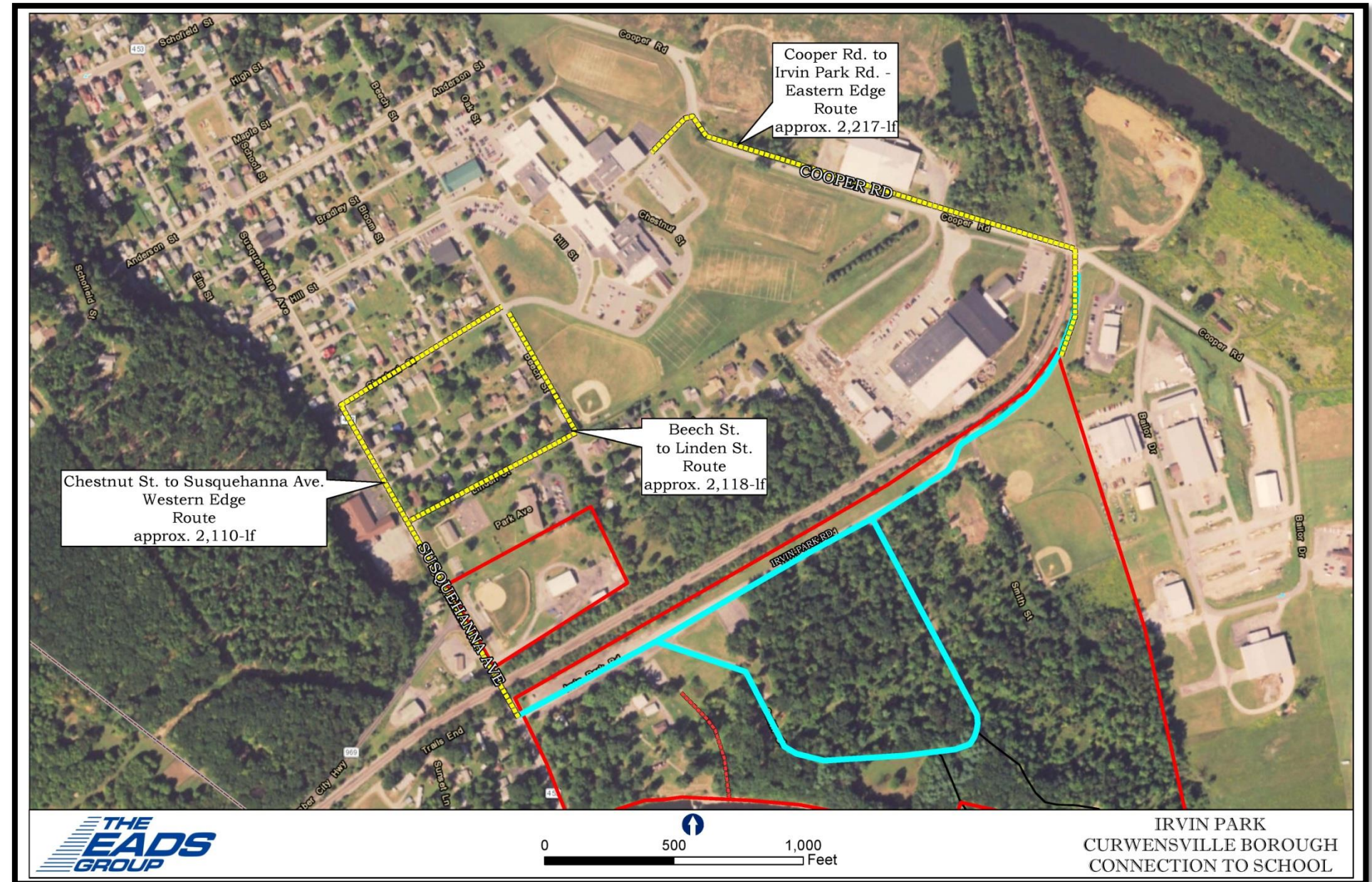
- **Along River to Cooper Rd. Route** – The intent of this Route is to take users off of a portion of Cooper Rd. and along the West Branch Susquehanna River prior to accessing the Ammerman Trail. Users would still need to use portions of Cooper Rd. and River St. (or Meadow St.) to access the Trail. The total length of this Route is approximately 5,477-ft. A new trail system would need to be constructed along the River to accommodate users. This Route extends from the eastern edge of the Park.
- **Along River to River St. Route** – This Route extends an off-road portion along the West Branch Susquehanna River all the way to River St. The total length of this Route is approximately 4,663-ft. A new trail system would need to be constructed along the River to accommodate users. This Route extends from the eastern edge of the Park.

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Connection to Curwensville Area Elementary/Jr. Sr. High School Campus

Input from the Study Committee indicates they would like to have a walking route established between Irvin Park and the Curwensville Area Elementary/Jr. Sr. High School campus located near the eastern edge of the Park. An evaluation was conducted as part of this Master Site Plan to identify potential routing for this connection. As shown on the image to the right, three (3) potential routes were identified. It is the intent to provide conceptual level options only in this Master Site Plan and to allow future efforts to further develop and establish the actual walking route including designing any on-road improvements necessary to accommodate pedestrian access.

- **Chestnut to Susquehanna Ave. Route** – The Chestnut to Susquehanna Ave. Route connects the School campus to the western edge of the Park. It extends from the School campus down Chestnut St. and then southward along Susquehanna Ave. until it reaches Irvin Park. The total length of this Route is approximately 2,110-ft. Sidewalks would need to be added to Chestnut St. to create a safer route from the School campus to Susquehanna Ave. Sidewalks are located along Susquehanna Ave to the Park.
- **Beech St. to Linden St. Route** – This Route also connects the School campus to the western edge of the Park. It extends from the School campus southward along Beech St and then westward along Linden St. to Susquehanna Ave. Users would then travel southward along Susquehanna Ave. until it reaches Irvin Park. The total length of this Route is approximately 2,118-ft. Sidewalks would need to be added to Beech St. and Linden St. to create a safer route from the School campus to Susquehanna Ave. Sidewalks are located along Susquehanna Ave to the Park.
- **Cooper Rd. to Irvin Park Rd. Route** – This Route connects the School campus to the eastern edge of the Park. It extends from the back side of the campus eastward along Cooper Rd. until it connects with Irvin Park Rd. Users would then travel along Irvin Park Rd. until they could access Irvin Park property. The total length of this Route is approximately 2,217-ft. Sidewalks or other improvements would need to be added to Cooper Rd. and Irvin Park Rd. to create a safer route from the School campus to the Park.



Irvin Park Master Site Development Plan

Implementation Partners

Curwensville Borough, as the owner and operator of Irvin Park, will be a central focal point involved with facilitating and coordinating project implementation efforts. Curwensville Borough will rely on the expertise and capacity of the Project Study Committee members along with Curwensville Area Revitalization Entities (CARE) and Curwensville Regional Development Corporation (CRDC) organizations to essentially need to “keep things moving” by carrying out activities and encouraging actions. CARE and CRDC will take the lead on identify appropriate grant funding opportunities, managing the grant preparation and submission process and to administer funds as they are awarded. CARE and CRDC will also take the lead on pursuing community donation based types of funding.

State Funding

The following section identifies potential funding options for the Park Improvement Projects. Specific consideration should be given to the maximum level of funding available from each source. Some are best considered as supplemental funding options while others can be the single source of funding. Due to ever changing grant funding requirements, availability and funding levels, it is difficult to predict with certainty or to describe an exact funding path for each project. The following provides guidance on the most applicable sources of State level grant funding for parks and recreation type projects.

- Pennsylvania Department of Conservation and Natural Resources (PA DCNR) - Community Conservation Partnership Program (DCNR - C2P2)
<http://www.dcnr.state.pa.us/brc/grants/c2p2programguidance/index.htm>

The C2P2 provides funding to municipalities and authorized nonprofit organizations for recreation, park, trail and conservation projects. Examples of projects include: planning, land acquisition and construction for trails, recreation facilities, conservation projects, parks and open spaces/greenways. Priority trail projects include projects that close trail gaps as well as projects that rehabilitate or upgrade existing trails.

Local Match Requirement: Projects require a 50% match which can include a combination of cash and/or non-cash values.

- Pennsylvania Department of Conservation and Natural Resources (PA DCNR) – Pennsylvania Recreational Trails Program (DCNR - PRT)
<http://www.dcnr.state.pa.us/brc/grants/c2p2programguidance/index.htm>

The Pennsylvania Recreational Trails Program is an assistance program of the U.S. Department of Transportation's Federal Highway Administration (FHWA). The FHWA provides funds to state agencies, local governments, non-profit and for-profit organizations to assist with the construction, renovation and maintenance of trails and related facilities for both motorized and non-motorized recreational trail use, the purchase and lease of equipment for trail maintenance and construction and the development of educational materials and programs.

Local Match Requirement: Projects require a 20% match, which can include a combination of cash and/or non-cash values.

- Commonwealth Financing Agency (CFA) - Greenways, Trails and Recreation Program (CFA - GTRP)
<http://dced.pa.gov/programs/greenways-trails-and-recreation-program-gtrp>

Administered through the PA Department of Community and Economic Development (DCED), the Greenways, Trails and Recreation Program (GTRP) provides funding for planning, acquisition, development, rehabilitation and repair of recreational trails, greenways, open space, parks and beautification projects. The program awards up to \$250,000 per project to eligible applicants.

Local Match Requirement: Projects require 15% cash match.

- Commonwealth Financing Authority (CFA) – Multimodal Transportation Fund (CFA - MTF)
<http://dced.pa.gov/programs/multimodal-transportation-fund/>

Administered through the PA Department of Community and Economic Development (DCED), the Multimodal Fund provides funding for the development, rehabilitation and enhancement of transportation assets to existing communities, streetscape, lighting, sidewalk enhancement, pedestrian safety, connectivity of transportation assets and transit-oriented development. Grants are available for projects with a total cost of \$100,000 or more. Grants shall not exceed \$3,000,000 for any project.

Local Match Requirement: Projects require 30% cash match

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- ❑ **Pennsylvania Department of Transportation (PennDOT) - Transportation Alternatives Program (PennDOT - TAP)**
<http://www.penndot.gov/ProjectAndPrograms/Planning/Pages/Transportation-Alternatives-Program.aspx>

The Transportation Alternatives Program (TAP) was authorized under Section 1122 of Moving Ahead for Progress in the 21st Century Act (MAP-21) for community-based projects including the construction of on-road and off-road trail facilities for pedestrians, bicyclists, and other non-motorized forms of transportation including sidewalks, bicycle infrastructure, pedestrian and bicycle signals, traffic calming techniques, lighting and other safety-related infrastructure, and transportation projects to achieve compliance with the Americans with Disabilities Act of 1990. As administered by PennDOT, TAP funds can only be used for construction.

Local Match Requirement: The local applicant is responsible for all Pre-Construction activities including engineering/design and permitting

- ❑ **Pennsylvania Department of Transportation (PennDOT) – Multimodal Transportation Fund (PennDOT - MTF)**
<http://www.penndot.gov/ProjectAndPrograms/MultimodalProgram/Pages/default.aspx#.Vfwm17HD-Uk>

The Multimodal Transportation Fund (MTF) was created under Act 89 of 2013 which provides funding for the development, rehabilitation, and enhancement of transportation assets to existing communities, streetscape, lighting, sidewalk enhancement, pedestrian safety, connectivity of transportation assets and transit-oriented development.

Local Match Requirement: Projects require 30% cash

- ❑ **Pennsylvania Department of Community and Economic Development (DCED) – Community Development Block Grant (CDBG)**
<http://dc.ed.pa.gov/programs/community-development-block-grant-cdbg/>

CDBG funding provides grants and technical assistance for federal designated municipalities for any type of community development and can be used for housing rehabilitation, public services, community facilities, infrastructure improvement, development and planning.

It will take the creativity of the Project Study Committee, CARE and CRDC to identify and secure grant funding. Curwensville Borough will need to rely on the expertise of CARE and CRDC to interpret grant source requirements and, when appropriate, coordinate multiple grant applications and local funding sources to take advantage of opportunities.

DCNR, CFA, and PennDOT and GRANT SUMMARY

Criteria	DCNR – C2P2	DCNR - PRT	CFA - GTRP	CFA - MTF	PennDOT - TAP	PennDOT - MTF
Grant Award Amounts	Over \$100,000	Up to \$100,000	Up to \$250,000	\$100,000 - \$3,000,000	\$50,000 – \$1,000,000	\$100,000 - \$3,000,000
Local Match Requirement	50%	20%	15%	30%	All Pre-Construction Activities	30%
Submission Deadline	Annually - Spring	Annually - Spring	Annually - between February 1st and May 31st	Annually - Summer	Bi-Annual September 2017	Annually – Spring

The following link is to the “Finding the Green Guide” to state funding opportunities for conservation, recreation and preservation projects that was compiled by the Pennsylvania Growing Greener Council:
http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_20028890.pdf

The following link is to the “2017 Pennsylvania Grant & Resource Directory” of helpful information for individuals and groups seeking financial support their work, operations, and ideas.
http://www.senatordinniman.com/wp-content/uploads/2017/02/Dinniman_PA_GrantDirectory_bklt_2017.pdf

The following link is to PennVESTs “Green Initiatives” program that promotes and encourages environmental responsibility in communities that are creative and innovative with green solutions for water quality management
<http://www.pennvest.pa.gov/Information/Funding-Programs/Pages/Green-Initiatives.aspx>

Irvin Park Master Site Development Plan

Local Funding

Implementing the projects recommended in this Master Plan cannot all be accomplished through State level grant sources. Local organizations and groups must be prepared to contribute financially to the future of the Park. Local cash contributions and/or in-kind service matches will be needed to complete projects independently or as a match contribution to grant awards. Local funding can also be used to continue to installing elements of a larger project. Examples may be to add additional plantings to a landscaped area or to add additional signage and benches to the Matt Augustine Nature Trail or to add picnic tables along the River Walk. As noted previously, as a result of this Master Planning effort, representatives of the Curwensville Recreation Soccer Association were able to meet with Curwensville Borough to propose efforts to construct soccer fields and associated parking lots near Sherman Field on an in-kind basis. The following are creative ways for attracting local donations and funding.

- ❑ Adopt-a-Project – Similar to PennDot’s Adopt-a-Highway Program, Curwensville Area businesses, civic organizations, families and groups/clubs can formally adopt a Project to provide funding or volunteer efforts for maintaining that specific Project. This type of program will be focused on building community pride for the Park by connecting residents and organizations to the long term sustainability of the Park. Recognition of the adopter can be through the placement of a plaque or placing the adopters name on a sign.
- ❑ Sponsorship Program – A Sponsorship Program allows annual donations to be received from individuals, organizations and businesses and provides a sense of ownership to the sponsor. Sponsorships for a portion of a Project including signage, benches, picnic tables and trail section development can be obtained. As an example, selling of ‘in-memory’ benches along the Nature Trail and/or picnic tables along the River Walk can be used as fund raiser and, again, as a way to connect residents to the Park. Recognition of the sponsor would be required and can be accomplished through the placement of a plaque, placing the sponsor’s name(s) on the sign or panel, and/or special recognition at an opening ceremony. Sponsorships other than cash including donations of services, equipment, labor, or reduced costs for supplies can also be considered.
- ❑ Walking Trail Development Fund – Establishing a Walking Trail Development Fund allows smaller donations to be accepted and pooled together to be used in developing or maintaining the River Walk, Walking Path along Irvin Rd. or the Loop Trail around Sherman Field. The Borough, CARE or CRDC could maintain and administer the Trail Fund. Various funding levels could range from \$25 to \$500 but would allow donors to contribute any amount.
- ❑ Membership Campaign – Curwensville area residents, students, organizations and businesses could also individually contribute to the development of the Park by purchasing an annual ‘Irvin Park’ membership. No specific incentive or advantage would be offered to an ‘Irvin Park’ member other than some form of special recognition which could be in the form of a unique decal sticker than can be placed on a member’s car or business window. Different membership levels could be established for students, Individuals, Businesses and other Organizations.
- ❑ Crowdfunding - This is a grass roots fundraising approach that creatively raises community support and funds. Crowdfunding is the practice of funding a project or initiative by raising many small amounts of money from a large number of people usually through the internet. The key to this type of approach is to identify an outcome and funding goal that are realistic and achievable. Projects under \$10,000 are good candidates from this type of funding approach. Projects should be specific and something the community will be able to get behind. The value of this type of approach is that it goes beyond simply asking individuals/groups for money by including them in achieving an outcome. It is suggested that projects be started within six months of the close of the crowdfunding campaign so that timely results can be seen by contributors. Any necessary project expenses beyond those raised through this type of fundraising should be available to ensure the project gets completed. In other words, a reliable secondary source of funding should be identified prior to starting a campaign. It will be necessary to have a social media competent person(s) involved to set up the crowdfunding page and to create information for the crowdfunding project (storyline and video/photo) and collecting and organizing contacts for a community outreach (social media, emails, traditional media, etc.) campaign launch. Someone(s) will also need to responsible to correspond directly with donors and to field questions asked by potential donors.

Municipal Funding

Input received during the planning process indicates that direct funding from Curwensville Borough for completing the Improvement Projects is not likely. However, it is important to still note that Curwensville Borough could elect to directly fund these improvements. The Borough could redirect a portion of their available funds towards project construction and/or could set aside funds to be used as a match for grant funding. Curwensville Borough could also consider issuing General Obligation Bonds to raise funds to pay for the construction. In lieu of direct funding, it is likely that Curwensville Borough can provide in-kind services for project construction.

Irvin Park Master Site Development Plan

Phased Capital Development Program

Given the extent and number of projects recommended in this Master Plan, it is necessary to look at implementation as occurring on multi-year basis over an extended period of time. Thus, an important component of this Master Plan is the development of a Phased Implementation Plan. This phased approach was developed with the assistance of Curwensville Borough and the Project Study Committee to ensure that the most desired projects are completed in the earliest phases of Park development. Curwensville Borough and the Project Study Committee assisted by identifying a number of overall priorities for Irvin Park. These priorities include:

- Improving River Access - for boating and fishing, walking down to the rocks along the River and creating better opportunities to view the River from the bank.
- Adding Walking Trails/Walking Opportunities throughout the Park
- Visual Improvements in the Park
- Enhancing the Main Entrance Area and Parking Lot
- Playground Equipment – replacing old and adding new

The following Matrix lists the overall priorities and highlights the Projects and their Park Improvement Categories recommended in this Master Plan that specifically address those priorities:

Priority	Project	Category
River Access – for boating, fishing and walking to the rocks along the River	Boat Drop Off Area	Natural Resource Connections
	Boat Drop Off Area Access to River	Natural Resource Connections
	Access Path to the River	Natural Resource Connections
	River Walk	Natural Resource Connections
Adding Walking Trails and Opportunities throughout the Park	New ADA Sidewalks to Pavilions	Facility Improvements
	Irvin Park Rd Walking Path	Multiple
	Matt Augustine Natural Trail	Natural Resource Connections
	River Walk	Natural Resource Connections
	Loop Trail around Sherman Fields	Sports Complex
	Connecting Walkways	Sports Complex
Visual Improvements in the Park	New Parking Lot (redesign)	Facility Improvements
	New Entrance Area	Facility Improvements
	Vegetated Screening at Little League Field	Facility Improvements
	River Access Path	Natural Resource Connections
Enhancing the Main Entrance Area and Parking Lot	New Parking Lot (redesign)	Facility Improvements
	New Entrance Area	Facility Improvements
	New Parking Lots	Sports Complex
Playground Equipment – Replacing Old and Adding New	Playground Shade Device	Facility Improvements
	Replace Swingset	Facility Improvements
	New Playground	Sports Complex

Irvin Park Master Site Development Plan

Six (6) total phases have been developed for implementing the Irvin Park Master Plan. Each phase reflects the priorities established by Curwensville Borough and the Project Study Committee. Corresponding cost information is also provided. The suggested implementation timeframe is also provided for each phase:

- *On-going* – project implementation is underway and should continue
- *Short-term* – project implementation should be focused on in 1-2 year
- *Mid-term* – project implementation should be focused on in 3-5 years
- *Long-term* - project implementation should be focused on in 5+ years

The following summarizes and provides an overview of the Phased Capital Development Program. A detailed description of the items in each phase along with a breakdown of costs is provided on the following pages.

Phase	Timeframe	Description	Total Cost
1	<i>On-going and Short-Term</i>	Boat Drop Off and River Access, River Walk and River Access Path	\$68,629
2	<i>On-going and Short-Term</i>	Matt Augustine Nature Trail, ADA Sidewalks to Pavilions and other Walking Paths	\$155,959
3	<i>Short-Term</i>	Soccer Fields and associated Parking Lots and other Sherman Field Improvements	\$589,703
4	<i>Mid-Term</i>	New Parking Area and Entrance Area Improvements	\$882,843
5	<i>Mid-Term</i>	New Pavilions and Playground Apparatus	\$76,319
6	<i>Long-Term</i>	Repair Curwensville Dam, Repurpose Basketball and Tennis Courts and Sherman Field Lighting	\$965,250
<i>Totals</i>			<i>\$2,738,703</i>

Irvin Park Master Site Development Plan

Phase Timeframe	ITEM DESCRIPTION	QNTY	UNIT	UNIT PRICE	TOTAL
1 <i>On-going and Short-Term</i>	BOAT DROP OFF AREA:				
	Gravel Boat Drop-Off	302	SY	\$25.00	\$7,550.00
	Signage (Drop Off Only)	1	EA	\$500.00	\$500.00
	Signage (Boat Trailer Parking/Overflow Parking)	1	EA	\$500.00	\$500.00
	River Access	331	SY	\$25.00	\$8,275.00
	<i>subtotal</i>	-	-	-	\$16,825.00
	RIVER WALK:				
	Gravel Sidewalk	910	SY	\$25.00	\$22,750.00
	Picnic Tables	6	EA	\$1,000.00	\$6,000.00
	<i>subtotal</i>	-	-	-	\$28,750.00
	RIVER ACCESS PATH:				
	Gravel Sidewalk	150	SY	\$25.00	\$3,750.00
	Landscaping/Beautification Improvements	1	LS	\$4,000.00	\$4,000.00
	<i>subtotal</i>	-	-	-	\$7,750.00
SUBTOTAL					\$53,325.00
CONSTRUCTION CONTINGENCIES @ 10%					\$5,332.50
TOTAL CONSTRUCTION					\$58,657.50
PROFESSIONAL SERVICES FEES (DESIGN/ENGINEERING/INSPECTION) @ 15%					\$8,798.63
ADMINISTRATIVE @ 2%					\$1,173.15
GRAND TOTAL					\$68,629.28

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Irvin Park Master Site Development Plan

Phase Timeframe	ITEM DESCRIPTION	QNTY	UNIT	UNIT PRICE	TOTAL
2 On-going and Short-Term	MATT AUGUSTINE NATURE TRAIL:				
	Signage (Trail)	2	EA	\$500.00	\$1,000.00
	Benches (around Trail)	4	EA	\$1,000.00	\$4,000.00
	Pavilion	1	EA	\$10,000.00	\$10,000.00
	Picnic Tables	6	EA	\$1,000.00	\$6,000.00
	Gravel Sidewalk from Trail to Pavilion/Picnic Tables	220	SY	\$25.00	\$5,500.00
	subtotal	-	-	-	\$26,500.00
	ADA Asphalt Sidewalks Connecting to Pavilions	211	SY	\$80.00	\$16,880.00
	Irvin Park Rd Walking Path	867	SY	\$25.00	\$21,675
	Gravel Sidewalks (Connecting Smith St to Sherman Fields)	860	SY	\$25.00	\$21,500
	Loop Trail around Sherman Fields	1,385	SY	\$25.00	\$34,625.00
SUBTOTAL					\$121,180.00
CONSTRUCTION CONTINGENCIES @ 10%					\$12,118.00
TOTAL CONSTRUCTION					\$133,298.00
PROFESSIONAL SERVICES FEES (DESIGN/ENGINEERING/INSPECTION) @ 15%					\$19,994.70
ADMINISTRATIVE @ 2%					\$2,665.96
GRAND TOTAL					\$155,958.66

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Irvin Park Master Site Development Plan

Phase Timeframe	ITEM DESCRIPTION	QNTY	UNIT	UNIT PRICE	TOTAL
3 Short-Term	New Soccer Fields	2	EA	\$100,000.00	\$200,000.00
	New Playground with ASTM Safety Surface at Sherman Fields	1	EA	\$20,000.00	\$20,000.00
	Vegetated Screening around New Playground at Sherman Fields	1	LS	\$5,000.00	\$5,000.00
	Sherman Fields and Soccer Fields Composting Restroom	1	LS	\$90,000.00	\$90,000.00
	Gravel Parking Lot (Phase 1)	2,816	SY	\$25.00	\$70,400.00
	Gravel Parking Lot (Phase 2)	3,112	SY	\$25.00	\$77,800.00
	Vegetated Screening at Little League Field	1	LS	\$5,000.00	\$5,000.00
SUBTOTAL					\$468,200.00
CONSTRUCTION CONTINGENCIES @ 10%					\$46,820.00
TOTAL CONSTRUCTION					\$515,020.00
PROFESSIONAL SERVICES FEES (DESIGN/ENGINEERING/INSPECTION) @ 15%					\$77,253.00
ADMINISTRATIVE @ 2%					\$10,300.00
GRAND TOTAL					\$589,703.00

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Irvin Park Master Site Development Plan

Phase Timeframe	ITEM DESCRIPTION	QNTY	UNIT	UNIT PRICE	TOTAL
4 Mid-Term	NEW PARKING AREA and ENTRANCE AREA IMPROVEMENTS				
	Asphalt Paving	5,550	SY	\$80.00	\$444,000.00
	6" Sub base	6,070	SY	\$25.00	\$151,750.00
	Excavation	2,000	CY	\$10.00	\$20,000.00
	Asphalt Sidewalks	309	SY	\$80.00	\$24,720.00
	Parking Lot Landscaping	1	LS	\$4,000.00	\$4,000.00
	Stone and Lumber Fencing	830	LF	\$50.00	\$41,500.00
SUBTOTAL					\$685,970.00
CONSTRUCTION CONTINGENCIES @ 10%					\$68,597.00
TOTAL CONSTRUCTION					\$754,567.00
PROFESSIONAL SERVICES FEES (DESIGN/ENGINEERING/INSPECTION) @ 15%					\$113,185.05
ADMINISTRATIVE @ 2%					\$15,091.34
GRAND TOTAL					\$882,843.39

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Irvin Park Master Site Development Plan

Phase Timeframe	ITEM DESCRIPTION	QNTY	UNIT	UNIT PRICE	TOTAL
5 Mid-Term	PAVILIONS:				
	Two (2) New Pavilions	2	EA	\$10,000.00	\$20,000.00
	Gravel Parking Lots/Walkways	710	SY	\$30.00	\$21,300.00
	New Swing Set Apparatus with ASTM Safety Surface	1	EA	\$13,000.00	\$13,000.00
	Playground Shade Screen	2	EA	\$2,500.00	\$5,000.00
SUBTOTAL					\$59,300.00
CONSTRUCTION CONTINGENCIES @ 10%					\$5,930.00
TOTAL CONSTRUCTION					\$65,230.00
PROFESSIONAL SERVICES FEES (DESIGN/ENGINEERING/INSPECTION) @ 15%					\$9,784.50
ADMINISTRATIVE @ 2%					\$1,304.50
GRAND TOTAL					\$76,319.00

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Irvin Park Master Site Development Plan

Phase Timeframe	ITEM DESCRIPTION	QNTY	UNIT	UNIT PRICE	TOTAL
6 Long-Term	Repair Curwensville Dam (Final design required to determine actual construction costs)	1	LS	\$300,000.00	\$300,000.00
	Convert Basketball Court to Volleyball	1	LS	\$20,000.00	\$20,000.00
	Convert Tennis Courts to Basketball	1	LS	\$30,000.00	\$30,000.00
	Sherman Fields Baseball Field Lighting	2	EA	\$200,000.00	\$400,000.00
SUBTOTAL					\$750,000
CONSTRUCTION CONTINGENCIES @ 10%					\$75,000
TOTAL CONSTRUCTION					\$825,000.00
PROFESSIONAL SERVICES FEES (DESIGN/ENGINEERING/INSPECTION) @ 15%					\$123,750.00
ADMINISTRATIVE @ 2%					\$16,500.00
GRAND TOTAL					\$965,250.00

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The information provided in this Recommendations section provides Curwensville Borough and the Project Study Committee with guidance that will aid in project implementation efforts. Maintaining flexibility and capitalizing on opportunities will be a key to successfully implementing this Master Plan. Unforeseen opportunities, the identification of grant funding options not identified in this Plan, unsolicited donations and offers of in-kind services will often dictate which projects or project components get implemented. The improvement projects included in this Master Plan all will lead to the betterment of Irvin Park regardless of which order they are implemented. This ultimately gives Curwensville Borough and the Project Study Committee freedom to implement the Plan as they need, as funds are available and as future conditions require. What can be said with certainty is that this Master Plan provides an assortment of improvement projects, recreation programming and asset connections ideas that matches what the Borough, members of the Project Study Committee and the Curwensville community want to see at Irvin Park and reflects how they want to use the Park now and into the future.

The background of the slide is a photograph of a chain-link fence in the foreground, with a paved area and trees visible behind it. The image is slightly faded to allow the text to stand out.

MAINTENANCE, OPERATING COSTS AND REVENUES

Irvin Park Master Site Development Plan

Irvin Park is operated and maintained by Curwensville Borough. Maintenance throughout the Borough and at Irvin Park is completed by a two (2) person Street Department. Curwensville does not have a separate Parks Department or personnel that are devoted to Park maintenance on a full-time basis. Currently the Borough's Street Department consists of a Street Leadman, Mr. Tracy Kester and an Equipment Operator/Laborer I, Mr. Dennis Curry. The Borough has indicated that staffing of their Street Department is not anticipated to be increased in the coming years.

Curwensville Borough has an assortment of maintenance related equipment and apparatus that is used to maintain Irvin Park and all other areas in the Borough. This equipment includes:

- A John Deere brand mower and a Case brand mower – they are used to cut and maintain grass areas in the Park.
- A Plow truck – used to keep the Irvin Park Rd., Smith St. and the parking areas open during winter months.
- Additional equipment includes a Hauler trailer used haul garbage cans to the dumpster and to clean-up tree limbs, brush and other accumulated debris from the Park.
- Smaller equipment including power saws (2), push mowers used to cut grass around near the Pavilions, shovels, post diggers and other small hand tools.

The Borough also maintains a fleet of automobiles, including pick-up trucks; a hauler trailer and a dump truck that are available for use in the Borough and at the Park as needed. The Borough will maintain their current level of maintenance vehicles, equipment and related apparatus in future years, replacing equipment on an as needed basis.

Maintenance Needs

Overall, respondents to the Community Survey noted that a majority of the Park's facilities are in the good or fair condition. The Band Shell, Ball Fields, Pavilions and Play Apparatus were identified as being in good condition while the Tennis and Basketball Courts and Fishing Area were reported to be in fair condition. Results of the Community Survey did highlight a need to improve the condition of the



Park's restroom facilities. It was suggested that painting the restrooms (inside and out) are needed to improve condition of the restroom facilities. Other comments received related to maintenance needs focused on the need to improve the visual quality of the Park through general appearance improvements and landscaping. Several projects that will address visual quality improvements to the Park are recommended in this Master Plan.

Irvin Park Expenses

As noted previously, maintenance at Irvin Park is completed by the Borough's Street Department. The Department's salaries, benefits and other related expenses are covered wholly by the Borough. Borough operational procedures and accounting of time and expenses does not provide for a way to delineate out Street Department expenses used and/or generated by activities at Irvin Park. Curwensville Borough's 2017 Budget does however show that operational expenses anticipated from Irvin Park in 2017 totals \$4,415.

General Park Maintenance Items	\$3,000.00
Park Electric for the Band Shell	\$175.00
Park Electric for the Pavilions	\$700.00
Park Electric for Park Lighting	\$200.00
Park Water for the restrooms and water fountain	\$340.00
Total	\$4,415.00

Irvin Park Revenues

Revenues from Irvin Park are generated from three (3) sources: Curwensville Days Concessions, Donations from Pavilion Rentals and Donations from usage of the Band Shell. Currently, the rental 'donation' for the Park's three large pavilions is \$50 while rental of the two smaller pavilions requires a \$20 'donation'. Rental of the Park's Band Shell requires a \$50 'donation'. Curwensville Borough's 2017 Budget shows that revenues anticipated to be generated from Irvin Park totals \$2,300.

Curwensville Days Concessions	\$200.00
Pavilion Rentals	\$1,800.00
Band Shell Rentals	\$300.00
Total	\$2,300.00

Comparing projected revenues with expenses shows that expenses are greater than the revenues being generated from the Park. The net deficient is approximately \$2,100 for 2017.

Additional Revenue Opportunities

As described in the Recommendations section, two (2) new large pavilions are proposed to be constructed in the Park. These new pavilions will be available for public rentals at the same rate as the existing large pavilions. It is estimated that the new pavilions will generate approximately \$1,200 of revenue annually. It is also a recommendation of this Plan to increase use of the Band Shell for concerts and performances. It is anticipated that increased use of the Band Shell could generate an additional \$200 in revenues annually. Together, the new pavilions and increased use of the Band Shell are anticipated to generate an additional \$1,400 in revenues annually. Although it will not entirely erase the operating deficient of the Park it will reduce it down closer to a break even operation. An annual review of the rental 'donation' rates for the pavilion and band shelter is recommended in this Master Plan. Increasing the rental 'donation' rates for the pavilions and Band Shell should be considered to help offset expenses.

Irvin Park Master Site Development Plan

Future Maintenance Responsibilities

A well maintained Irvin Park will enhance a user's experience which will lead to good word of mouth promotion and increased usage levels which will ultimately increase the Park's positive impact on the community and surrounding region. Specific maintenance objectives recommended for the Park include:

- Eliminating unsafe and unsightly conditions
- Limiting impacts the Park has on the surrounding environment
- Reducing inconveniences for Park users
- Ensuring proper functioning of the Park facilities and amenities
- Repainting (inside and out) the Restroom facilities

In addition, usage of the Park is anticipated to increase as the improvements recommended in this Master Plan are completed. Increased use will inevitably lead to increased maintenance responsibilities. Future maintenance tasks that will likely result from completion of recommended Park Improvements are provided below. Curwensville Borough will need to incorporate these tasks into their Park maintenance routine. Maintenance tasks that will need to be completed in the Park fall into four primary categories including Trash, Vegetation, Surface, Structures and Trees. The following describes individual tasks within each maintenance category.

- ❑ Trash and Debris - this includes picking up and removing trash and debris found along new trails and walkways installed in the Park and within reason, in areas adjacent to the trails and walkways that are visible to users. This includes the River Walk and pathway to the River, the Matt Augustine Nature Trail and the walkways connecting the Boat Drop Off area, Soccer fields and along Irvin Park Rd. It is recommended that volunteer based clean up days be held at the Park on a monthly basis. Likely volunteer groups include members of the Soccer Association and Little League association, their players and parents and members of the Project Study Committee. Local church groups, Boy Scout and Girl Scouts should also be engaged.
- ❑ Vegetation - this includes mowing and weed whacking, as necessary, the surface of the Matt Augustine Nature Trail and areas adjacent to new trails and walkways in the Park. Cutting and pruning trees and tree limbs back away from these areas to allow unobstructed passage and cutting back areas with unwanted weeds or invasive species will also be required. Additional tasks can include improving the visual attractiveness of the trails and walkways by planting vegetated areas with attractive plants and flowers and/or establishing garden areas around the trails, walkways and their access points.
- ❑ Surface - as the name suggests, tasks in the category focus on maintaining the integrity of trail and walkway surfaces, soccer fields, parking areas, playgrounds and the boat drop off area. Activities can range from routine inspection to periodic grading to spot surface repairs to entire resurfacing efforts. Activities will also include being prepared to address emergency situations such as immediately removing a tree limb felled across a trail or walkway, stabilizing a major washout event or anything else that creates an immediate unsafe condition.

It is anticipated that the Curwensville Little League Association will continue to be responsible for the operation and maintenance of the Little League field and Sherman Fields and supporting facilities including parking areas and concession stands. It is anticipated that Curwensville Borough will enter into a maintenance agreement with the Curwensville Recreation Soccer Association or other entity that will be constructing the soccer and supporting facilities in the Park.

- ❑ Structures – new structures recommended in this Plan include two (2) new pavilions, picnic tables, signage, fencing, lighting, a composting restroom, playground and benches. These structures will need to be inspected and repaired as required. Activities will range from routine inspection of the structures to periodic repair and replacement.
- ❑ Trees - This Park Master Plan recommends that an annual assessment of the tree resources in the Park be completed to identify maintenance needs in order to protect public safety as well as to promote the longevity of the trees and the value they provide.

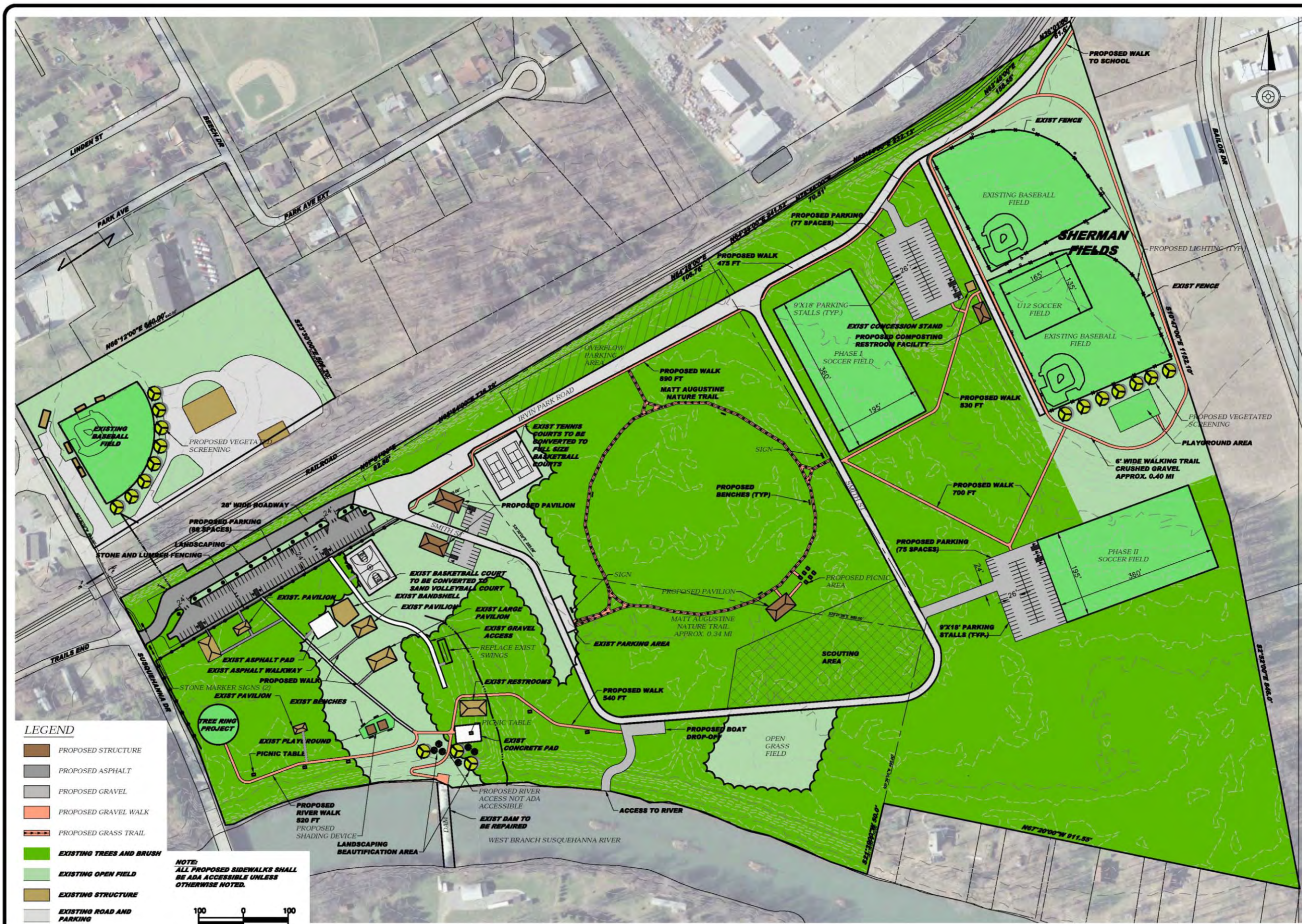
Maintenance Equipment and Costs

Incorporating future maintenance tasks will be more efficient if proper equipment is available for use. Maintenance equipment needed for the Park includes a tractor with mower and a drag or roller to maintain the surface of the Nature Trail, a small truck or utility vehicle that can transport supplies and that can be used to remove larger debris from portions of the walkways not readily accessible from Irvin Park Rd or Smith St., power equipment such as chain saws, trimmers and other tools like hand saws, pruners, rakes and shovels. It is recommended that Curwensville Borough anticipates escalating maintenance costs and programs maintenance tasks and capital costs for maintenance equipment into their annual budgeting process. It is recommended that the Borough increase their park maintenance budget by 10% annually to address anticipated maintenance equipment and maintenance tasks needs.

APPENDIX A

MASTER SITE DEVELOPMENT PLAN

Irvin Park Master Site Development Plan



**IRVIN PARK MASTER SITE
DEVELOPMENT PLAN**

FOR THE

**CURWENSVILLE BOROUGH
CLEARFIELD COUNTY, PA**

MASTER SITE PLAN

ENGINEERING ARCHITECTURE AND DESIGN SERVICES
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Scale	AS SHOWN	No.	Revisions	Date
Date	08/29/2017			
Drawn By	APR			
Checked By	BEC			
Project No.	0180-16-305			
File No.	0180-16-305			



Seal

Date

Drawing No.

1

APPENDIX B
IRVIN PARK
TREE INVENTORY AND ASSESSMENT

Introduction

In March and April 2013, Rich Johnson, DCNR Service Forester, and Timothy Frontz, DCNR Area Forest Health Specialist, conducted a tree inventory and hazard tree assessment at the request of the Curwensville Borough. Data collection for the assessment and inventory was initiated on March 26, 2013 and was completed on April 9, 2013.

Observations indicate the park is blessed with a significant number of large, historic, and mature shade trees. Many of these trees provide considerable value to the public and their recreational experiences at the park. While these trees represent tremendous resource value, their maintenance in high-use public areas also represents significant liability. This completed inventory represents a first step in the development of a comprehensive park landscape master plan. This inventory does not cover all the trees at Irvin Park, but it focuses on the trees that represent the highest potential risks due to their location in the high-use areas of the park and adjacent to the walking trail. It is critically important that the master plan contain provisions to routinely assess the park's trees for all maintenance needs in order to protect public safety as well as promote longevity of the trees and the value they provide.

Data Collection

During March and April 2013, basic tree inventory data was collected using a diameter tape and a Biltmore stick. The diameter tape was used to record tree diameters to the nearest inch with the measurements taken at breast height (DBH). The Biltmore stick was used to estimate the height of each tree in feet. Other data collected included each tree's botanical name, common name, species code, diameter-at-breast height (DBH), height, risk rating, comments, treatment recommendations (see work codes in Table 1), and treatment priority ranking. The risk rating refers a subjective rating of each tree's potential for structural failure (branches, trunk, or support roots) ranging from very low to critical. In

some cases a rating of UNKNOWN is indicated if tree conditions could not be accessed in order to be accurately assessed (Example: A hollow cavity and decay in the main trunk 50 feet from the ground level). The risk rating incorporates tree species and other tree factors such as size, lean, weight distribution, decay, etc. In Appendix 1 (Master Inventory List), the comments field contains important comments about each tree related to its current condition and recommended treatment actions. The work code is a single or two-letter code to quickly identify recommended treatment actions. The following list (also included in Appendix 1A) identifies recommended treatment actions with their work codes.

Table 1 Key to tree work codes and associated treatment recommendations.

WORK CODE	RECOMMENDED TREATMENT ACTION(S)
C	Cable (cabling needed to reduce risk of branch or trunk failure)
CC	Crown cleaning (removal of weak, broken, dead, & diseased branches)
DW	Deadwooding (removal of all deadwood 2 in. diameter and larger)
E	Evaluate (further evaluation needed)
F	Fertilize (according to soil test results to improve vigor)
I	Insect (pest species identified, control action recommended)
M	Mulch (add mulch to improve soil and growing conditions)
P	Plant (consider planting or replanting with desirable tree species)
R	Remove (significant defects present requiring removal of the tree)
SP	Structural prune (needed to develop proper branch structure, especially with young trees..)
ST	Soil test (needed to assess soil conditions and soil nutrient content)

The treatment priority ranking ranks each tree with regards to the priority for implementation of recommended treatments (High priority = 1 to Low priority = 4). By prioritizing treatment recommendations, Borough of Curwensville personnel should have better flexibility for planning and developing more modest annual budget appropriations in order to fund needed proactive treatments

rather than reacting to more unpredictable situations often requiring significant funding. Perhaps even more important justification for prioritizing treatments is based on addressing the safety concerns posed by severe risk trees and their potential to cause significant personal injury and/ or property damage in the event of structural failure.

2013 Inventory Summary

Annual field evaluations and assessments of the Irvin Park trees are required in order to properly manage the trees and the inherent safety concerns they pose in a high-use recreational site. These annual assessments, as part of a 5 or 10-year park Master Plan, are critical in preserving, maintaining, and enhancing the park's valuable trees safely for the enjoyment of the public.

Appendix 2 identifies critical risk trees. There are 7 critical risk trees that have been identified in the March/ April 2013 inventory. Five of these 7 critical risk trees are large in size, with diameters over 24 inches. Critical risk trees have factors present which indicate failure of all or part of the tree is eminent and removal is the only treatment option that should be considered in order to safely mitigate the risks to person or property. A large critical risk tree with a priority ranking of 1 is extremely dangerous and should be removed immediately.

Appendix 3 identifies 9 serious risk trees. Severe risk trees have major defects such as significant decay, that often require removal. Failure of severe risk trees may not be immediate, however multiple factors or conditions often exist that represent an unacceptable level of risk or probability for failure. Severe risk trees must be monitored very carefully with removal or corrective actions taken concurrently with critical risk trees or very soon thereafter.

Irvin Park is blessed with several large eastern hemlock (*Tsuga canadensis*) specimens. The eastern hemlock is Pennsylvania's state tree. Fifteen hemlock trees were identified in the inventory with 12 trees located in the main park area and 3 trees located adjacent to the trail area. Seven large-diameter (> 24 in. DBH), high-value hemlocks are positioned in main park area. Health assessments

conducted at the time of the tree inventory confirmed the presence of an important hemlock pest the hemlock woolly adelgid)(HWA). HWA was accidentally introduced to the Pacific Northwest of the United States in 1923. The pest species was confirmed in southeastern Pennsylvania in the late-1960's. The first HWA infestation in Clearfield county was confirmed in December 2010 (see Appendix 4) in Karthaus Township near the Susquehanna River. HWA is very prolific with two generations per year. Once established, HWA populations build to damaging levels causing crown thinning and defoliation. Individual trees may die 3 to 5 years following initial infestations, particularly if the trees are not vigorous or are stressed by other damaging agents. The treatment work code I has been assigned to these hemlock trees. In order to save these valuable specimens (Appendix 5), insecticide treatments should begin in 2014 to control HWA. There are several insecticide treatment options to control HWA. It is very important that HWA treatments are implemented by an experienced, PA-certified pesticide applicator.

In addition to the high-value hemlock trees, Irvin Park is blessed with a large population (108 trees) of mature oak trees. The park's oak population is mainly represented by white oak (*Quercus alba*), northern red oak (*Quercus rubra*), scarlet oak (*Quercus coccinea*), and black oak (*Quercus velutina*). White oak comprises half (50%) of the oak species in the park. Many of these large oak trees have multiple treatment work codes including pruning to remove deadwood, soil testing, fertilization, and mulching. Several of these trees may be at a critical point in terms of their vulnerability to various damaging agents and their ability to withstand stress and maintain enough vigor to prevent general decline, dieback, and mortality. Relatively small budgetary considerations would be required to implement very important plant health care operations that would enable the Borough to prolong the longevity of these large high-value trees for a considerable length of time. Intervention beginning in 2014 will prevent dieback, decline, and mortality of a considerable number of these large trees. Lack of intervention would likely result in the need to budget considerable finances inherent with the removal of large trees. Additionally, decline and mortality of the large trees represents other huge losses that can't be easily measured such as

historical value, aesthetic quality of the park, shade, and visitor recreational experience.

As mentioned previously, very cost-effective plant health care treatments can be implemented to promote vigor and longevity of the park's large trees. Proper mulching represents perhaps the most important of these treatments. Properly applied mulch (see Appendix 6) will help retain valuable soil moisture, prevent mechanical injury to the roots from turf maintenance equipment, provide valuable organic matter, and promote critical biological activity necessary for healthy tree root systems. Proper mulching consists of a good bark mulch (aged, if possible) applied in a 3 to 4 inch layer from the trunk flare area to at a radius at least 3 times (3X) the diameter of the trunk (see Appendix 5). It is very important to keep the mulch pulled away from constant contact with the tree trunk. Mulch in constant contact with the trunk increases the risk for pest problems, both insect and disease-causing agents.

If possible, extending the mulch zone to the rain drip edge of the tree leaf canopy provides optimal soil conditions. However, a compromise between the area mulched and the area maintained in grass is often necessary in order to appease visual preferences or aesthetic goals. Breaking up old clumped mulch each spring and lightly remulching or refreshing the mulch around needed trees helps maintain maximum biological benefit to the tree(s) while maintaining cost efficiency with tree maintenance program(s).

Soil testing is very important in determining if there are significant nutrient deficiencies that are negatively impacting the health and vitality of the park's trees. It is important to recognize that in most typical park settings, there is a very low level of natural nutrient additions to the soil due to leaf removal. Proper soil nutrient content and availability to the trees root systems is essential for vitality and long-term survival. Soil testing is inexpensive (\$9.00 through Penn State University) and due to the close proximity of multiple specimens of the same species (Example: white oak), a composite sample can be submitted that would accurately assess multiple specimens.

Custom fertilization programs based on soil test results would enable the best chance for promoting tree vitality and resiliency to various damaging agents. Any tree fertilization work should be combined with proper mulching to maximize the positive tree health benefits. The positive impact of combined soil testing, fertilization, and proper mulching far outweighs the influence of the individual treatments by themselves. Fall (after leaf drop) is the best time to implement most tree fertilization programs due to the ability to promote recovery of compromised root systems. However, splitting the application for high-value trees in poor condition and applying in both spring (after full leaf expansion) and fall has been found to be quite beneficial.

One of the most important components to the park's tree maintenance program is routine (yearly or sooner if specified) tree health evaluations and hazard assessments. The importance of the evaluation component can't be overemphasized due to the liability issues involved in ensuring public safety on park property in close proximity to all the trees. The evaluation component is essential in identifying tree failure risks and working proactively to address any unacceptable risks. As previously stated, this should be accomplished by prioritizing the most serious risks first, which would normally be focused on tree removals. However, not all cases will necessitate or warrant removal, but yet significant risk is involved with the presence of deadwood , as known as "widow makers", in the tree crowns. Deadwooding is probably the most important pruning requirement for Irvin Park due to the number and size of the large trees present in the park. As with all other tree maintenance operations, ONLY trained professionals with documented credentials as Certified Arborists through the International Society of Arboriculture (ISA) should be included as potential contractors utilized by the Borough and /or Shade Tree Commission.

One of the positive measures already in place in the administration of the trees in Irvin Park is the provision requiring a tree to be planted whenever a tree must be removed. This is good way to ensure that trees of various age classes will always be present at Irvin Park. Careful planning should be used to ensure that the right tree species are planted according to the expected size of the tree at maturity, matching tree species with soil/ site requirements, and allowing

sufficient space for proper root and tree canopy development. For example, a tulip tree (*Liriodendron tulipifera*) would not be a good choice to plant next to a building due to its large size at maturity. Additionally, attention should be given to insect and disease conditions that may be inherent to certain tree species that would require substantial care in order to maintain. Appendix 7 lists small, medium, and large-sized deciduous tree species at maturity that could be considered for planting in the park, it also contains some attributes that may make them desirable for planting in certain locations. Other brief notes provide locations or reasons not to plant them at certain locations. This list IS NOT all inclusive, but serves as a general aid to the range of tree species available for planting from most nurseries. Appendix 8 illustrates some evergreen tree species to be considered for planting. As with other tree care operations, NO planting stock should be purchased and planted without being first inspected by a qualified tree care professional. Poor quality planting stock and improper planting techniques often lead to expensive problems (such as girdling roots) in the future that may not become evident until 30 or 40 years after planting. The value of these losses is compounded by the loss of tree and the benefits it provides (shade, beauty, etc.), the time lost in growing the tree to significant size (usually years), and the considerable finances invested in maintaining the tree over time (mulch, irrigations, etc.). One final note with regards to tree planting is the critical importance of maintaining a high level of species diversity in Irvin Park. Tree species diversity of under 10% in most locations is undesirable and greatly increases the chance for significant losses in monoculture plantings due to exotic insect and disease damaging agents. A good example of this is easily illustrated with the heavy losses in urban tree populations in Ohio and Michigan due to the Emerald Ash Bore since the detection of this pest in Michigan in 2002.

Fundraising and Educational Opportunities

The uniqueness of Irvin Park lends itself very well to good opportunities for fundraising and education. The presence of the stage area underneath the large trees, the walking trail, the proximity to the river, and the notable existing events

(car shows) all provide a way to showcase the park and enhance fundraising and education in assisting to maintain the value of the park and its tree resources. Interpretative signage with historical facts or interesting information on trees/wildlife may stimulate interest and donations to help maintain the park. Some proceeds from entertainment at the stage may also help fund development of a park landscape master plan and implementation of the master plan. Volunteers such as the Boy Scouts or Girl Scouts may be able to assist as part of their merit badge achievement requirements. Local college students may also be able to contribute as part of their environmental science, forestry, or similar course of study or independent studies program. Also, some funding may be available from the International Society of Arboriculture and its TREECITY USA or similar programs.

Tree Tagging and Plant Records

An important recommendation to consider, regardless of whether a decision is made to develop a landscape master plan for Irvin Park, pertains to tagging the trees with a number identification tag. At a minimum, this will enable park maintenance staff to quickly and accurately report safety concerns or maintenance needs to Borough personnel responsible for managing the park. A simple tagging and identification plan would consist of obtaining small aluminum tags with numbers that would be attached to the trunk with a long 3- to 4-inch stainless-steel wood screw. The purpose of the long wood screw is to hold the tag away from the bark surface so that the tag is not rapidly overgrown by growth of the bark. Attachment to the tree trunk should occur high enough from the ground level that the tags would be out of reach from anyone reaching up from ground level. This may be important in minimizing damage or loss of tags due to vandalism. A more elaborate tree tagging system could be implemented, if desired, that might include the tree's common name, scientific name, and an accession number. Accession numbers are commonly used by public gardens and arboreturns in a computer plant records database. These records often contain more detailed information that might include such data as the year the tree was

planted, the source location, and other special information common to historic specimens, etc.

Summary

This report does not serve as a landscape master plan for Irvin Park. The purpose of this report is to encourage or stimulate further interest in developing a comprehensive park landscape master plan in order that the very valuable tree resources in the park can be properly managed for the enjoyment of the public on a long-term basis. A landscape master plan would also help provide the Borough of Curwensville an organized template to maintain the parks tree and other plant resources in a safe and sustainable manner.

List of Appendices

- Appendix 1 Master tree inventory for Irvin Park (March 2013).
- Appendix1A Key to work codes and treatment recommendations.
- Appendix 2 Table of critical risk hazard trees at Irvin Park (March 2013).
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- Appendix 4 Map of PA counties with confirmed HWA infestations (Dec. 2013).
- Appendix 5 Table of high-value hemlock trees in (March 2013 Irvin Park needling treatments to control HWA.
- Appendix 6 Illustration of proper mulching around a mature copper beech.
- Appendix 7 List of deciduous tree species for possible planting at Irvin Park.
- Appendix 8 List of evergreen tree species for possible planting at Irvin Park.
- Appendix 9 Hemlock Woolly Adelgid pest information fact sheet.

Appendix 1 Master Tree Inventory List for Irvin Park (March 2013)

TREE	BOTANICAL NAME	COMMON NAME	SP. CODE	DIA(in.)	HT (ft.)	COMMENTS	RISK RATING	WORK CODE	PRIORITY	TRAIL
1	Picea abies	Norway spruce	NS	11	32	May be planned for removal due to stone monument construction	Very low			
2	Acer rubrum	Red maple	RM	17	40	Severe risk due to trunk decay @20-25 ft.	Severe	R	2	
3	Carya ovata	Shagbark hickory	HI	9	40	Light deadwooding needed (2 in. dia. Branches or less)	Very low	DW	4	
4	Carya ovata	Shagbark hickory	HI	14	40	Light deadwooding needed (2 in. dia. Branches or less)	Very low	DW	4	
5	Picea abies	Norway spruce	HI	12	32	Good condition	Very low			
6	Quercus rubra	N. Red oak	RO	26	48	Small girdling root should be removed	Low	ST, F, M	1	
7	Picea abies	Norway spruce	NS	15	40	Good condition	Very low			
8	Picea abies	Norway spruce	NS	11	32	Basal decay @ trunk flare; 5-6 ft. decay column located 3 ft. from grnd.	Medium	E		
9	Picea abies	Norway spruce	NS	13	40	Original central stem gone; Now has 3 stems originating at 20 ft.	Low	E		
10	Picea abies	Norway spruce	NS	13	40	Poor form; Codominant trunk @ 20 ft. w/ included bark	Low	E		
11	Picea abies	Norway spruce	NS	13	40	Good condition	Very low			
12	Acer rubrum	Red maple	RM	12	25	Poor form;; Trunk decay @ 10 ft from grnd.	Medium	R	2	
13	Pinus sylvestris	Scots pine	SP	19	48	Small deadwood in the tree canopy	Low	DW	3	
14	Picea glauca	White spruce	WS	6	15	Ok	Very low			
15	Acer saccharum	Sugar maple	SM	12	48	Ok	Very low			
16	Pinus strobus	White pine	WP	25	80	Light deadwooding needed: Adjacent to picnic pavilion	Low	DW, E, ST, F	1	
17	Pinus strobus	White pine	WP	26	80	Sig. crown thinning/ decline evident; Needle chlorosis; Reveal 6 mo.	High	DW, E	1	
18	Tsuga canadensis	Eastern hemlock	HEM	22	70	Ok; Light deadwooding; Light decline/ dieback evident in top of tree	Low	DW, ST, F, M, I	1	
19	Pinus strobus	White pine	WP	26	100	Ok; Light deadwooding	Low	DW, ST, F, M	1	
20	Pinus strobus	White pine	WP	25	80	Ok	Low			
21	Picea abies	Norway spruce	NS	13	60	Good condition	Low			
22	Tsuga canadensis	Eastern hemlock	HEM	13	40	Good condition; Treat for HWA	Low	I	1	
23	Magnolia acuminata	Cucumber magnolia	CM	20	80	Good condition	Low			
24	Pinus strobus	White pine	WP	26	95	Good condition	Low	E		
25	Pinus strobus	White pine	WP	16	70	Good condition	Low			
26	Quercus alba	White oak	WO	48	90	Needs follow-up eval for decay @ trunk flare; Burls present	UNKNOWN	E	1	
27	Acer saccharum	Sugar maple	SM	7	32	Good condition	Very low			
28	Pinus strobus	White pine	WP	25	90	Good condition	Low	E		
29	Acer platanoides	Norway maple	NM	13	40	Trunk wound near grnd; Codom stems @ 10 ft. from grnd.	Low	E		
30	Acer saccharum	Sugar maple	SM	8	40	Coddominant stems at 16 ft. from grnd.	Low	E		
31	Acer saccharum	Sugar maple	SM	22	80	Crown decline evident; Light deadwooding needed	Medium	DW, ST, F, M, E	2	
32	Magnolia acuminata	Cucumber magnolia	CM	29	80	Good condition; Light deadwooding needed	Low	DW	4	

33	Pinus strobus	White pine	WP	10	50	Open cavity; Decay column approx. 5" wide X 4 ft. long	UNKNOWN	E	2
34	Pinus strobus	White pine	WP	28	110	Good condition;	Low	E	1
35	Tsuga canadensis	Eastern hemlock	HEM	25	90	Very nice tree; Treat for HWA	Low	I	1
36	Pinus strobus	White pine	WP	22	90	Good condition	Low	E	
37	Acer rubrum	Red maple	RM	24	40	Main stem is gone; Sig. decay	Critical	R	1
38	Quercus alba	White oak	WO	15	80	Very nice tree	Very low		
39	Picea abies	Norway spruce	NS	12	65	Good condition	Very low		
40	Picea abies	Norway spruce	NS	8	40	Good condition	Very low		
41	Pinus sylvestris	Scots pine	SP	16	50	Poor form; crowding tree # 40; Consider removing to promote Tree 40	Low	E	
42	Picea abies	Norway spruce	NS	12	80	Good condition	Very low		
43	Pinus sylvestris	Scots pine	SP	19	80	Needs cable due to codominate stems	Medium	C	3
44	Picea abies	Norway spruce	NS	19	80	Good condition; Lower crown cleaning/ remove dead branch stubs	Very low	CC, DW	4
45	Pinus sylvestris	Scots pine	SP	15	70	Ok Very light deadwooding.	Very low	DW	4
46	Pinus sylvestris	Scots pine	SP	15	50	Re-evaluate tree @ trunk flare	UNKNOWN	E	2
47	Picea abies	Norway spruce	NS	21	80	Good condition	Very low		
48	Picea abies	Norway spruce	NS	11	65	Good condition	Very low		
49	Picea abies	Norway spruce	NS	17	55	Heavy resin flow; Significant trunk decay; reevaluate	Medium	E	2
50	Fraxinus americana	White ash	WA	20	75	Ok. Codominate trunks @ 20 ft. ht. from grd: Reevaluate for cable	UNKNOWN	E	2
51	Picea abies	Norway spruce	NS	15	55	Good condition	Very low		
52	Robinia pseudoacacia	Black locust	BL	17	65	Some decline/ dieback in the crown; Deadwood present.	Medium	DW, E	2
53	Picea abies	Norway spruce	NS	16	50	Good condition	Very low		
54	Picea abies	Norway spruce	NS	9	40	Good condition	Very low		
55	Picea abies	Norway spruce	NS	5	25	Good condition	Very low		
56	Robinia pseudoacacia	Black locust	BL	17	60	Sig. decline/ dieback; Adjacent to powerline	Severe	R	1
57	Robinia pseudoacacia	Black locust	BL	14	60	Sig. decline/ dieback; Branches overhand road & bridge	Severe	R	1
58	Acer platanoides	Norway maple	NM	14	40	Evaluate cavity	UNKNOWN	E	1
59	Robinia pseudoacacia	Black locust	BL	15	45	Extensive crown dieback	Severe	R	1
60	Robinia pseudoacacia	Black locust	BL	21	45	Extensive crown dieback	Severe	R	1
61	Quercus rubra	N. Red oak	RO	43	85	Ok; Some deadwood present in the crown	Low	DW	2
62	Acer rubrum	Red maple	RM	13	40	Ok	Very low		
63	Acer rubrum	Red maple	RM	16	50	Good condition; Very small deadwood	Very low	DW	4
64	Pinus strobus	White pine	WP	26	110	Good condition	Low	ST, F, M, E,	1
65	Pinus strobus	White pine	WP	23	80	Good condition	Low	ST, F, M, E	1
66	Quercus alba	White oak	WO	29	90	Large internal crack in trunk from ground to 25' Trunk decay; Reeval.	UNKNOWN	E	1

67	Acer rubrum	Red maple	RM	18	48 May be retained as wildlife tree pending trunk decay evaluation	UNKNOWN	E	1
68	Acer rubrum	Red maple	RM	32	90 Critical risk for failure. Remove immediately	Critical	R, P	1
69	Carya ovata	Shagbark hickory	HI	9	20 Ok	Very low		
70	Quercus alba	White oak	WO	22	70 Good condition. Very light deadwooding needed.	Very low	DW	4
71	Quercus rubra	N. Red oak	RO	15	48 ok. Trunk lean toward the Susquehanna River	Low		
72	Quercus rubra	N. Red oak	RO	36	55 Sig. decay column @ base (28 in.). Reevaluate.	UNKNOWN	E	1
73	Quercus rubra	N. Red oak	RO	22	85 Good condition. Light deadwooding needed.	Very low	DW	4
74	Quercus coccinea	Scarlet oak	SO	20	80 Good condition	Very low		
75	Quercus rubra	N. Red oak	RO	25	90 Good condition	Very low		
76	Pinus strobus	White pine	WP	26	100 Good condition	Low	ST, F, M, E	2
77	Quercus alba	White oak	WO	7	20 Top half of crown is dead.	Low	R, P	3
78	Tilia americana	American basswood	TA	16	75 Good condition	Low		
79	Pinus strobus	White pine	WP	13	50 Good condition	Very low		
80	Nyssa sylvatica	Black gum	BG	14	60 Good condition	Very low		
81	Quercus alba	White oak	WO	34	80 Critical risk for failure. Remove immediately, Severe decay at 50' height	Critical	R, P	1
82	Betula populifolia	White birch	WB	6	32 Ok	Low		
83	Tsuga canadensis	Eastern hemlock	HEM	30	100 Very nice tree. Apply insecticides to control HWA	Low	I, E, ST, F, M	1
84	Tsuga canadensis	Eastern hemlock	HEM	28	60 Apply insecticides to control HWA.	Low	I, E, ST, F, M	1
85	Quercus alba	White oak	WO	34	90 Light deadwooding needed. Soil test, mulch, and nutrient mgmt.	Very low	DW, ST, F, M	4
86	Tsuga canadensis	Eastern hemlock	HEM	9	30 Good condition. Apply insecticides to control HWA.	Very low	I, E	1
87	Acer saccharum	Sugar maple	SM	10	50 Good condition	Very low		
88	Tsuga canadensis	Eastern hemlock	HEM	18	50 Apply insecticides to control HWA.	Very low	I, E	1
89	Acer rubrum	Red maple	RM	19	40 Hollow cavity in trunk. Sig. decay. No top to the tree. Reevaluate	UNKNOWN	E	1
90	Quercus rubra	N. Red oak	RO	25	80 Very nice tree. Good condition. Very light deadwooding needed.	Very low	DW	4
91	Pinus strobus	White pine	WP	17	70 Trunk cavity @ 10 - 12 ft. from grnd. Reevaluate.	UNKNOWN	E	1
92	Pinus strobus	White pine	WP	21	85 Good condition			
93	Carya ovata	Shagbark hickory	HI	22	85 Ok. Light deadwooding needed. Remove metal bracket from trunk.	Very low	DW	4
94	Acer rubrum	Red maple	RM	17	55 Remove wire insulators from trunk. Reevaluate trunk for decay	UNKNOWN	E	1
95	Acer rubrum	Red maple	RM	16	32 Lost top of the crown. Reevaluate for trunk decay	UNKNOWN	E	1
96	Pinus strobus	White pine	WP	22	100 Nice tree.	Low	E, ST, F, M	1
97	Acer saccharum	Sugar maple	SM	11	48 Good condition	Very low		
98	Nyssa sylvatica	Black gum	BG	11	40 Good condition	Very low		
99	Acer rubrum	Red maple	RM	12	30 Poor form. Open cavity w/ decay @ 15-16 ft. ht. from grnd. Reevaluate	UNKNOWN	E	1
100	Picea abies	Norway spruce	NS	14	50 Good condition. Raise mower deck to avoid damage to roots	Very low		

101	Picea abies	Norway spruce	NS	12	50 OK	Very low		
102	Picea abies	Norway spruce	NS	16	56 Good condition	Very low		
103	Picea abies	Norway spruce	NS	10	35 Good condition	Very low		
104	Quercus coccinea	Scarlet oak	SO	33	75 Codominant stem @ 30 ft. from grd. Install cable. Reevaluate trunk.	UNKNOWN	E, C, DW	1
105	Quercus alba	White oak	WO	29	65 Crown clean. Mulch. Raise mower deck to avoid root damage	Very low	CC, ST, F, M	1
106	Acer rubrum	Red maple	RM	14	40 OK	Very low	DW	4
107	Myssa sylvatica	Black gum	BG	24	50 14 inch cavity in trunk @ trunk base. Reevaluate	UNKNOWN	E	1
108	Quercus rubra	N. Red oak	RO	3	16 Remove landscape fabric from trunk base at the groundline	Very low		
109	Acer saccharum	Sugar maple	SM	5	20 OK. Trunk injury.	Very low	E	4
110	Quercus alba	White oak	WO	28	75 OK	Very low		
111	Carya ovata	Shagbark hickory	HI	7	40 Severe basal injury to trunk. Remove. Medium-low risk	Medium	R, P	2
112	Quercus alba	White oak	WO	20	65 OK. Small trunk injury.	Very low		
113	Acer saccharum	Sugar maple	SM	4	15 NO NAILS IN THE TREES! Top is dead, hypoxylon canker. Remove	Low	R, P	3
114	Carya ovata	Shagbark hickory	HI	14	60 Crown clean. Structural prune; Remove cross-over branch	Low	CC, SP	3
115	Pinus strobus	White pine	WP	21	80 OK; Light deadwooding needed.	Low	DW, E	2
116	Quercus alba	White oak	WO	11	60 OK. Structural pruning needed	Very low	SP	3
117	Pinus strobus	White pine	WP	17	70 Good condition. Soil test/ consider nutrient mgmt. Mulch	Low	ST, F, M	1
118	Pinus strobus	White pine	WP	29	90 Good condition Soil test/ consider nutrient mgmt. Mulch	Low	ST, F, M	1
119	Pinus strobus	White pine	WP	21	100 Sig. trunk decay @ 25-30 ft. ht. from grd. Reevaluate	UNKNOWN	E	1
120	Pinus strobus	White pine	WP	20	90 Good condition. Soil test/ consider nutrient mgmt. Mulch	Low	ST, F, M	1
121	Tsuga canadensis	Eastern hemlock	HEM	26	100 Light deadwooding. Apply insecticides to control HWA	Low	I, ST, F, M	1
122	Pinus strobus	White pine	WP	19	90 Closed cavity in the trunk @ 20 ft. ht. from grd. Reevaluate	UNKNOWN	E	1
123	Fraxinus americana	White ash	WA	12	40 OK	Very low		
124	Quercus alba	White oak	WO	16	50 OK	Very low		
125	Acer platanoides	Norway maple	NM	10	30 Poor form. Crown dieback. Codominant stems. Remove	Low	R, P	3
126	Quercus alba	White oak	WO	16	50 OK, but codominant stems present. May need cable in future.	Low		
127	Quercus alba	White oak	WO	25	75 Crown cleaning, high priority due to location next to walk	Low	CC	1
128	Fraxinus americana	White ash	WA	22	60 OK. Light deadwooding needed; High priority due to location near walk	Low	DW	1
129	Acer platanoides	Norway maple	NM	15	40 Poor form. Codominant stems present. Remove & replant	Low	R, P	4
130	Quercus alba	White oak	WO	41	90 Cable needed for very large scaffold branch. Soil test, nutrient mgmt.	Medium	C, ST, F, M	1
131	Quercus rubra	N. Red oak	RO	22	60 Good condition	Very low		
132	Quercus alba	White oak	WO	11	49 Codominant stems. Structure prune to develop good form.	Very low	SP	1
133	Tsuga canadensis	Eastern hemlock	HEM	29	50 Apply insecticides to control HWA.	Very low	I	1
134	Quercus alba	White oak	WO	34	65 Basal wound w/ Armillaria. Crown decline evident. Reevaluate.	UNKNOWN	E	1

135	Quercus alba	White oak	WO	37	95 Ok, but crown decline is evident. Soil test, nutrient mgmt. Mulch	Low	ST, F, M	1
136	Quercus alba	White oak	WO	37	80 Hollow cavity in main trunk @ 15 ft. Severe crown decline. Remove.	Critical	R	1
137	Quercus alba	White oak	WO	36	80 Priority prune lg. deadwood in top of the crown. Close to playground.	Low	DW	1
138	Acer rubrum	Red maple	RM	8	30 Ok. Poor form. Codominate stems. Consider replacement.	Low	P	3
139	Acer platanoides	Norway maple	NM	11	25 Poor condition. Replant	Medium	R, P	3
140	Acer saccharum	Sugar maple	SM	4	24 Basal wound. Will not develop into a good tree. Plan to replace	Low	R, P	3
141	Betula populifolia	White birch	WB	7	24 Ok	Low		
142	Acer platanoides	Norway maple	NM	7	24 Ok	Low		
143	Quercus alba	White oak	WO	11	50 Small deadwood in the tree canopy	Very low	DW	4
144	Betula populifolia	White birch	WB	4	16 Top broke out of the tree. Sig. decline. Remove & replant	Low	R, P	4
145	Quercus rubra	N. Red oak	RO	20	60 Medium-sized deadwood in the crown + broken branch	Medium	DW	2
146	Quercus rubra	N. Red oak	RO	25	90 Ok; Some small deadwood in the crown	Low	DW	3
147	Quercus rubra	N. Red oak	RO	29	90 Cut girdling root @ trunk flare. Codominate stems, may need cable	Low	C	2
148	Quercus alba	White oak	WO	13	40 Crown suppressed. Poor form. Trunk decay @ 16 ft. ht from grnd.	UNKNOWN	E,	1
149	Quercus alba	White oak	WO	17	70 Ok. Codominate trunks @ 30 ft. from grnd.	Low	E	
150	Quercus rubra	N. Red oak	RO	32	90 Deadwooding (Priority 1). May need cable in future (Priority 3)	Medium	DW, C	
151	Quercus alba	White oak	WO	12	32 Good condition	Very low		
152	Pinus resinosa	Red pine	RP	10	24 OK. Codominal stem w/ included bark (low risk)	Low		
153	Pinus resinosa	Red pine	RP	9	32 Good condition	Very low		
154	Acer rubrum	Red maple	RM	14	40 OK. Light crown cleaning needed.	Low	CC	3
155	Quercus alba	White oak	WO	21	60 Some deadwood present in the crown.	Very low	DW	4
156	Quercus alba	White oak	WO	21	70 Ok. Very light deadwooding needed.	Very low	DW	4
157	Acer rubrum	Red maple	RM	6	30 Ok	Very low		
158	Pinus resinosa	Red pine	RP	8	25 Ok	Very low		
159	Acer rubrum	Red maple	RM	10	40 Poor condition. Cavities near grnd, 8ft. & 10 ft. ht. from the grnd.	Medium	R, P	2
160	Carya ovata	Shagbark hickory	HI	11	35 Ok	Very low		
161	Quercus alba	White oak	WO	32	70 Reevaluate trunk. Lost major branch @ 30 ft.. Reevaluate	UNKNOWN	E	1
162	Quercus alba	White oak	WO	8	35 Ok. No nails in the trees!!	Very low		
163	Pinus strobus	White pine	WP	37	69 Top broke out of the tree. Possible old lightning strike. Remove.	Critical	R, P	1
164	Quercus alba	White oak	WO	18	48 Very light deadwooding needed.	Very low	DW	4
165	Pinus strobus	White pine	WP	17	40 Good condition	Very low		
166	Quercus alba	White oak	WO	25	60 Some light deadwooding needed.	Very low	DW	4
167	Quercus alba	White oak	WO	39	90 Reevaluate trunk. Lost major branch @ 30 ft.. Reevaluate	UNKNOWN	E	1
168	Fraxinus americana	White ash	WA	25	60 Light deadwooding needed.	Very low	DW	3

169	Pinus strobus	White pine	WP	16	40 Good condition	Very low		
170	Pinus strobus	White pine	WP	13	32 Good condition	Very low		
171	Quercus alba	White oak	WO	34	55 Top of tree crown has sig. decay. Reevaluate	UNKNOWN	E	1
172	Quercus alba	White oak	WO	39	95 Next to bathroom bldg. Some small deadwood. Mulch area	Low	DW, ST, F, M	2
173	Pinus strobus	White pine	WP	35	80 Ok.	Low		
174	Pinus strobus	White pine	WP	13	40 Ok.	Very low		
175	Quercus alba	White oak	WO	33	75 Along river. Some small deadwood present.	Low	DW	3
176	Pinus resinosa	Red pine	RP	11	40 Ok.	Very low		
177	Pinus resinosa	Red pine	RP	12	40 Ok.	Very low		
178	Quercus cocinea	Scarlet oak	SO	19	65 Ok.	Very low		
179	Quercus alba	White oak	WO	31	65 Ok. Low priority deadwooding needed.	Very low	DW	3
180	Picea abies	Norway spruce	NS	15	45 Good condition	Very low		
181	Tsuga canadensis	Eastern hemlock	HEM	31	90 No HWA detected. Low priority crown cleaning needed.	Low	CC	3
182	Pinus strobus	White pine	WP	11	35 Ok	Very low		
183	Tsuga canadensis	Eastern hemlock	HEM	10	30 No HWA detected. Carefully monitor for HWA.	Very low		
184	Pinus resinosa	Red pine	RP	7	30 Ok	Very low		
185	Pinus resinosa	Red pine	RP	4	20 Vandalism (cut marks in the bark)	Very low		
186	Pinus resinosa	Red pine	RP	11	42 Ok.	Very low		
187	Pinus resinosa	Red pine	RP	20	65 Ok.	Very low		
188	Acer rubrum	Red maple	RM	23	60 3 codominant stems; cabling recommended; Reevaluate.	Medium	C, E	2
189	Quercus alba	White oak	WO	30	65			
190	Acer rubrum	Red maple	RM	8	40 Nice tree, except trunk wound. Reevaluate for future removal	Medium	E	2
191	Acer platanoides	Norway maple	NM	9	24			
192	Quercus alba	White oak	WO	32	80 Sig. crown decline. Deadwood removal needed. Reevaluate top cavity	UNKNOWN	DW, E	1
193	Quercus rubra	N. Red oak	RO	31	80 Deadwood removal (Priority 1); Cable recommended. Mulch w/ Tree 192	Medium	DW, C, M	2
194	Pinus resinosa	Red pine	RP	16	65 Light deadwooding needed	Very low	DW	3
195	Prunus serotina	Black cherry	BC	20	65 OK	Low	DW	3
196	Prunus serotina	Black cherry	BC	21	65 Basal decay	Severe	R	1
197	Acer rubrum	Red maple	RM	20	60 Crown clean	Low	CC	3
198	Carya ovata	Shagbark hickory	HI	12	60 Good condition	Very low		
199	Quercus rubra	N. Red oak	RO	35	80 Light deadwooding needed.	Low	DW	3
200	Acer rubrum	Red maple	RM	29	80 Deadwood removal needed. Cable recommended. Evaluate trunk.	Medium	DW, C	1
201	Quercus rubra	N. Red oak	RO	40	90 Crown Clean; Deadwooding needed.	Low	DW	1
202	Quercus alba	White oak	WO	36	90 Decline in upper crown. Soil test, nutrient mgmt., and mulch.	Low	DW, ST, F, M	1

203	Quercus alba	White oak	WO	36	70 Deadwooding(high priority) next to baby swing. Evaluate trunk cavity	UNKNOWN	DW, E	1
204	Acer rubrum	Red maple	RM	13	55 Ok. Surface roots damaged by mower. Crown clean	Medium	CC, E	2
205	Acer rubrum	Red maple	RM	16	60 Crown clean; 2 small broken branches; NO nails in the trees!	Low	CC	3
206	Acer platanoides	Norway maple	NM	16	20 Poor condition; Sig. dieback; Remove & replant	Medium	R, P	1
207	Acer rubrum	Red maple	RM	25	70 Serious risk; Remove	Severe	R	1
208	Acer rubrum	Red maple	RM	16	65 Ok	Very low		
209	Acer rubrum	Red maple	RM	15	65 Ok.; Small dead branch hanger.	Very low		
210	Picea abies	Norway spruce	NS	12	40 Good condition	Very low		
211	Juglans nigra	Black walnut	BW	13	40 Good condition.	Very low		
212	Prunus serotina	Black cherry	BC	17	50 Poor condition; Significant top dieback; Remove.	Severe	R	1
213	Quercus rubra	N. Red oak	RO	30	65 Deadwood pruning needed.	Low	DW	1
214	Picea glauca	White spruce	WS	7	20 Poor condition; Will never recover to make a nice tree	Low	R	3
215	Picea abies	Norway spruce	NS	22	70 Good condition; 2 small branches pruned will clear powerline	Very low		
216	Pinus sylvestris	Scots pine	SP	11	32 Ok	Very low		
217	Picea abies	Norway spruce	NS	19	55 Ok.	Very low		
218	Quercus alba	White oak	WO	16	65 Deadwood pruning needed.	Very low	DW	3
219	Quercus alba	White oak	WO	23	50 Deadwood pruning needed.	Very low	DW	1
220	Quercus velutina	Black oak	BO	20	75 Next to walk path; Deadwood pruning needed (small-sized branches)	Low	DW	1
221	Quercus velutina	Black oak	BO	20	75 Codominant stems. Consider cable. Mulch w/tree 220; Deadwood prune	Medium	DW, C	1
222	Carya ovata	Shagbark hickory	HI	8	35 Crown suppressed (completely shaded by overtopping trees)	Very low		
223	Quercus alba	White oak	WO	9	40 Remove codominant stem @ 20 ft. from grnd; Structure pruning needed	Very low	SP	2
224	Quercus alba	White oak	WO	22	40 Soil test; Correct stub cuts w/ some branches	Very low	SP	3
225	Carya ovata	Shagbark hickory	HI	10	50 Correct stub cuts w/ some branches	Very low	SP	3
226	Quercus alba	White oak	WO	23	80 Some light deadwooding needed (Priority 3); Soil test; nutrient mgmt.	Very low	DW, ST, F, M	1
227	Acer rubrum	Red maple	RM	14	65 Codominant trunks @ 7 ft. from grnd; Poor form; Consider removal	Medium	o R, E, or C	2
228	Carya ovata	Shagbark hickory	HI	6	12 Suppressed; will never make a nice tree	Low	R, P	3
229	Quercus velutina	Black oak	BO	23	70 Near parking lot; Deadwood pruning (High priority)	Low	DW	1
230	Quercus alba	White oak	WO	13	60 Structure pruning needed (Priority 2); Crown cleaning (Priority 3)	Low	CC, SP	3
231	Carya ovata	Shagbark hickory	HI	13	70 Ok.	Very low		
232	Quercus alba	White oak	WO	27	75 Light deadwooding; Tree branches over stage sitting; Nutrient mgmt.	Low	DW, ST, F	1
233	Quercus alba	White oak	WO	25	75 Reevaluate old prune wound (10 in. dia.) @ 40 ft. from grnd.	UNKNOWN	E	1
234	Acer rubrum	Red maple	RM	10	40 Ok.	Very low		
235	Quercus alba	White oak	WO	16	65 Get powerline off of the tree. Remount conductor to approved pole	Low	DW	3
236	Quercus alba	White oak	WO	28	85 Buds tightly clustered; Nutrient mgmt; Mulch; Light deadwood removal	Low	DW, ST, F, M	1

237	<i>Carya ovata</i>	Shagbark hickory	HI	12	60	OK.	Very low		
238	<i>Acer rubrum</i>	Red maple	RM	10	35	Remove, low failure risk; Replant	Low	R, P	3
239	<i>Quercus rubra</i>	N. Red oak	RO	25	70	Significant crown decline evident; Soil test; nutrient mgmt.	Low	DW, ST, F,	1
240	<i>Tsuga canadensis</i>	Eastern hemlock	HEM	13	40	Thin foliage density; Chlorosis; Soil test; Nutrient mgmt.	Low	ST, F	1
241	<i>Quercus alba</i>	White oak	WO	11	55	Crown dieback evident; Soil test/ Nutrient mgmt.	Low	ST, F	1
242	<i>Picea abies</i>	Norway spruce	NS	8	30	OK	Very low		
243	<i>Quercus alba</i>	White oak	WO	21	75	Next to main path; Light deadwood removal needed; Nutrient mgmt.	Very low	DW, ST, F	1
244	<i>Quercus rubra</i>	N. Red oak	RO	29	75	Light deadwood removal needed; Nutrient mgmt.	Low	DW, ST, F	1
245	<i>Quercus alba</i>	White oak	WO	26	70	Nutrient mgmt.	Very low	ST, F	1
246	<i>Quercus rubra</i>	N. Red oak	RO	37	90	Large deadwood capable of striking trail	Low	DW	1 Y
247	<i>Pinus strobus</i>	White pine	WP	31	90	Lost original top of tree; Reevaluate annually	Low	E	Y
248	<i>Quercus alba</i>	White oak	WO	19	65	Deadwood pruning needed.	Low	DW	1 Y
249	<i>Quercus alba</i>	White oak	WO	21	75	OK	Low		Y
250	<i>Quercus alba</i>	White oak	WO	16	75	OK	Low		Y
251	<i>Quercus alba</i>	White oak	WO	16	75	OK	Low		Y
252	<i>Quercus velutina</i>	Black oak	BO	19	75	Medium-sized deadwood removal needed due to location over trail	Low	DW	1 Y.
253	<i>Quercus velutina</i>	Black oak	BO	28	85	Large-sized deadwood over the trail.	Low	DW	1 Y
254	<i>Pinus strobus</i>	White pine	WP	19	90	OK.	Low	E	Y
255	<i>Pinus strobus</i>	White pine	WP	18	90	OK.	Low	I	Y
256	<i>Quercus velutina</i>	Black oak	BO	20	85	Medium-sized deadwood removal needed due to location over trail	Low	DW	1 Y
257	<i>Pinus strobus</i>	White pine	WP	17	90	OK.	Low	E	Y
258	<i>Quercus velutina</i>	Black oak	BO	21	80	Medium-sized deadwood removal needed due to location over trail	Low	DW	1 Y
259	<i>Quercus velutina</i>	Black oak	BO	16	85	Medium-sized deadwood removal needed due to location over trail	Low	DW	1 Y
260	<i>Quercus velutina</i>	Black oak	BO	17	80	Basal portion of trunk needs semi-annual inspection	Medium	E	1
261	<i>Quercus rubra</i>	N. Red oak	RO	21	90	OK.	Low		Y
262	<i>Quercus velutina</i>	Black oak	BO	9	40	Small deadwood in the tree canopy	Low	DW	3 Y
263	<i>Quercus velutina</i>	Black oak	BO	10	40	Small deadwood in the tree canopy	Low	DW	3 Y
264	<i>Quercus rubra</i>	N. Red oak	RO	14	80	Medium-sized deadwood removal needed due to location over trail	Low	DW	2 Y
265	<i>Quercus velutina</i>	Black oak	BO	21	85	Medium-sized deadwood removal needed due to location over trail	Low	DW	1 Y
266	<i>Quercus velutina</i>	Black oak	BO	21	75	Medium-sized deadwood removal needed due to location over trail	Low	DW	1 Y
267	<i>Quercus velutina</i>	Black oak	BO	14	75	Small deadwood in the tree canopy	Low	DW	3 Y
268	<i>Quercus rubra</i>	N. Red oak	RO	26	90	Large deadwood in lower crown capable of striking the trail	Low	DW	1 Y
269	<i>Quercus rubra</i>	N. Red oak	RO	29	90	lg. codominant stem originating @ 12 ft. from grnd. Cable needed	Medium	C	1 Y
270	<i>Quercus velutina</i>	Black oak	BO	23	75	Serious risk for branch failure: Remove.	Severe	R	1 Y

271	Acer rubrum	Red maple	RM	8	40 Dead tree; Remove.	Critical	R	1 Y
272	Quercus velutina	Black oak	BO	21	85 Medium-sized deadwood removal due to location over trail	Low	DW	1 Y
273	Tsuga canadensis	Eastern hemlock	HEM	28	85 Some lg. dead branches near ground. Reevaluate for hollow trunk	UNKNOWN	E	1 Y
274	Acer rubrum	Red maple	RM	17	50 Hollow cavity w/ sig. decay. Remove.	Critical	R	1 Y
275	Quercus alba	White oak	WO	29	85 Lg deadwood present over trail; Reevaluate flattened trunk@50'	UNKNOWN	DW, E	1 Y
276	Quercus velutina	Black oak	BO	17	60 Near stream bridge; Some deadwood removal needed.	Low	DW	2 Y
277	Quercus alba	White oak	WO	45	100 Basal crack with w/ stringy rot (poss. Armillaria); Reevaluate trunk	UNKNOWN	E	1 Y
278	Acer rubrum	Red maple	RM	20	70 Reevaluate roof/ trunk flare areas for decay	UNKNOWN	E	1 Y
279	Quercus velutina	Black oak	BO	26	85 Lg. deadwood present overhanging trail	Low	DW	1 Y
280	Tsuga canadensis	Eastern hemlock	HEM	21	45 Ok Suppressed crown position under Tree # 279	Low		Y
281	Nyssa sylvatica	Black gum	BG	19	80 Lg. trunk cavity @ grnd.; Reevaluate	UNKNOWN	E	1 Y
282	Nyssa sylvatica	Black gum	BG	21	80 Ok	Low		Y
283	Pinus strobus	White pine	WP	27	100 Trunk flare damaged when oak uprooted; Tall tree in high wind area	Medium	E	1 Y
284	Pinus strobus	White pine	WP	29	100 Crown is declining; Reevaluate(high priority)	UNKNOWN	E	1 Y
285	Pinus strobus	White pine	WP	29	100 Sig. trunk cavity w/ decay; Remove due to danger of location; High wind	Critical	R	1 Y
286	Tsuga canadensis	Eastern hemlock	HEM	15	35 Declining; Low risk; remove as time permits	Low	R	4 Y
287	Nyssa sylvatica	Black gum	BG	6	24 Ok.	Very low		Y
288	Acer rubrum	Red maple	RM	13	45 Ok.	Very low		Y
289	Fraxinus pennsylvanicum	Green ash	GA	10	45 Ok.	Very low		Y
290	Quercus alba	White oak	WO	27	75 Some deadwood pruning needed.	Low	DW	3 Y
291	Quercus velutina	Black oak	BO	22	75 Lean toward the trail; Reevaluate semi-annually	Medium	E	1 Y
292	Quercus rubra	N. Red oak	RO	28	80 Lean toward Susquehanna River; 6" dead branch near picnic table	Medium	DW	2
294	Quercus alba	White oak	WO	36	100 Sig. decline in the upper crown w/ cavities. Evaluate for poss. Removal.	UNKNOWN	DW, E, F, M, ST	1
295	Pinus strobus	White pine	WP	9	25 Suppressed by large, overtopping large White Oak. Near river	Very low		

Appendix 1A Key to work codes and treatment recommendations.

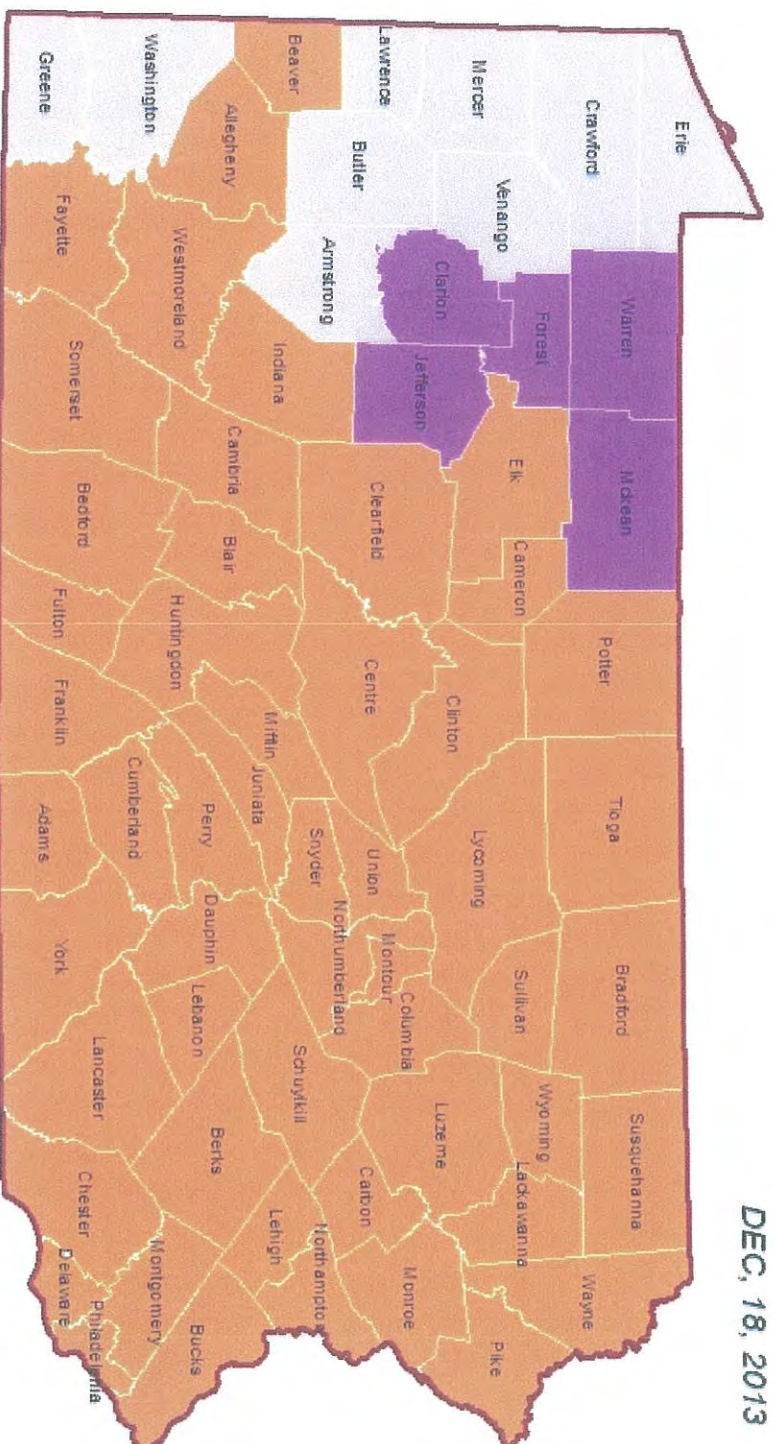
WORK CODE	RECOMMENDED TREATMENT ACTION(S)
C	Cable (cabling needed to reduce risk of branch or trunk failure)
CC	Crown cleaning (removal of weak, broken, dead, & diseased branches)
DW	Deadwooding (removal of all deadwood 2 in. diameter and larger)
E	Evaluate (further evaluation needed)
F	Fertilize (according to soil test results to improve vigor)
I	Insect (pest species identified, control action recommended)
M	Mulch (add mulch to improve soil and growing conditions)
P	Plant (consider planting or replanting with desirable tree species)
R	Remove (significant defects present requiring removal of the tree)
SP	Structural prune (needed to develop proper branch structure, especially with young trees..)
ST	Soil test (needed to assess soil conditions and soil nutrient content)

Appendix 2 Table of Critical Risk Hazard Trees at Irvin Park (March 2013)

TREE BOTANICAL NAME	COMMON NAME	SP. CODE	DIA(In.)	HT (ft.)	COMMENTS	RISK RATING	WORK CODE	PRIORITY	TRAIL
37 Acer rubrum	Red maple	RM	24	40	Main stem is gone; Sig. decay	Critical	R	1	
68 Acer rubrum	Red maple	RM	32	90	Critical risk for failure. Remove immediately	Critical	R, P	1	
81 Quercus alba	White oak	WO	34	80	Critical risk for failure. Remove immediately	Critical	R, P	1	
136 Quercus alba	White oak	WO	37	80	Hollow cavity in main trunk @ 15 ft. Severe crown decline. Remove.	Critical	R	1	
163 Pinus strobus	White pine	WP	37	69	Top broke out of the tree. Possible old lightning strike. Remove.	Critical	R, P	1	Y
271 Acer rubrum	Red maple	RM	8	40	Dead tree; Remove.	Critical	R	1	Y
274 Acer rubrum	Red maple	RM	17	50	Hollow cavity w/ sig. decay; Remove.	Critical	R	1	Y
285 Pinus strobus	White pine	WP	29	100	Sig. trunk cavity w/ decay; Remove due to danger of location; High wind	Critical	R	1	Y

PA HWA Infestation

DEC, 18, 2013



Division of Forest Pest Management
Bureau of Forestry
DCNR
Pennsylvania

Appendix 5 Table of high-value Hemlock trees in Irvin Park needing treatments to control HWA (March 2013)

TREE BOTANICAL NAME	COMMON NAME	SP. CODE	DIA(in.)	HT (ft.)	COMMENTS	RISK RATING	WORK CODE	PRIORITY	TRAIL
86 Tsuga canadensis	Eastern hemlock	HEM	9	30	Good condition. Apply insecticides to control HWA.	Very low	I, E	1	
88 Tsuga canadensis	Eastern hemlock	HEM	18	50	Apply insecticides to control HWA.	Very low	I, E	1	
133 Tsuga canadensis	Eastern hemlock	HEM	29	50	Apply insecticides to control HWA.	Very low	I	1	
183 Tsuga canadensis	Eastern hemlock	HEM	10	30	No HWA detected, Carefully monitor for HWA.	Very low	E		
273 Tsuga canadensis	Eastern hemlock	HEM	28	85	Some lg. dead branches near ground. Reevaluate for hollow trunk	UNKNOWN	E	1	Y
18 Tsuga canadensis	Eastern hemlock	HEM	22	70	Ok. Light deadwooding. Light decline/ dieback evident in top of tree	Low	DW, ST, F, M, I	1	
22 Tsuga canadensis	Eastern hemlock	HEM	13	40	Good condition. Treat for HWA	Low	I	1	
35 Tsuga canadensis	Eastern hemlock	HEM	25	90	Very nice tree. Treat for HWA	Low	I	1	
83 Tsuga canadensis	Eastern hemlock	HEM	30	100	Very nice tree. Apply insecticides to control HWA	Low	I, E, ST, F, M	1	
84 Tsuga canadensis	Eastern hemlock	HEM	28	60	Apply insecticides to control HWA.	Low	I, E, ST, F, M	1	
121 Tsuga canadensis	Eastern hemlock	HEM	26	100	Light deadwooding. Apply insecticides to control HWA	Low	I, ST, F, M	1	
181 Tsuga canadensis	Eastern hemlock	HEM	31	90	No HWA detected. Low priority crown cleaning needed.	Low	CC	3	
240 Tsuga canadensis	Eastern hemlock	HEM	13	40	Thin foliage density; Chlorosis; soil test; nutrient management	Low	ST, F	1	
280 Tsuga canadensis	Eastern hemlock	HEM	21	45	Ok Suppressed crown position under Tree # 279	Low		Y	
286 Tsuga canadensis	Eastern hemlock	HEM	15	35	Declining; low risk; remove as time permits	Low	R	4	Y

Appendix 6 Illustration of proper mulching around a mature copper beech tree.



Appendix 7 List of deciduous tree species for possible planting at Irvin Park

Botanical name	Common name	Size @maturity	Native species	Key attributes
Acer buergerianum	Trident maple	Small	No	Good fall leaf color. Interesting bark. Tolerates poor soil.
Acer campestre	Hedge maple	Medium	No	Tolerates pruning and compacted soils.
Acer ginnala	Amur maple	Small	No	Good fall color. Tolerates poor soils.
Acer griseum	Paperbark maple	Small/Medium	No	Great bark interest and fall color. No insect/disease issues.
Acer palmatum	Japanese maple	Small	No	Many nice cultivars. Good fall color. Needs good soils.
Acer platanoides	Norway maple	Medium	No	'Crimson King' is popular cultivar with dark red leaves.
Acer rubrum	Red maple	Medium/Large	Yes	Good fall color. Tolerates various site conditions.
Acer saccharum	Sugar maple	Large	Yes	Great fall foliage color. Prefers better soils.
Aesculus X carnea	Red horsechestnut	Medium	Yes	Notable red flowers in May. Can develop leaf scorch in summer.
Amelanchier arborea	Serviceberry	Small	Yes	One of first trees to have white flowers in spring.
Betula allegheniensis	Yellow birch	Medium	Yes	Likes moist sites. Difficult to transplant.
Betula lenta	Black birch	Large	Yes	
Betula nigra	River birch	Small/ medium	Yes	Great bark interest. Resistant to bronze birch borer.
Betula papyrifera	Paper birch	Medium	Yes	Interesting bark. Susceptible to bronze birch borer.
Betula populifolia	Gray birch	Medium	Yes	Interesting bark. Susceptible to bronze birch borer.
Carpinus betulus	European hornbeam	Small/ Medium	No	Tolerates wide range of soil conditions. Many superb cultivars including compact, upright, & weeping forms.
Carpinus caroliniana	American Hornbeam	Small	Yes	Good tree for along streams & woodland edges. Likes moist soils but makes good lawn tree. Fall color yellow to red
Carya cordiformis	Bitternut hickory	Medium/Large	Yes	Slender irregular crown
Carya glabra	Pignut hickory	Medium	Yes	Found along hilltops & ridges in the wild. Rich yellow fall color.
Carya ovata	Shagbark hickory	Medium/ Large	Yes	Likes well-drained loamy soils, but is very adaptable. Strong resilient wood.
Catalpa bignonioides	Southern Catalpa	Medium	Yes	Neat flowers. Tremendously tolerant of poor soil and growing conditions.
Catalpa speciosa	Northern Catalpa	Medium	Yes	Known for toughness & adaptability. Open crown.

Botanical name	Common name	Size @maturity	Native species	Key attributes
Magnolia 'Butterflies'		Medium	No	Cultivated variety. Yellow flowers in spring.
Magnolia 'Elizabeth'		Medium	No	Cultivated variety. Yellow flowers in spring.
Magnolia spp.	Other cultivars	Medium	No	Check for cold hardiness in northern PA counties.
Malus spp.	Crabapples	Small	Yes	Many good cultivars. Check for disease resistance.
Nyssa sylvatica	Black gum	Medium	Yes	Good tree form. Good fall leaf color.
Oxydendrum arboreum	Sourwood	Small	Yes	Great tree w/ neat, fragrant flowers. Fantastic fall color. Avoid alkaline soils.
Parrotia persica	Persian parrotia	Small/Medium	No	Many great characteristics. Flowers, bark, leaves, fall color
Platanus occidentalis	Sycamore	Large	Yes	Needs space. Susceptible to sycamore anthracnose.
Platanus X acerifolia	London planetree	Large	No	Good street tree. Resistant to anthracnose.
Prunus serotina	Black cherry	Large	Yes	Prone to borer when growing on poor sites or stressed.
Prunus sargentii	Sargent cherry	Small/Medium	Yes	Good fall leaf color. Nice tree to use in landscaping.
Prunus spp.	Many cultivars	Small/ Medium	No	Many good cultivars available for landscaping
Quercus acutissima	Sawtooth oak	Medium	No	Horticultural interest.
Quercus alba	White oak	Large	Yes	Good fall color. Needs space.
Quercus bicolor	Swamp white oak	Large	Yes	Needs space. Horticultural interest.
Quercus coccinea	Scarlet oak	Large	Yes	Prone to bole cankers.
Quercus imbricaria	Shingle oak	Medium	Yes	Horticultural interest.
Quercus macrocarpa	Bur oak	Large	Yes	Needs space. Very sturdy tree. Adapts well to many soils.
Quercus michauxii	Swamp chestnut oak	Large	Yes	Horticultural interest.
Quercus muehlenbergii	Chinkapin oak	Large	Yes	Hard to transplant, but handles dry, limestone soils.. Horticultural interest.
Quercus palustris	Pin oak	Large	Yes	Requires acid soils.
Quercus prinus	Chestnut oak	Large	Yes	Form can be course, but tolerates dry, poor soils.
Quercus robur	English oak	Medium/Large	No	Quite adaptable. Easier to transplant than white oak.
Quercus rubra	Northern red oak	Large	Yes	Needs space. Wildlife tree. Good fall color.
Quercus stellata	Post oak	Medium	Yes	Horticultural interest.
Quercus velutina	Black oak	Large	Yes	Needs space. Horticultural interest.
Sassafras albidum	Sassafras	Medium	Yes	Horticultural interest. Great fall color. Adaptable to low pH soils.
Steartia koreana	Korean Stewartia	Small	No	Many great attributes: bark, flowers, fall color.

Botanical name	Common name	Size @maturity	Native species	Key attributes
<i>Stewartia pseudocamellia</i>	Japanese <i>stewartia</i>	Small/ Medium	No	Great tree for landscaping and gardens. Very difficult to tell apart from Korean <i>stewartia</i> .
<i>Syrax obassia</i>	Fragrant snowbell	Small	NO	Elegant branch structure. Makes striking landscape tree.
<i>Syringa reticulata</i>	Japanese tree lilac	Small	No	Probably one of the most adaptable trees to difficult sites. Use cultivars 'Ivory Silk', 'Regent', or 'SummerSnow'. Fragrant white flowers in May and June.
<i>Syringa vulgaris</i>	Common lilac	Small	Yes	Very fragrant flowers. Multi-stemmed large shrub in form. Select cultivars resistant to powdery mildew
<i>Syringa</i> spp.	Various hybrids	Small	No	Select cultivars for flowers and disease resistance.
<i>Tilia americana</i>	Basswood	Medium/Large	Yes	Not used widely as a landscape tree.. Smaller-leaved linden species more often in the landscape.
<i>Tilia cordata</i>	Littleleaf linden	Small/Medium	No	Very durable street tree. Tolerates pruning. Problem with aphids and sooty mold over parked cars.
<i>Ulmus americana</i>	American Elm	Large	Yes	Only plant if disease-resistant selections are available..
<i>Viburnum</i> spp.	<i>Viburnum</i>	Small	Yes	Multi-stemmed shrubs. Major problem with defoliation from <i>Viburnum</i> leaf beetle.
<i>Viburnum carlesii</i>	Koreanspice <i>viburnum</i>	Small	No	Great shrub species to use in the landscape. Fragrant pink flowers in the spring. Highly resistant to <i>viburnum</i> leaf beetle.
<i>Zelkova serrata</i>	Japanese zelkova	Medium/ Large	No	Used extensively with urban plantings to replace elms. Vase-like form. Acceptable trees if properly pruned.

Appendix 8 List of evergreen tree species for possible planting at Irvin Park

Botanical name	Common name	Size @maturity	Native species	Key attributes
<i>Abies concolor</i>	White fir	Medium	Yes	One of the most adaptable firs. Attractive blue-green to silver-blue needles
<i>Abies nordmanniana</i>	Nordmann Fir	Medium	No	Very attractive, dense, shiny-black-green needles w/ excellent form. Good for landscape use.
<i>Calocedrus decurrens</i>	California Incensecedar	Medium	Yes	Neat elegant and formal form. Likes moist, well-drained, acidic soils, but is very adaptable. Native to western U.S.
<i>Cedrus atlantica</i>	Atlas cedar	Medium	No	Attractive blue/green foliage. Interesting cones. Must use cold hardy cultivars in northern PA counties.
<i>Cedrus deodora</i>	Doedar cegar	Medium	NO	Dense, fluffy habit when young. Open and artistic crown with age. Must use cold-hardy cultivars in N. PA.
<i>Cerus libini</i>	Cedar of Lebanon	Medium	No	Patriarch of true cedars. Must use cold hardy cultivars for northern PA counties.
<i>Chamaecyparis lawsoniana</i>	Lawson's falsecypress	Medium	Yes	Not common in eastern landscapes due to its intolerance to heavy, wet, poorly-drained soils. Use cultivar 'Alumini' in eastern states and Midwest. Rich blue-green foliage and nice vertical form.
<i>Chamaecyparis obtuse</i>	Hinoki Falsecypress	Various sizes	No	Many good cultivars with different attributes.
<i>Chamaecyparis pisifera</i>	Japanese falsecypress	Various	No	Many good cultivars with different forms and attributes.
<i>Cryptomeria japonica</i>	Japanese cryptomeria	Medium	No	Rich reddish-brown bark. Worthy plant as an alternative to pines. Use cold hardy cultivars. Likes well drained soils.
<i>XCupressocyparis leylandii</i>	Leyland cypress	Medium/Large	Yes	Grows fast. Used as specimen trees or as screening/hedges. Excellent salt tolerance, but bagworms and cankers can be troublesome. Many cultivars.
<i>Ilex crenata</i>	Japanese holly	Small	No	Easy to transplant and grow, but susceptible to root fungus and nematodes.
<i>Ilex x meserve</i>	Meserve Hybrid Hollies	Small	Yes	Grows about 10 -15 ft. tall. Good heat tolerance and good choices for northern gardens.
<i>Ilex opaca</i>	American Holly	Medium	Yes	Slow growing, but considered by many one of the finest tree-type evergreen hollies. Shiny green leaves and abundant red fruit provide for considerable interest.

Botanical name	Common name	Size @maturity	Native species	Key attributes
<i>Ilex glabra</i>	Inkberry	Small	Yes	Worthy of consideration and is much more adaptable and trouble-free than <i>Ilex crenata</i> . Several good cultivars.
<i>Juniper spp.</i>	Juniper	Small		Many native and introduced species. Very variable from tree forms to groundcover types. Must carefully select cultivars. Some problems with rust fungi, twig blight fungi, and canker fungi
<i>Larix decidua</i>	European larch	Large	No	Deciduous evergreen that is tolerant of moist and dry soils and windswept locations. Problems with larch casebearer.
<i>Larix kaempferi</i>	Japanese larch	Medium/ Large	No	Similar to European larch
<i>Larix laricina</i>	Tamarack	Medium	Yes	Lovely fall color. Excellent plant for moist, boggy soils, and cold climates. It does not do well in heat.
<i>Metasequoia glyptostroboides</i>	Dawn redwood	Medium/ Large	No	Great deciduous evergreen. Tolerates both wet and dry soils. Allow room. Great orangish-brown and reddish-brown fall color.
<i>Picea abies</i>	Norway spruce	Medium/ Large	No	Naturalized in North America from Europe. Very adaptable, except for high heat situations
<i>Picea glauca</i>	White spruce	Medium	Yes	Good native spruce. Withstands heat, cold, drought, and crowding. Also, resistant to deer browsing.
<i>Picea omorika</i>	Serbian spruce	Medium	No	Very attractive silver-green color needles. Great formal appearance. One of the two-best non-native spruces to use in the landscape.
<i>Picea orientalis</i>	Oriental spruce	Medium	No	Very attractive specimen tree. One of the two best non-native spruces to use in the landscape.
<i>Picea pungens</i>	Colorado spruce	Medium	Yes	Attractive blue color to the needles. Trouble with needlecast fungi and canker fungi after 20 to 30 years.
<i>Pinus bungeana</i>	Lacebark pine	Medium	No	Horticultural interest. Prefers well-drained soil. Excellent exfoliating bark. Once established, tolerates dry soils and acid or high pH soils.
<i>Pinus cembra</i>	Swiss stone pine	Small/ Medium	No	One of the top 5 pines for landscaping. Horticultural interest.
<i>Pinus densiflora</i>	Japanese red pine	Medium	No	Very picturesque species, especially a mature open grown tree. Needs well-drained soils.
<i>Pinus flexilis</i>	Limber pine	Medium	Yes	One of the most elegant 5-needle pines. Very adaptable.

Botanical name	Common name	Size @maturity	Native species	Key attributes
<i>Pinus koraiensis</i>	Korean pine	Medium	No	Not well known, but one of the most elegant 5-needle pines. Also one of the more cold-hardy pines.
<i>Pinus parviflora</i>	Japanese white pine	Small/ Medium	No	Great tree for restricted spaces. Good accent or specimen conifer.
<i>Pinus peuce</i>	Balkan pine	Small/ Medium	No	Rarely available, but a great 5 needle pine. Adaptable to varied soils. Great specimen or accent plant.
	Bosnian pine	Small/Medium	No	Great specimen plant. Long, dark green needles. Attractive formal form. Pine needle scale can be an issue with stressful planting sites.
<i>Pinus resinosa</i>	Red pine	Medium/ Large	Yes	Not the best for landscape use. Problems with Diplodia needle blight. Needs well-drained soils. Dislikes wet sites.
<i>Pinus strobus</i>	Eastern white pine	Large	Yes	Good pine for general landscape use. Suffers in compacted and poorly-drained soils. White pine weevil can be a problem.
<i>Pinus thunbergiana</i>	Japanese black pine	Small	No	Horticultural interest. Large silky white buds.
<i>Pinus wallichiana</i>	Himalayan pine	Small	No	Horticultural interest. Elegant form. Needs well-drained soil. Keep away from desiccating winds.
<i>Sciadopitys verticillata</i>	Japanese umbrellapine	Small	NO	Very unique and artistic pine. Plant in full sun to partial shade. Slow-growing, but worth having as a specimen tree.
<i>Taxodium ascendens</i>	Pond cypress	Medium/ Large	Yes	More columnar in form than baldcypress. Deciduous evergreen.
<i>Taxodium distichum</i>	Baldcypress	Medium/ Large	Yes	Striking specimen, especially in small groupings. Adaptable to most soils, except high pH. Difficult to transplant due to taproot. Deciduous evergreen.
<i>Taxus baccata</i>	English Yew	Small/ Medium	No	Dark, shiny green needles. Seeds occur on female plants. Several cultivars to choose from depending on location and purpose.
<i>Taxus cuspidata</i>	Japanese Yew	Small	No	Many cultivars, size is variable. Good choices for cold climates. Choose cultivars based on location and purpose.
<i>Taxus x media</i>	English-Japanese yew	Small	No	Most are shrubby, but some upright forms. Better choices for northern and Midwest landscapes.
<i>Thuja occidentalis</i>	Eastern arborvitae	Small/ Medium	Yes	Very durable. Tolerates pruning well. Good cultivars.

Botanical name	Common name	Size @maturity	Native species	Key attributes
<i>Thuja orientalis</i>	Oriental arborvitae	Small/ Medium	No	Quite tolerant. Needles will not discolor in winter like Eastern Arborvitae. Easy to control with pruning. Several good cultivars noted.
<i>Thuja plicata</i>	Western arborvitae	Medium	Yes	Probably the most elegant of the arborvitaes. Dark green foliage that does not discolor in winter as much as Eastern arborvitae. 'Atrovirens' is an excellent cultivar.
<i>Thujaopsis dolobrata</i>	Hiba arborvitae	Medium	No	Horticultural interest. Neat plant that is not well known. Quite adaptable, just needs well-drained soil.
<i>Tsuga canadensis</i>	Eastern hemlock	Large	Yes	One of the most grand species of evergreens, especially old-growth specimens. PA's state tree. Unfortunately, the exotic insect hemlock woolly adelgid requires an active plant health care program if planting or maintaining high value specimens.
<i>Tsuga caroliniana</i>	Carolina hemlock	Small/ Medium	Yes	Horticultural interest. Relic species of the southern Appalachians. As with Eastern hemlock, very susceptible to the insect pest Hemlock Woolly Adelgid.

Pest Alert

United States
Department of Agriculture

Forest Service

Northeastern Area
State and Private Forestry

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Hemlock Woolly Adelgid

Native to Asia, the hemlock woolly adelgid (*Adelges tsugae*) is a small, aphidlike insect that threatens the health and sustainability of eastern hemlock (*Tsuga canadensis*) and Carolina hemlock (*Tsuga caroliniana*) in the Eastern United States. Hemlock woolly adelgid was first reported in the Eastern United States in 1951 near Richmond, Virginia. By 2005, it was established in portions of 16 States from Maine to Georgia, where infestations covered about half of the range of hemlock. Areas of extensive tree mortality and decline are found throughout the infested region, but the impact has been most severe in some areas of Virginia, New Jersey, Pennsylvania, and Connecticut.



FIGURE 1.—Hemlock woolly adelgid ovisacs.

Hemlock decline and mortality typically occur within 4 to 10 years of infestation in the insect's northern range, but can occur in as little as 3 to 6 years in its southern range. Other hemlock stressors, including drought, poor site conditions, and insect and disease pests such as elongate hemlock scale (*Fiorinia externa*), hemlock looper (*Lambdina fiscellaria fiscellaria*), spruce spider mite (*Oligonychus ununguis*), hemlock borer (*Melanophila fulvogutta*), root rot disease (*Armillaria mellea*), and needle rust (*Melampsora parlowii*), accelerate the rate and extent of hemlock mortality.

Hosts

The hemlock woolly adelgid develops and reproduces on all species of hemlock, but only eastern and Carolina hemlock are vulnerable when attacked. The range of eastern hemlock stretches from Nova Scotia to northern Alabama and west to northeastern Minnesota and eastern Kentucky. Carolina hemlock occurs on dry mountain slopes in the southern Appalachians of western Virginia, North and South Carolina, Georgia, and Tennessee. Eastern hemlock is also commonly planted as a tree, shrub, or hedge in ornamental landscapes. At least 274 cultivars of eastern hemlock are known to exist.