2019-40

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Standard Right-to-Know Law Request Form

Good communication is vital in the RTKL process. Complete this form thoroughly and retain a copy; it is required should an appeal be necessary. You have 15 business days to appeal after a request is denied or deemed denied.

SUBMITTED TO AGENCY NAME: _____CALN TOWNSHIP, CHESTER COUNTY, PA_____(Attn: AORO)

Date of Request: ___April 9, 2019_____ Submitted via: XX Email ☐ U.S. Mail ☐ Fax ☐ In Person

PERSON MAKING REQUEST:

Name: __CHERYL C. SPAULDING_____ Company (if applicable): _____

Mailing Address: _____406 LLOYD AVENUE_____

City: _DOWNINGTOWN____ State: _PA_____ Zip: _19335__ Email: [redacted]

Telephone: [redacted] Fax: _____N/A_____

How do you prefer to be contacted if the agency has questions? XX Telephone ☐ Email ☐ U.S. Mail

RECORDS REQUESTED: *Be clear and concise. Provide as much specific detail as possible, ideally including subject matter, time frame, and type of record or party names. Use additional sheets if necessary. RTKL requests should seek records, not ask questions. Requesters are not required to explain why the records are sought or the intended use of the records unless otherwise required by law.*

RE: GRIFFITH PROPERTY, KINGS HIGHWAY, CALN TOWNSHIP, CHESTER COUNTY, PA.
OWNED BY CALN TOWNSHIP.

COPY OF THE GRIFFITH PARK MASTER PLAN SUBMITTED TO CHESTER COUNTY IN 2008 AND/OR ANY ADDITIONAL DOCUMENTATION RELATING TO THE GRIFFITH PARK PLANS.

DO YOU WANT COPIES? XXYes, electronic copies preferred if available
XX Yes, printed copies (IF ELECTRONIC COPIES ARE UNAVAILABLE)
☐ No, in-person inspection of records preferred (*may request copies later*)

viewed additional in person 4/10/19

Do you want certified copies? ☐ Yes (*may be subject to additional costs*) XX No

RTKL requests may require payment or prepayment of fees. See the Official RTKL Fee Schedule for more details.

Please notify me if fees associated with this request will be more than XX $__25.00_____.

ITEMS BELOW THIS LINE FOR AGENCY USE ONLY

Tracking: _____ Date Received: 4/9/19 Response Due (5 bus. days): 4/16/19

30-Day Ext.? ☐ Yes ☐ No (If Yes, Final Due Date: _____) Actual Response Date: 4/9/19

Request was: ☑ Granted ☐ Partially Granted & Denied ☐ Denied Cost to Requester: $_____

☐ Appropriate third parties notified and given an opportunity to object to the release of requested records.

NOTE: In most cases, a completed RTKL request form is a public record.
More information about the RTKL is available at https://www.openrecords.pa.gov

Form updated Nov. 27, 2018

Kings Highway Park

Master Plan Report

Caln Township

Chester County, PA

November 2007

Kings Highway Park
Master Plan

Caln Township
Chester County, Pennsylvania
November 2007

Prepared for:
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This Project was partially financed by a grant from the Community Conservation Park Partnership Fund, under the administration of the Department of Conservation and Natural Resources, Bureau of Recreation and Conservation.

Kings Highway Park
Master Plan

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Chapter 1

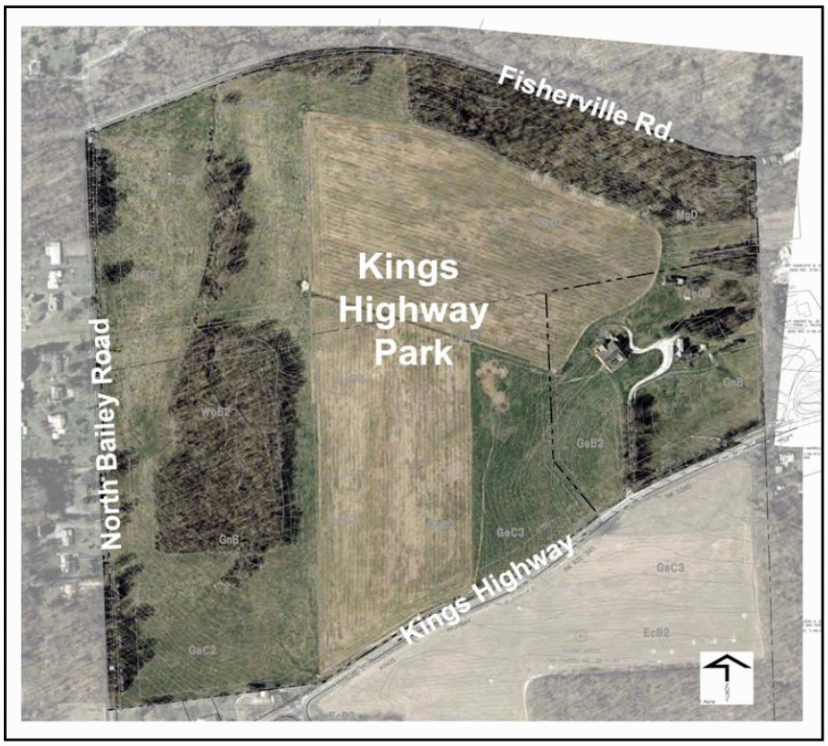
Planning the Park

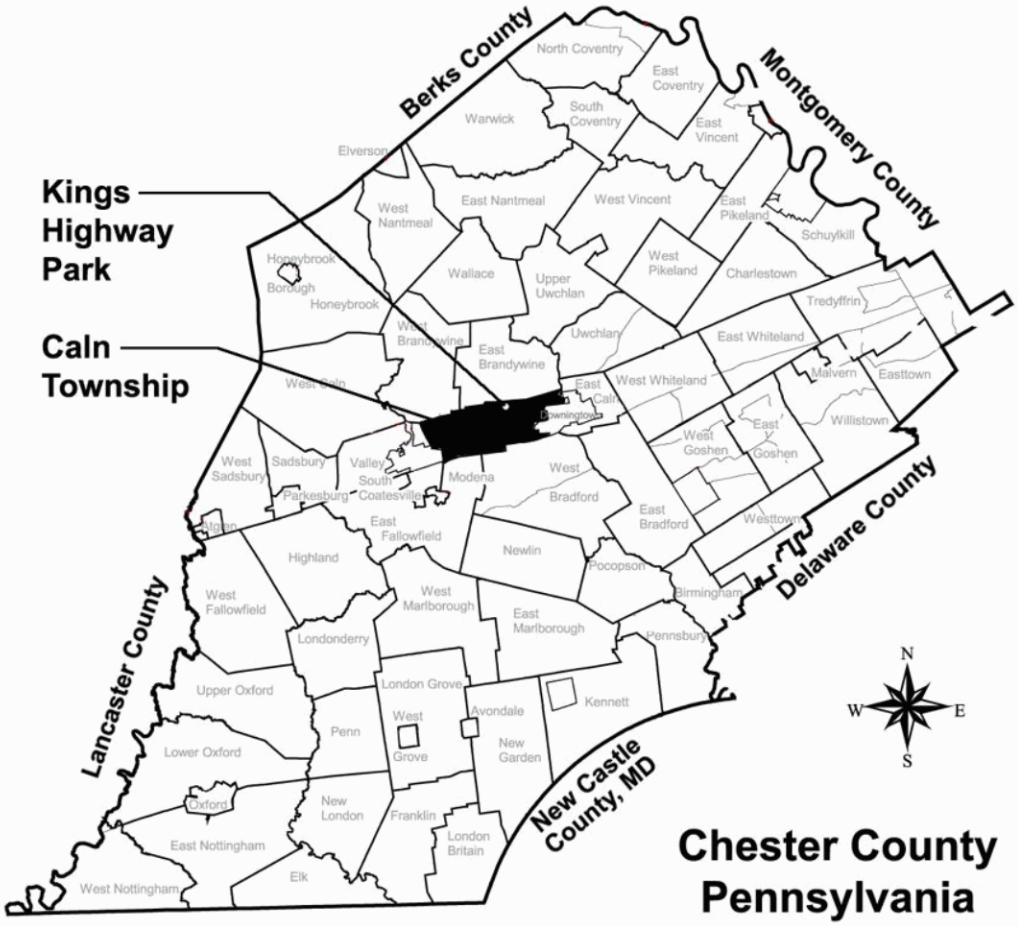
In 2002 Caln Township acquired one of the last remaining significant open space parcels in the Township along Kings Highway. The Kings Highway Park property, known as the Griffith Farm tract on Kings Highway, has tremendous potential to dramatically enhance recreation in Caln Township. The site is significant in terms of its size, resources, and recreation potential. This master plan will explore development opportunities for the 91 acre site. Consideration is given to existing and planned recreation facilities in the municipality to complement the entire park system while creating Kings Highway Park as a premiere recreation resource. The site presents opportunities to explore the varied natural resources, provides large open areas for informal recreation and special events, and creates an interesting enjoyable setting for trail activities.

The park site consists of three parcels, an 11 acre tract with farmhouse, barn, and related structures surrounded by agricultural fields, and two (2) 40 acre parcels with open agricultural fields, and woodlands. The park site is owned and maintained by Caln Township. The farmhouse has historical significance, including a stone in the home dated 1776. The property was purchased by Caln Township with a grant from Chester County for passive recreation pursuits.

Master Plan Location

The aerial photograph below shows the site on the north side of Kings Highway in Caln Township. The site is also bounded by North Bailey Road to the west, Fisherville Road to the north. The map on the following page locates Kings Highway Park within Caln Township and Chester County, Pennsylvania.





Community Background

In the early 1700's settlers from Calne, England were declaring their independence in the heart of what is today Chester County. Their settlement was given the "namesake" Caln, one of the original settlements in Chester County. By 1868 five other townships, the Borough of Downingtown and the City of Coatesville were molded out of this area and today's township boundaries were established. In January 1953, Caln Township became a Township of the First Class.

Caln Township 'In the Heart of Chester County' is a suburban community with four parks: Caln Municipal Park, Lloyd Park, Caln Park West, and Dawkins Park. Caln Municipal Park is developed with pavilions, ball fields, volleyball courts, tennis courts, a roller hockey rink, and play areas for children. The other three parks are not nearly as developed. Caln Park West offers only ball fields and play equipment, while Dawkins Park has basketball courts, pavilions, and play equipment. Currently, the Township is in the process of constructing the first phase of Lloyd Park, which is to be developed for park, open space, and municipal uses. The Township recently acquired

Ingleside Golf Course, with 18 holes of play, to add to the recreation facilities offered to the public.

The population of the municipality did not change significantly in the last decade with a 0.6 percent decrease in population. Population projections from the Chester County Planning Commission suggest slight population growth in the municipality through the year 2020. The U.S. Census 2000 population of 11,916 includes 3,238 children and youth ages 19 years and younger and 4,748 adults between the ages of 20 to 44 years old. Together these age groups encompass 69-percent of the municipal population. There are 1,315 adults over 65 years old, approximately 11-percent of the total municipal population. The median age of the municipality is 35.9 years old. These statistics illustrate the need to provide leisure facilities for families and youth.

Caln Township Parks and Recreation Board

"The Caln Township Parks and Recreation Board is composed of seven volunteer members, who are appointed by the Board of Commissioners. The Parks Board was created to advise, and promote recreation activities and help maintain the public parks within Caln Township."

Source: Caln Township Website

Demographics

Population Statistics[1]:

- **2000 Population:** 11,916: 2,607 persons age 14 years old and younger. 1,315 persons 65 years old and older
- **Gender:** 50.6 percent male and 49.4 female
- **Race/Ethnicity:** 78.8 percent white, 15.8 percent African American
- **Median Age:** 35.9 years old, younger than Chester County's median of 36.9
- **Population Growth:** 0.6 percent or 81 person decrease in population between 1990 and 2000
- **Population Projections:** 2010: 13,300 and 2020: 14,750 per Chester County Planning Commission

Households and Housing:

Family Households: 3,066 or 70.3 percent

Persons per Household: 2.60 persons

Owner Occupied: 72.3 percent

Housing Units: 4,535

Median House Value: $118,800

Socio-Economic Characteristics:

Per Capita Income: $25,494

[1] US Census

Median Household Income:	$60,198
Families in Poverty:	3.6 percent, higher than Chester County's rate of 3.1 percent
Employment:	38.9 percent are employed in managerial/professional positions; 27.4 are employed in sales and office occupations, 13.3 percent in production, transportation, and material moving occupations, 7.7 percent in construction, extraction, and maintenance occupations, and 12.0 percent in service occupations. Only 0.6 percent are employed in farming, fishing, and forestry occupations.
Education:	89.1 percent of those over 25 have a high school diploma or higher; 28.2 percent have a bachelor's degree or higher.

Demographic Profile Summary:

Caln Township is a diverse community with approximately a 20% percent minority population. The Township is slightly younger and has a lower per capita income than the County as a whole. The median house value in Caln Township is well below the County at $118,800 to $182,500 in the County. High school diploma attainment levels are similar to the County as a whole, while the bachelor's degree attainment levels are much lower. There are close to twice the number of people 14 years old or younger (2,607) than over 65 years old (1,315) living in the Township.

Kings Highway Park Master Planning Process

The Kings Highway Park planning process included five parts:

1. Inventory and Assessment
2. Public Participation
3. Development of Conceptual Alternatives and Pre-Final Master Plan
4. Final Master Plan
5. Operations, Budget, and Management

1. Inventory and Assessment

The analysis of the site's natural resources and existing features guided the development of the master plan. Landscape architects and a recreation planner visited the park throughout the planning

process to evaluate the site characteristics and facilities, observe site opportunities, and understand the impact on the surrounding land uses. Chapter 3 – Resources of Kings Highway Park documents the findings of the inventory and assessment phase of the planning process.

2. Public Participation

To assure that the design for the park is community based, broad citizen input was critical to the planning process. Citizen input was gathered from three sources: a study committee, key person interviews, and public meetings. Findings of the public participation process are documented in Chapter 2 – Public Participation and Research.

Study Committee

The study committee was formed to guide the development of the park master plan and work with the design consultants. The committee met initially to establish goals for the park. The committee provided input throughout the planning and design process, and met five times: to review findings of the consultant team and guide the master plan through the design process.

Key Person Interviews

The consulting team conducted a series of key person interviews with key stakeholders in the community. Interviewees provided insight into potential park uses, local recreation needs, and ideas for park development.

Public Meetings

Two public meetings were held to provide public input into the planning process. The pre-final master plan was presented at the first public meeting, and a second public meeting was held with Township Commissioners to present the final design.

3. Development of Conceptual Alternative Designs

Two conceptual alternative designs for the Kings Highway Park were developed. The alternatives presented were composed to provide differing approaches to achieving the site goals and layout of the potential improvements. Following review of the alternative designs by the Study Committee, a Pre-Final Master Plan for Kings Highway Park was developed.

4. Final Design

The final design involved the preparation of detailed proposals for improvements to the park site, resource protection, and introduction of environmental education amenities. Detailed cost estimates and a phasing plan were also completed in this phase of work.

5. Operations, Budget and Management

Park operations are the most significant lifetime cost of a park. This plan includes recommendations for programs, staffing, and maintenance management. Park financing was explored with an emphasis on partnerships and alternative funding sources.

Conclusion

The Kings Highway Park Master Plan promotes a future for the park that respects and protects the sites natural setting while providing passive recreation opportunities. The park design provides opportunities for the enjoyment of the outdoors through the exploration of the woods, stream, meadows, wetlands, and environmental educational facilities. The park protects a tributary to Beaver Creek and the surrounding landscape, and is a natural oasis in an ever-growing suburban area. The plan provides a blueprint for the park which can be implemented in phases over time.

Chapter 2

Public Participation and Research

Public participation was a key component of the Kings Highway Park Master Plan planning process. Public participation was important for the following reasons:

1. Local residents, visitors, and Township and County staff have useful and insightful information to contribute to the development of a relevant plan.
2. It provides a forum in which concerns and ideas could be identified, aired, and addressed.
3. Stewardship, a sense of ownership, and trust are established through community interaction and involvement.

Public input was gathered by working with the study committee, completing key person interviews, and holding public meetings.

Public Participation Process

Study Committee

A Study Committee was formed to help steer the development of the master plan and work with the project consultants. The committee consisted of representatives of the Caln Township Commissioners, Caln Township staff, Caln Township Parks and Recreation Board, Caln Township Historical Commission members, residents, and neighbors to the park site.

The 91 acre site was purchased to provide Caln Township residents with a passive recreation facility to fulfill a variety of community recreation needs. With this goal as guidance, the committee provided input at the outset of the project by brainstorming additional goals and ideas for the park. The questions and discussions are outlined below:

Question No. 1: *What facilities and activity areas should be considered for development at the Park?*

- Multi-use trails – non-motorized.
- Disc golf course.
- Formal garden.
- Community garden.
- Continue farming – if sustainable.
- Special event area.
- Amphitheater – natural.
- Natural area and habitat.
- Fenced area for farm animals.
- Pond.
- Environmental education facilities.
- Picnic areas/pavilions.

- Playground – natural, fit to park character.
- Provide an area for weddings and receptions.
- Interpretive signs to explore the history of the site.

Question No. 2: *What concerns do you have about development of the Park site?*

- Safe vehicular access and park entrances.
- Security.
- Maintenance.
- Pipeline limitations.
- Structural integrity and maintenance concerns for the barn.
- Loss of wildlife.

Question No. 3: *What opportunities do you see regarding the Park development?*

- Maintain the scenic quality of the site.
- Continue the flavor of the surrounding architecture.
- Use of farmhouse for an on-site caretaker residence.
- Incorporation of the farm theme in the park.
- Re-use the barn for horse boarding.
- Maintain the agricultural theme. Incorporating sheep and goats can lend to the character and provide groundcover maintenance.
- The park can be dog friendly without fencing an area.
- Convert the farmhouse into a museum or a nature center.

General Information: *Considerations for the Park site.*

- Multi-use trails should be paved to accommodate walkers and bikers.
- Seniors are seen as a potential user group.
- Would like the park to be dedicated to passive recreation, without athletic fields or courts.
- Relating proposed features to the setting and architecture are important.
- Playgrounds should avoid bright colors and contain natural elements such as climbing walls.
- The barn and farmhouse on a separate parcel may be incorporated into the design.
- Additional gas lines are scheduled for installation within the existing right-of-way in the near future.

- A 90+ lot residential development is proposed southeast of the site.
- No public sewer or water is available.

The committee provided input throughout the planning process through review of the site analysis and alternative master plan designs.

Key Person Interviews

The consulting team conducted a series of key person interviews to obtain additional input regarding Kings Highway Park. Citizens and persons with specific insight into the park were contacted. Input was gathered from Chester County Planning Commission, Caln Township Historic Commission, Williams Gas Pipe Line Corporation, residents, and neighbors familiar with the site, and others.

General information about the Kings Highway site and the goals established were provided to the interviewees. Interviewees were questioned about ideas they had for passive and active recreation park needs in the community, environmental education opportunities specific to the park's location and region, and improvements they would like to see in Kings Highway Park. The interviews resulted in a variety of ideas and comments noted below:

Facility and activity area ideas:

- Passive recreation.
- Hiking/walking trails.
- Biking.
- Fitness trail.
- Amphitheater for summer concerts.
- Picnic areas.
- Bird/wildlife blind.
- Enhanced habitat to attract wildlife.
- Possible connection between Kings Highway Park and Bondsville Mill Park in East Brandywine Township.

Park site opportunities:

- Unique location in the center of the Township.
- Open space.
- Historic ties to the area.
- Woodlands.
- Central access.
- Existing farm buildings and homestead.

Park site and Park development concerns:

- Security.
- Destruction of the natural setting.
- Impact to neighbors.
- Cost.
- Lighting.
- Noise levels.
- Night time use, vandalism.

General Considerations:

- Possible connection to Bondsville Mill Park in East Brandywine along Fisherville Road.
- The Williams Gas Pipeline utility easement may be problematic.
- North Bailey Road is heavily used – people use it as a cut through to US 30.
- The residential neighborhood to the north is a mix of young and older families in single family homes.
- The Griffith Farm has historic significance in the region.

Public Meetings

Two public meetings were held to present project findings to the public and solicit input. The first meeting was held on June 6, 2007 to present an overview of the park master planning process, need assessment findings, and review the Pre-final Master Plan design for Kings Highway Park. The meeting was attended by 15 residents, three (3) neighbors, Caln Township Commissioners, Caln Township Park and Recreation Board members and members of the Study Committee. A discussion of the public meeting is outlined in Chapter 4 - Alternatives.

A second public meeting was held on October 11, 2007 to present the Final Master Plan to the Board of Commissioners and to receive input. The agenda provided an overview of the project and work completed to date as well as the presentation of the Final Master Plan. Discussion of the presentation is summarized in Chapter 5- Master Plan.

The final public meeting to present the Master Plan was held during a regularly scheduled and advertised Caln Township Board of Commissioners meeting. All public meetings were advertised locally through newspaper articles and notices encouraging citizens to attend and review the work in progress on the Kings Highway Park Master Plan.

Vision, Mission, and Goals for Kings Highway Park

The input from the public participation process was translated into a vision and mission statement and specific goals for the park. These guided the master plan and may continue to evolve as Caln Township works toward implementation.

Kings Highway Park

Vision Statement

Kings Highway Park is a natural resource based park in Caln Township. The park offers the people of Caln Township the opportunity to enjoy and appreciate the scenic beauty, solitude, and environmental features of a natural area close-to-home. The park offers a place for citizens to connect with nature in the great outdoors through recreational experiences such as walking, hiking, playing, rest and relaxation, wildlife watching, environmental education, and disc golf.

Mission Statement

Caln Township is dedicated to conserving and managing the natural features of Kings Highway Park while providing opportunities for citizens to experience nature and enjoy their free time. A primary goal of the Township is to foster the stewardship of the natural environment by providing and promoting opportunities for the citizens to engage in lifelong recreational pursuits in a natural environment. The Township is committed to managing the natural resources of this site with environmentally sensitive practices that will result in a safe, clean, and attractive community asset.

Goal 1: ***Develop a park that meets the passive recreation needs of Caln Township residents.***

Objectives:

- Create a year-round park that provides opportunities for passive recreation as well as enjoyment of the natural setting.
- Provide park amenities desired by the community.
- Provide facilities that appeal to citizens of all ages and abilities.
- Provide facilities to accommodate various group sizes.

Goal 2: ***Protect and preserve the natural resources of the site.***

Objectives:

- Enhance and protect the site's natural resources and habitat areas.
- Maintain the scenic quality of the site and homestead.
- Limit introduction of public uses that would conflict with resource protection.

- Enhance and protect the site's natural resources and habitat areas.
- Maintain the scenic setting of the property, especially along Kings Highway.
- Develop resource management strategies to address invasive species, over population of deer, and other issues.

Goal 3: ***Incorporate passive recreation and environmental education facilities desired by Caln Township residents.***

Objectives:

- Promote environmental education of the site's natural features encouraging respect and stewardship among users, neighbors, and the general public.
- Promote "green design" in future improvements.
- Provide a variety of self directed passive recreation opportunities that can be enjoyed by users throughout their lifetime.
- Maintain and reuse as possible the homested structures.

Kings Highway Park User Groups

Kings Highway Park will be a popular destination for many user groups. Primary among the user groups are residents that enjoy walking, outdoor enthusiasts who enjoy learning about nature and birding, school students, nearby residents, disc golf enthusiasts, and the general public. The pallet of natural resources and the park setting will make Kings Highway Park a popular destination for those who enjoy spending time outdoors.

Chapter 3

Resources of Kings Highway Park

Kings Highway Park offers diverse landscapes including natural areas, wetlands, agricultural fields and woodlands. This master plan was developed to provide a blueprint for the future of the site as a municipal resource based park. Through the planning process, an extensive inventory and analysis of the site was completed to gain an understanding of the site's natural resources. The inventory and analysis is critical for the following reasons:

- To evaluate the site's natural resources and determine appropriate protection and enhancement strategies.
- To evaluate the ability of the site's resources to sustain and thrive with the introduction of public use.
- To explore natural resources that contributes to the visitor's experience.
- Good design is born of good analysis.
- To become familiar with the context of the site and surrounding area.
- Development costs are greatly influenced by the ease of construction and compatibility of the proposed development with the natural systems of the site.

The Site Analysis Map, on the following page, documents the observations of site visits, conclusions of the site analysis, and information previously documented regarding the site. Existing information provided by Caln Township included digital survey and boundary line information from GIS mapping.

Site Description

Kings Highway Park is a 91 acre natural park located east of North Bailey Road, south of Fisherville Road, north of Kings Highway (PA Rt. 340), in the north central area of Caln Township. East Brandywine Township borders North Bailey Road on the northern portion of the site. The property is currently three parcels of land: two (2) 40 acre parcels with open agricultural fields and woodlands, and the Griffith homestead of 11-acres on a separate deed.

The primary ingress and egress to the park site is located on Kings Highway providing access to the Griffith Farm homestead. The existing site is primarily a mix of mature hardwood forest, meadows, and agricultural fields. An unnamed tributary to Beaver Creek flows north from seeps within the woodlands forming marsh and wet areas. A majority of the site is currently used for agricultural purposes growing field crops.

Surrounding Land Use

Eastern Boundary: An industrial concrete plant exists east of the Griffith homestead parcel. Various inlets, pipes, tractor trailers, outdoor stockpiles, and buildings occupy the site.

Western Boundary: Low density single family residential properties border the park to the west along North Bailey Road with mature woodlands.

Southern Boundary: Four single family residential properties border the southern property line at the intersection of Kings Highway and North Bailey Road. Caln Township owns the land on the south side of Kings Highway which is in agricultural use.

Northern Boundary: The Brandywine Chase, low density single family residential development is north of Fisherville Road, and dominated by mature woods.

Natural Resources

Water Resources

Wetlands, man-made ponds, and stream channels are regulated by the United States Army Corps of Engineers (USACOE) and the Pennsylvania Department of Environmental Protection (PADEP) and any encroachments, fills or crossing of these areas will require the proper State and Federal permits.

Streams – An unnamed tributary to Beaver Creek flows north crossing Fisherville Road through a 36" reinforced concrete pipe, where it joins Beaver Creek. Beaver Creek flows east along the north side of Fisherville Road, continuing through Caln and East Brandywine Townships to its confluence in the East Branch of the Brandywine Creek.

- Beaver Creek (north of Fisherville Road) is a Trout Stocking Fishery (TSF) stream known to support maintenance and propagation of fish species and additional flora and fauna which are indigenous to a warm water habitat. Migratory Fishes (MF) within the waters allow for passage, maintenance and propagation of anadromous and catadromous fishes and other fishes which ascend to flowing waters to complete their life cycle in a stream section downstream of this site. It is unclear whether this portion of the basin is Exceptional Value (EV) or High Quality- Cold Water Fishery (HQ-CWF), but in either case, impacts to the stream and possible wetlands on the site will be difficult to permit and the resources should be protected.

Wetlands – An online U.S. Fish & Wildlife Service-National Wetlands Inventory (NWI) search conducted for the site indicated the site had no known wetlands of special concern. During field visits seeps, springs, and wet areas were observed, suggesting the presence of wetlands. A detailed wetland study should be performed prior to any development within the park site.

Kings Highway Park Master Plan

Site Analysis

Caln Township
Chester County, PA
April 2007

PREPARED FOR:
Caln Township
253 Municipal Drive
Thorndale, PA 19372

PREPARED BY:
ysm Landscape Architects
19 South Newberry Street
York, Pennsylvania 17401
(717) 812-0999 phone
(717) 812-0768 fax
www.ysmla.com

NORTH
1 Acre

Scale: 1" = 100'-0"
0 100 200 300

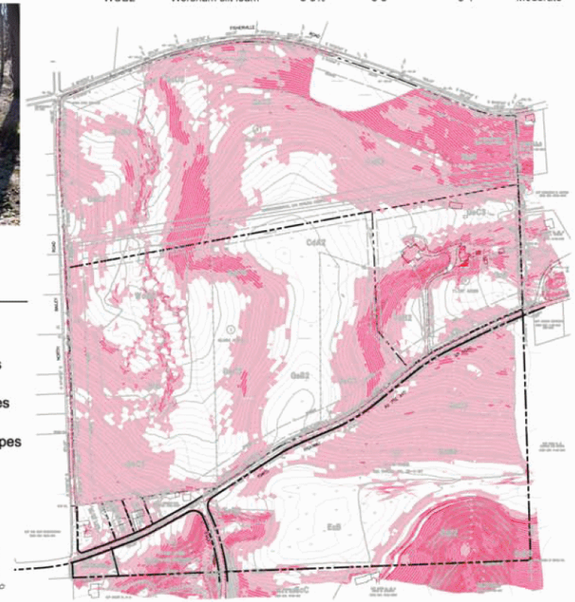
SOILS LEGEND

Symbol	Soil	Slopes	Depth to Bedrock (ft.)	Water Table Depth (ft.)	Erosion Potential
CDA2	Chester silt loam	0-3%	5-6	5+	Moderate
ECB	Edgemont channery loam	3-8%	2-6	5+	Low
ECB2	Edgemont channery loam	3-8%	2-6	5+	Moderate
ECC	Edgemont channery loam	8-15%	2-6	5+	Low
ECC2	Edgemont channery loam	8-15%	2-6	5+	Moderate
ECD3	Edgemont channery loam	15-25%	2-6	5+	Severe
ECE2	Edgemont channery loam	25-35%	2-6	5+	Moderate
EDD	Edgemont very stony loam	8-25%	2-6	5+	Low
EDF	Edgemont very stony loam	25-60%	2-6	5+	Low
GEB2	Glenleg channery silt loam	0-3%	3-5	5+	Moderate
GEC2	Glenleg channery silt loam	8-15%	3-5	5+	Moderate
GEC3	Glenleg channery silt loam	8-15%	3-5	5+	Severe
GED3	Glenleg channery silt loam	15-25%	3-5	5+	Severe
GNB	Glenville silt loam	3-8%	3-6	1-1.5	Low
MGD	Manor loam	15-25%	2-7	5+	Low
WOB2	Worsham silt loam	3-8%	3-5	0-1	Moderate

SLOPE LEGEND

- 0% to 7.99% Slopes
- 8% to 14.99% Slopes
- 15% to 24.99% Slopes
- 25% and Greater Slopes

NORTH
Graphic Scale
0 100 200 400



If the project includes any impacts to streams or wetlands, further coordination with the United States Fish and Wildlife Service (USFWS) and the Pennsylvania Department of Environmental Protection (PA DEP) will be necessary.

Land Resources

Vegetation – The land cover vegetation varies throughout the park and provides habitat for various species of mammals and birds. Meadows exist as well as agriculture fields, riparian corridor vegetation, agricultural fields, and possible wetland areas.

- Open Fields and Meadows – approximately 23 acres of an open meadow surround the woodland area on the western portion of the site along North Bailey Road. These fields are periodically mowed and are dominated by grass species. Within these fields are seeps and wet areas creating the unnamed tributary to Beaver Creek north of Fisherville Road. Agriculture activities are not conducive due to the periodic wet nature of these fields.

- Woodland and Edges – The western meadows surround a stand of mature maple-oak woods. Dominant species found in this area included *Quercus rubra* (red oak), *Q. alba* (white oak), *Q. strobes* (chestnut oak), *Acer rubrum* (red maple), and *Pinus strobes* (white pine). These species are limited to a rather thin band around the edges of the mature woods. An additional 10 acres of mature oak/beech woodlands exist along Fisherville Road in the northeast section of the site with other dominant species found (besides those listed above) include *Fagus grandifolia* (American beech), and *Carya* sp. (hickory). A forest management plan should be developed to guide the protection and management of the woodland resources of the park site.

- Agricultural Fields – Currantly agricultural fields in field crops such as corn dominate approximately 30 acres on the site along the center ridge high point and eastern sections of the site north of the Griffith homestead.

- Invasive Species – As with most park sites, the threat of invasive species is a constant concern and resource management issue. The invasive plants present tend to be restricted to the margins of the mature woods, and a section along the unnamed tributary north of the gas pipeline. Invasive plants found on the site included *Alliaria petiolata* (garlic mustard), *Elaeagnus umbellate*, *Rosa multiflora*, *Prunus avium*, and *Celastrus orbiculatus* (Oriental bittersweet). The site does not appear to have significant problems with invasive plants at this time.

  Aggressive competitors for space and nutrients, invasive species crowd out native species and cause the decline of native wildflowers, grasses, and other plants. They

adversely affect many native animal species, which depend on a diverse and healthy native flora for their survival. Once invasive species get a foothold on a site they often propagate rapidly, taking over and covering valuable land and natural resources. The longer invasive species occupy a site the more costly and time consuming it is to eradicate them and reclaim the land.

- Riparian Corridor Vegetation – Riparian corridor vegetation occurs along the unnamed tributary to Beaver Creek which traverses the site south to north. Riparian buffers provide important landscape functions to protect water quality, and should be maintained and enhanced.

Wildlife Habitat – The park site offers diverse landscapes for various species of mammals and birds. The site is well suited for bird watching and attracts hawks and many passerine and migratory species. Neighbors have noted numerous deer occupying the site.

The site is home to many small and large mammals that are typically found throughout eastern Pennsylvania. Species noted at the site include squirrels, rabbits, foxes, raccoons, and other small mammals. Any park which has cultivated or large mowed areas, Canadian geese may seek refuge and the populations need to be managed to prevent degradation of the site.

Threatened and Endangered Species – An online Pennsylvania National Diversity Inventory (PNDI) search conducted for the site indicated the site had no known impacts on species of special concern. If the project includes any impacts to streams or wetlands, further coordination with the USFWS and the PA DEP will be necessary.

Soils – The U.S. Department of Agriculture (USDA), Soil Conservation Service, Soil Survey for Chester County, Pennsylvania indicates the site has sixteen soil classifications. The majority of the site consists of Edgemont channery loam, and Glenleg channery silt loam with slopes ranging from 0 to 25 %. The site soils are stable, well drained with adequate depth to bedrock with few development restrictions. The low-lying channels, stream and wetland areas do contain soft, periodically wet soils. The Site Analysis Map on page 3-3 identifies the locations of soils.

Man-Made Resources and Influences

Transportation Routes and Access

Roadways surround the Kings Highway Park. Main access roadways in the area of the site include:

Kings Highway – This is a state collector road (PA 340) carrying traffic traveling in an east – west direction in Caln Township. Kings Highway Park fronts on Kings Highway for approximately 3,600–feet, with a posted speed limit of 45 miles per hour, along the southern property line. Adequate sight distance is available for approximately 800 feet along the Griffith homestead frontage. Due to road geometry there is not adequate sight distance for a driveway access point along the remaining length of Kings Highway.

North Bailey Road – This road carries local traffic in a north-south direction between Kings Highway to Fisherville Road, along the western edge of the park site. There are approximately 2,400-feet of frontage, with a posted speed limit of 25 miles per hour. Adequate sight distance is available from the site between Kings Highway and 1,200 feet north with bank and vegetation removal. The next 600 feet north has adequate site distance, with the remaining 1,000 feet of road frontage without adequate site distance due to a high point in the road. Residents note heavy traffic of speeds in excess of the speed limit on North Bailey Road in the area of the park site.

Fisherville Road – This road carries local traffic in an east-west direction from North Bailey Road to Bondsville Road along the northern property line of the parcel. There is approximately 3,600 feet of frontage with only 600 feet of adequate site distance from North Bailey Road to the east. The posted speed limit is 25 miles per hour; Fisherville Road is used as a cut through for vehicles within the Township to US 30.

Utilities in the Area of Kings Highway Park

Public utilities are sporadically available in the area of Kings Highway Park including public water, public sewer, electric, and gas service.

Water – There is no public water available at the site.

Sewer – There is no public sewer available at the site.

Electric – PECO Energy supplies electric service to the area residences.

Gas – A transcontinental gas pipeline traveling east and west, with a 100' wide easement exists on the park site owned by Williams Gas Pipe Line Corporation. Information from the Williams' website noted the limitations of the 100' utility easement will prohibit construction of permanent structures and

planting trees in the easement area. Williams must have unrestricted entry and access to the easement for regular maintenance and emergency situations. Driveways, roads, and trails must cross the easement as close as possible to 90 degrees. The park design must respect these limitations associated with the gas line.

Structures

The primary structures are the buildings associated with the Griffith homestead. The main home is complemented with a carriage house, barns, sheds, and other structures associated with the previous farming activities. Architectural and structural analysis of the structures has not been completed as part of this master plan. The following narrative generally describes the existing structures and buildings on site:

The Griffith Home – The main residence is a large stately three-story stone structure, four bays wide and two deep with several porches and an addition in the rear. The home is well maintained and manicured and is in good condition. The homestead does not meet the accessibility requirements of the ADA.

Barn – Located across the drive from the residence is a large two story wood bank barn built into the hillside. As a traditional bank barn it was used for hay and equipment storage on the upper level and housed animals on the lower level with a walk out pasture area for the animals to exercise. The barn is currently used for storage by the Township.

Garage/Sheds – Located behind the Griffith homestead within the field area is a small garage for equipment storage and a shed which probably housed chickens at one time. A third garage/shed is a stucco cinder block structure use for storage of farm equipment and materials.

Springhouse – A small stucco building most likely a spring house/cold cellar is located in the yard east of the homestead. The taller portion of the structure may have been a smoke house. The building has historic significance dating back to an era of self-sufficiency in which all food was grown and processed on-site for the family.

Summary of Site Analysis Findings

Site analysis was performed for the Kings Highway Park site. The site analysis findings are keyed to the Site Analysis Map on 3-3. Major features of the park site are outlined below.

- Total park acreage is 91 acres.
- Mixture of land uses; agriculture, mature woodlands, homestead, and meadows.

- Access into the site is from the Griffith Homestead tract via a paved tree lined entrance drive off of Kings Highway.
- The homestead is not occupied at this time, appears to be in good condition, and does not meet ADA requirements presently.
- A high point in the center of the site provides a 360 degree unobstructed views of the entire park.
- The woodlands in the northeast area along Fisherville Road have steep slopes ranging from 15-25 percent.
- Overall slopes on the site vary from 0 to 25-percent, with a majority of the site ranging from 0-15 percent.
- The area is dominated by mature maple-oak woods. Dominant species found are *Quercus rubra* (red oak), *Q. alba* (white oak), *Q. montana* (chestnut oak), and *Acer rubrum* (red maple).
- The perimeter of these woods included some succession and invasive vegetation, limited to a rather thin band around the edges of the mature woods.
- Adequate site distance is achievable along north Bailey Road, a portion of Fisherville Road and on Kings Highway in the area of the existing homestead entrance.
- Adjacent residential properties along Kings Highway have direct views into the site.
- Large open agriculture fields dominate approximately 35 acres of the site.
- Runoff discharges into the unnamed tributary to Beaver Creek on the western third of the site.
- Erosion is present along portions of the unnamed tributary.
- Wetlands may be present in some seep and wet areas.
- A major gas pipeline and associated easement traveling east and west bisects the site.

Conclusions

The site analysis provided valuable information that guided the final master plan for the Kings Highway Park. Conclusions include:

General Conclusions:

- The existing homestead entrance offers the best opportunity for access into the site.
- The homestead areas lack of vegetation, gentle slope, good soils, convenient access, and significant views provide good development opportunity.

- The woodlands in the northeast are steeply sloped and of high habitat value, and provide a premier example of a mature natural succession forest.
- The terrain is suited for an amphitheater to take advantage of the existing gently slopes around the high point.
- The ridges and valleys offer diverse terrain and setting.
- The soils throughout the site appear to be well suited for recreational trail use.
- Township personnel should be educated on the invasive species that are present on the site and recommend removal, primarily by physical removal before seed dispersal.
- Adjacent residential properties must be respected in the design.
- The tributary to Beaver Creek should be protected and preserved. Additional buffers should be established to fortify the stormwater runoff. Controlled public access to this sensitive area should be considered for environmental education opportunities without degradation to the resource.
- Adjacent roads are narrow (20' wide) with limited shoulders. Vehicular access should consider sight distance and not disturb steep slopes or sensitive stream/wetland areas. Safe ingress and egress to the site must be provided.
- Connections to surrounding residential properties should be explored.
- The existing gas line easement traversing the site should be considered for trail/greenway connections.
- Pedestrian circulation routes must meet the requirements of the ADA to provide like opportunities for physically challenged persons to experience the natural areas.

Resource Protection:

- Pubic access to the 91 acre park should be carefully balanced with resource protection objectives.
- The Park's natural areas should be protected and conserved.
- Maintenance practices (mowing, clearing) should involve Best Management Practices to enhance water quality.
- Steep slopes but must be protected and respected and any improvements must minimize erosion and align with the requirements of the ADA.
- Invasive species should be eradicated to promote native vegetation and habitat for wildlife.
- Wildlife habitats should be preserved and enhanced through planting of native vegetation to supply food and shelter.
- Connectivity of the forest vegetative cover should be promoted, as possible, to bridge the gap for wildlife

movement and minimize edge areas where invasive species could be introduced.

- Involve surrounding landowners in stewardship initiatives.

A review of findings of the site analysis was presented to the Study Committee on February 7, 2007. Upon presentation of the findings of the site analysis a general discussion followed with the following comments offered.

General Discussion:

- Is there area behind the barn appropriate for development of a parking area and playground? This was seen as a possible location for these facilities.
- It was noted the concrete block garage could be removed.
- The possible park entrance drive locations were discussed. The study committee felt an entrance off of North Bailey Road would be problematic as it is difficult to turn left onto Kings Highway from North Bailey Road.
- Additionally, a drive located in close proximity to the four existing homes that back up to the park site with frontage on Kings Highway is not preferred.
- The preferred entrance drive location is to use the existing homestead drive for the park property.
- It was noted that the width of the existing drive opening between the stone piers is 17', too narrow to accommodate two-way public use. A one drive in, one drive out scenario using the existing drive for one direction was suggested.
- Potential Penn DOT limitations of the drive were questioned.
- The suggestion of a visual buffer along the North Bailey Road frontage was not seen as necessary as the views to the park are preferred.
- There is debris from buried fence on the park site.
- The fence traversing the center of the site from north to south will be removed by Caln Township.
- The septic system for the homestead is located in front of the house. The system has failed.
- There is interest in Frisbee golf for the park site and a 9-hole course could possibly be accommodated.
- Noise from Kings Highway should be considered when locating the amphitheater.
- If the homestead parcel is incorporated into the park design, reuse of the house for a small historic museum was suggested.
- Currently the house is being used by the parks department and for storage and the barn is not being used. Both of these structures will require repairs to bring to good working order.

Chapter 4

Alternative Designs

Introduction

The two conceptual alternatives for the Kings Highway Park site have been designed to achieve the following goals:

- Develop a park for passive recreation and the enjoyment of the natural setting.
- Maintain the scenic quality of the site and homestead.
- Incorporate passive recreation and environmental education facilities desired by residents.
  - Trails
  - Amphitheater
  - Playground

Conceptual Alternative A

Guiding Concept – Offer public access to a diverse variety of passive recreation opportunities and environmental education and special events space to serve people of differing interests and abilities. Maintain the visual aspects of the historic farmstead landscape along Kings Highway. Trails traverse the site to explore the natural and cultural resources retained and enhanced for educational and leisure enjoyment.

Primary access to the site is from Kings Highway, North Bailey Road, and Fisherville Road with new parking areas introduced adjacent to all three roads. Picnic pavilions, open lawn, and restrooms are established on the site for the convenience of users. The design responds to the site's characteristics and opportunities as described below:

Griffith Homestead Hub Area -

- The main feature is the homestead building for housing park staff, programming office, and meeting space.
- A divided, tree lined entrance drive leads to the homestead off of Kings Highway.
- A youth playground, small event lawn, and medium pavilion provide an area to congregate, picnic, and enjoy the outdoors.
- Retains the barn for storage and maintenance equipment.
- Parking for 125 spaces is provided north of the barn with a drop off area and an information kiosk providing central access.
- A seven (7) acre event lawn is located at the high point of the site.

- One (1) small and one (1) large pavilion provide for gathering in the center of the lawn areas, near the high point with views to much of the park.
- Lawn/meadow areas with trails throughout the center of the site offer opportunities for exploring the agricultural areas of the park, as well as enjoying the views.
- An amphitheater is tucked into the hillside north of the homestead hub for concerts in the park, and special events throughout the year.
- The existing vegetative buffer is maintained between the site and Fisherville Road to the north.
- A series of paved trails are located throughout the site for pedestrian use, primarily walking and jogging.

Adjacent to North Bailey Road -

- A parking area with 16 spaces to provide access into the site is located near the southwest corner of the property.
- A vegetative buffer is provided between the existing homes along Kings Highway and the park in the southwest corner of the site.
- A small pavilion for picnicking, gathering and education activities is provided adjacent to the woodlands and wetland area along paved trails.

Adjacent to Fisherville Road -

- A parking area with 18 spaces provides access into the site and the 9-hole disc golf course.
- A 9-hole disc golf course traversing a variety of landscapes, from woodlands to open lawn areas is provided in the northwest portion of the site.
- A small pavilion is provided near the disc golf course for user gatherings and informal use.
- An observation platform is overlooking the wetland interpretative area associated with the unnamed tributary to Beaver Creek and surrounding area north of the gas pipeline easement.
- Paved trails traverse the site to explore the natural and cultural resources retained and enhanced for educational and leisure enjoyment.

Kings Highway Park

Conceptual Alternative A

Caln Township
Chester County, PA
May 2007

Scale 1" = 100'-0"

PREPARED FOR:
Caln Township
253 Municipal Drive
Thorndale, PA 19372

PREPARED BY:
ysm
Landscape Architects
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York, Pennsylvania 17401
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www.ysm.com

Conceptual Alternative B

Guiding Concepts – The guiding concepts of Conceptual Alternative B are similar to Conceptual Alternative A. Offer public access to a diverse variety of passive recreation opportunities and incorporate environmental education features and areas for special events. The focal point is the Griffith Homestead Hub off of Kings Highway, with a formal wedding garden and a community lawn to enhance the user enjoyment of the site.

Primary access into the site is from Kings Highway leading to the parking lot north of the barn. Additional site access into parking areas is provided off of North Bailey Road and Fisherville Road. Trails traverse the site and picnic pavilions, open lawn, an amphitheater, and restrooms are established on the site for the convenience of users as described below:

Griffith Homestead Hub Area -

- A divided, tree lined entrance drive leads to the homestead off of Kings Highway.
- A formal wedding garden with a gazebo and large pavilion for outdoor weddings, family reunions, and special events is located behind the homestead structures.
- The homestead structure provides opportunity for catering support to prepare food service for weddings and special events in the garden.
- Retain the barn for storage and maintenance equipment for the park staff.
- A 92 space parking area is north of the barn with a drop off area providing central access to the site.
- A three (3) acre community event lawn is located at the high point of the site with a band shell for concerts in the park and special events.
- An open lawn area large enough for informal play or leisure activities is maintained near the high point.
- A medium pavilion for group use is located between the playground and the community event lawn.
- A youth playground, tot lot, and a medium pavilion provide a play destination for families with young children.
- The existing vegetative buffer is maintained between the site and Fisherville Road to the north.
- A series of paved trails are located throughout the site for pedestrian use, primarily walking, jogging and fitness.

Adjacent to North Bailey Road -

- A 16 space parking area provides access into the site from the west near the Williams Gas Pipeline easement.

- A vegetative buffer is provided between the existing homes along Kings Highway and the park in the southwest corner of the site.
- An observation platform is located within the woodlands overlooking the wetland interpretative area associated with the unnamed tributary to Beaver Creek and surrounding area.
- Trails lead to the high point of the site where a community lawn and band shell are provided.
- A small pavilion for picnicking, gathering and education activities is provided adjacent to the woodlands and wetland area along paved trails.

Adjacent to Fisherville Road -

- An 18 space parking area provides access into the site from the north.
- A small pavilion is stationed east of the parking lot for access to the many paved trails traversing the park site.
- A 9-hole disc golf course traverses a variety of landscapes, woodlands, and open lawn areas just south of Fisherville Road.
- Wetland enhancements with a boardwalk crossing to explore the ecosystem in the northwest corner of the site.
- Paved trails traverse the site to provide walking and jogging opportunities.

Kings Highway Park
Conceptual Alternative B

Caln Township
Chester County, PA
May 2007

NORTH
1 Acre

Scale 1 = 100'-0"
0 100 200 300

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Thorndale, PA 19372

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Study Committee Meeting to Review the Conceptual Alternative Plans

A study committee meeting was held on May 2, 2007 to present and discuss the two conceptual alternative designs for Kings Highway Park and receive input. Following the presentation the meeting was opened for discussion with the following comments summarizing the meeting:

- Generally, the committee preferred a combination of Conceptual Alternative A and Conceptual Alternative B.
- The main entrance at the existing homestead drive as shown is preferred. Adding vegetation to line the east side of the drive was suggested.
- The parking layout shown on Conceptual Alternative A was preferred as the curved layout seemed to fit better with the topography and natural setting of the site.
- The development of an amphitheater was preferred over a band shell. Consider pedestrian and vehicular access for performers and equipment to the amphitheater.
- The re-alignment of the drop-off walkway to the amphitheater was suggested to be more direct.
- A combination of formal wall seating (200 seats) and lawn seating was preferred in the amphitheater area.
- The wedding garden was well received and should remain on the master plan.
- The steps accessing the homestead structure should be eliminated and a fountain was suggested for the center of the garden area.
- The large pavilion in the wedding garden should be developed with restrooms.
- The playground should be located just to the west beyond the parking, south of the gas right-of-way.
- The open view of the home, barn and rolling hills from Kings Highway should be retained as un-interrupted as possible in the design.
- The 9-hole disc golf course should be located generally as shown on Conceptual Alternative B with additional spatial separation from the amphitheater. The associated parking and small pavilion were seen as appropriate.
- The boardwalk and environmental education station area shown on Conceptual Alternative B was well received.
- The small pavilion located on Conceptual Alternative A south of the gas right-of-way and west of the park was seen as the best location for a stand-alone pavilion.

- The central parking area along North Bailey Road and access trail/boardwalk to the small pavilion shown on Conceptual Alternative B was not seen as necessary as the preferred pavilion location was up-hill from that location.
- The large pavilion on Conceptual Alternative A, near the amphitheater was preferred and should be developed to have restroom facilities.
- Interpretative signs and an information kiosk at the vehicular drop off area were favorably viewed.
- The parking area and small pavilion on Conceptual Alternative A, near the North Bailey Road/Kings Highway intersection was not desired.
- Pasture fencing on the west side of the drive was not seen as necessary.
- It is assumed that the homestead structure will be used as a tenant house or some other function that does not require access from the park site by the public.

Pre-Final Master Plan

The Pre-Final Master Plan is a marriage of the two alternative designs, taking opportunities from each, to create one cohesive plan, expanding opportunities for diverse recreation activities, natural resource enhancements and protection, and exploration of the site's natural areas. Guided by the Study Committee discussion of the two conceptual alternatives, the Pre-Final Master Plan includes the following:

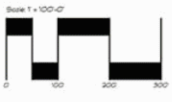
- A primary access point for the park is from Kings Highway utilizing and widening the former homestead entrance and preserving the view shed to the park from Kings Highway.
- The site is characterized by large areas of open grass and wildflower meadows, multiple paved loop trails, preservation of the existing woodland stand, and several passive recreation facilities.
- An age-segregated playground is located on the high point of the site near a 135-space parking area and a small picnic pavilion and gathering area.
- A community amphitheatre accommodating 200 spectators on terraced seating is situated in the northern portion of the site, facing the mature wood stand in the northeast corner of the site. Lawn overflow seating is accommodated on the natural grade surrounding the amphitheatre.
- A large pavilion with restrooms is located near the amphitheater.
- The barn and homestead are preserved.

- A formal wedding garden and gazebo are developed north of the homestead.
- A large pavilion with restrooms is developed at the wedding garden to accommodate receptions and large gatherings.
- A 9-hole disc golf course occupies the northwest corner of the site off of Fisherville Road with a small 18-space parking area and pavilion.
- The woodlands and stream corridor on site have been enhanced with riparian corridor plantings.
- Two boardwalks cross the stream and an environment education station is located in the southern portion of the woodlands.
- A series of trails traverse the site to connect activity areas and to explore the site's natural and cultural resources.
- An 18 space parking area with a small pavilion is located off of Fisherville Road.
- The existing vegetative buffer between the site and the existing residences in the southwest corner is maintained and enhanced.

Kings Highway Park

Pre-Final Design

Caln Township
Chester County, PA
June 2007



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Public Meeting to Review the Pre-Final Master Plan

A public meeting was held on June 6, 2007 to present the Pre-Final Master Plan to the general public and receive input. The meeting agenda provided an overview of the planning process, work completed to date, and presentation of the Pre-Final Master Plan. Members of the Study Committee and residents attended the meeting. Following the presentation, the meeting was opened for discussion with the following comments summarizing the meeting:

- Show a mowed connection to the trail system from North Bailey Road through the meadow planting.
- Consider retaining some fenceing along North Bailey Road and Kings Highway and fencing the perimeter of the park along those corridors.
- There are known to be seeps associated with the southern end of the stream corridor on site. Identify and protect the public from seep hazards in the park.
- The Williams Gas Pipeline is installing a new 42" gas line adjacent to the current gas line. Protect all drinking water wells on site from the path of the line and contamination from the line. (Note: The new gas line project was abandoned by Williams subsequent to this meeting.)
- Only minimum low-level and security lighting are prefered in the park. Consider motion sensored lights to reduce energy use and decrease light polution affecting neighbors.
- Lights will be necessary between the amphitheater and parking area for evening prformances.
- Concern was raised for wildlife preservation in the park once it is developed and there is public use of the site. The site currently is home to numerous wildlife including families of deer, fox, and skunk.
- The disc golf course on site was questioned. There is concern that it could attract more active recreation facilties and the passive character of the site would not be preserved in the long-term.
- There is concern for inappropriate use of the paved trail system by motor bikes leading to site degredation and noise pollution in the neighborhood. Consider aggregate trails in some areas as a bicycle and motor-bike detterant.
- The park access has poor vehicular site distance to the left when exiting the park.
- There was concern that maintanence for the park's meadows could lead to control burning and smoke pollution in the neighborhood.

- The use of the amphitheatre on site was questioned. There is concern that it does not fit with the park's passive character and project goals. Consider a policy to limit the size and amount of events that take place.
- Eliminate duplicate trail loops on site and minimize disturbance of the woodlands.
- A security gate or restricted access was suggested for the 18-car parking area off of Fisherville Road to deter inappropriate use.

Chapter 5

Kings Highway Park Master Plan

The Master Plan for Kings Highway Park presents the overall vision for the property, the physical configuration of facilities, and strategies for resource enhancements. The Kings Highway Park Master Plan was developed in its final form after careful consideration of input from the study committee, public meetings, key person interviews and the general public received throughout the planning process. The following facilities and activity areas are proposed for Kings Highway Park. The Kings Highway Park Master Plan is provided on page 5-4.

Park Design Concept

The design for Kings Highway Park develops facilities and creates areas that target community passive recreation needs, consider and accommodate special events, and provide opportunities for interpretation of the site and its natural resources. The design seeks a sustainable balance between public use and protection of natural resources. The design provides facilities for families, seniors, adults, teens, youth, tots, groups, and community events.

The facilities are distributed throughout the park site based on land characteristics and the natural setting, consideration of adjacent land use, and anticipated use patterns. The woodland is maintained for habitat and natural setting, and the stream and wetland areas are protected. Passive recreation opportunities are introduced to the site in the form of walking trails and picnic pavilions. The trails are complemented with interpretative signs which highlight the environmental education aspects of the setting.

Kings Highway Park Improvements

Recreation and Leisure Facilities

Destination Playground - A premier destination playground is proposed with an age-segregated play area near the main parking lot off of Kings Highway. The playground includes a tot lot for ages two to five years old and a youth playground for ages six to twelve years old. The tot lot and youth playground must be developed within areas of safety surfacing and located as recommended for safe play. Reference should be made to the following:

- American Society for Testing and Materials F1487-05.
- Consumer Product Safety Commission Guidelines for Public Playground Safety.

The playgrounds must be accessible to physically challenged children via accessible pathways and play equipment should offer play options for physically challenged children. A pavilion is provided at the playground area to provide shade for caregivers and an area for traditional picnics. The playground should have signs identifying the age appropriate area of play. Consider adding a

drinking fountain and signage directing users to restrooms. A playground maintenance and inspection plan should be developed as further described in Chapter 7.

What Is A Good Playground?
Play is the work of children. Through play, children learn skills to develop into happy and well-adjusted human beings. Playgrounds provide a valuable resource for this process. Playgrounds typically focus on the narrow gross motor skills: running, climbing, and swinging. Important skills such as socialization, language, creativity, and conceptualization are less likely to be developed on play equipment typically available such as swings, climbers, seesaws, and merry-go-rounds.
Elements of a Good Playground – Play areas designed according to the development needs of specific age groups: (2-5 year olds, 6-12 year olds). Playground equipment must conform to the Consumer Product Safety Commission guidelines. This includes safe equipment, design for safety through proper layout, and safe surfaces. Playgrounds should be designed and located within the spirit and standards of the Americans with Disabilities Act. **Superstructure -** A play superstructure provides a wide range of experiences not possible in traditional equipment with a singular purpose. Every time a child steps onto a superstructure, a variety of choices are presented. Components of superstructures include decks, bridges, ladders, and climbers. Superstructures are sized to accommodate numerous children at once. **Tire Swing -** In contrast to the traditional belt swing, tire swings can accommodate up to three children at once. This encourages children to develop a sense of cooperation and teamwork. Sand Area - Children love to play in sandboxes. Sand play fosters cooperative and creative play. **Dramatic Play Structures –** Structures that resemble items such as houses, town buildings, trains, cars, etc., provide the vehicle for children to develop linguistic and conceptual skills. These structures encourage imagination and social skills. They become props for adventures and activities. **Paths and Walkways -** Paths for tricycles, in-line skates, or wheelchairs provide a way for children to experience independence. Paths with curves provide physical and cognitive challenges for balancing, steering, and turning, and a sense of the body in motion. **Trees and Gardens -** Trees and shade are essential components of a playground. Relief from the hot summer sun is important. When supervision is possible, gardens provide learning landscapes for appreciation of the environment and nature. **Sitting Areas -** Benches and shade are necessary for people using a playground. Adults supervising children need a relaxing place to sit. Sitting areas provide a gathering place for socialization and storytelling. Seating can be imaginative with cutouts in hills, walls designed for seating, etc. **Amenities and Support Facilities –** Playgrounds should have drinking fountains, trash receptacles, and nearby bike racks. If the playground is to have a supervised recreation program longer than three hours, it should be located with convenient access to restrooms. **Water Play Features -** Water play is a favorite activity of pre-schoolers. Where supervision is provided a water play area would be an asset. Water spray fountains near sand play areas add to the imaginative play opportunities. **Storage Facilities -** Storage facilities are necessary for recreation leaders to store materials and equipment on site.

Kings Highway Park
Master Plan

Caln Township
Chester County, PA
November 2007

PREPARED FOR:

Caln Township
(Owner)
253 Municipal Drive
Thorndale, PA 19372

PREPARED BY:

ysm
Landscape Architects
18 South Newberry Street
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a firm devoted exclusively to park and recreation planning
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NORTH
1 Acre

Scale: 1" = 100'-0"
0 100 200 300

Total Site Acreage:
91 Acres

Acreage of Site Being Developed:
Approx. 78 Acres

Legend

- LAWN
- GRASS AND WILDFLOWER MEADOW
- PAVEMENT
- CONCRETE AND DECORATIVE PAVEMENT
- 8'-10' WIDE PAVED TRAIL
- WOODEN FENCE
- BOARDWALK
- RETAINING WALL
- CONCRETE STAIRS
- MAJOR DECIDUOUS TREE
- EVERGREEN TREE
- FLOWERING TREE
- DISC GOLF TEE
- DISC GOLF HOLE
- HANDICAP ACCESSIBLE PARKING SPACE

Picnic Areas - Picnic areas are provided throughout the site. These areas typically consist of a pavilion adjacent to open lawn or grass and wildflower areas and are provided with picnic tables and grills. The pavilions will provide picnic opportunity and shelter from foul weather for outdoor programs and events.

Wedding Garden - A wedding garden is located north of the Griffith residence. The oval garden design will feature a gazebo for weddings and other ceremonies. A medium pavilion provides shade and gathering space for families and guests. The setting of the wedding garden provides the community with a place to photograph special events such as proms, homecomings, and weddings.

Disc Golf Course - A 9-hole disc golf course in the northwest corner of the site will be accessed from the parking lot off of Fisherville Road. The disc golf course is patterned after the PGA scoring, course design, and etiquette rules. The parks natural trees, shrubs, hills, mounds, waterway, and terrain changes are all vital to the layout of the disc golf course. A well balanced course has a mixture of holes that go completely thru the woods, partially thru the woods, and a majority of the holes in the open. This course is developed for recreation purposes and will not accommodate tournaments. The course is provided in conjunction with the adjacent small pavilion picnic area to provide a gathering location for disc golf rounds.

Informal Open Lawn Areas - Informal open lawn areas have been developed throughout the park, primarily adjacent to picnic pavilions and use areas. These open areas will provide opportunities for informal recreation and lawn games.

Professional Disc Golf Association Facts

Design Goals – Design a well balanced course with a wide range of hole lengths, a mixture of holes requiring left, right and straight throws. Utilize elevation changes and available foliage, with holes having a potential for multiple configurations.

Space Required – Two to three holes per acre.

Hole Count – Either 9 or 18 holes.

Length – Beginners and casual recreational player average 250 feet per hole, or a maximum of 4500 feet for an 18 hole course.

Targets – Post or a stainless steel basket with a set of chains to catch the disc efficiently.

Tee Pads and Markers – A 6'x12'x4" Concrete pad to tee off of and a tee marker or sign to designate hole number and par constructed out of 4"x4" lumber or metal pole installed in a concrete base.

Layout – The tee for the first hole should be located close to the parking area. The course should have a loop configuration for players to end where they started. Fairways should not cross one another and or be close to public streets, sidewalks, or areas where non-players congregate.

Season – A year round sport for all abilities, ages and skill levels.

Source: Professional Disc Golf Association.

Buildings and Structures

Amphitheater - The proposed amphitheater provides the community with a venue for special events, concerts, movies, and a variety of performances. Municipal programming will ultimately determine how the amphitheater is used. The amphitheater stage is optimally oriented with the setting sun in the west, to the backs of the audience. Seating for 200 spectators is accommodated with informal terrace walls. Lawn area facing the amphitheater building is developed with gently sloping lawn for overflow lawn seating. The building shall be designed to comply with the ADA and applicable building codes. Access to the amphitheater building will be controlled by an access gate for event set-up and drop-off via paved trails. Access will require coordination with park staff to remove the re-moveable bollards at trail access points to permit controlled access.

Pavilions - Picnic pavilions of various sizes are proposed throughout the park. The pavilions must be designed to comply with the ADA. Pavilions are proposed to complement other use areas as follows:

- Small Pavilion at the playground hub - A small pavilion (12-30 people) is located near the tot lot and youth playground to provide visitors a sheltered meeting/gathering space with

picnic opportunities for typical park use. The pavilion is located near the parking drop off loop for easy access.

- Large Pavilion/Restroom - A large pavilion (75-100+ people) with restrooms is located along the trail system west of the amphitheater providing a shaded resting and gathering space. This pavilion can be used as a destination for reunions, small parties, or picnics, and pre-concert gatherings. Amenities include picnic tables and grills. The shelter and restrooms will compliment the amphitheater structure.

  The western end of the building is developed with restrooms to serve the events and daily park users visiting the playground, natural area, and trails. The restroom should be designed to align with the Restroom Equity Regulations Act of 1990.

  Concessions have been discussed as part of this pavilion but have not been defined. Many concessions are developed as a "plug-in" facility without areas for food preparations while others have grills, fryers, and ventilation systems that can be rented or leased to concessionaires interested in serving food and drink. The facility design and use should be developed to comply with the local health department requirements for food handling and preparation. Depending upon the level of improvements, permits may be required. Caln Township must determine the type of use anticipated at the amphitheater and then determine if concessions are desired to compliment the facility.

- Small Pavilion near the disc golf course - A small pavilion (12-30 people) is located near the parking lot off of Fisherville Road to provide disc golf users with picnic and sheltered gathering space.

- Medium Pavilion at the wedding garden - A medium pavilion (30 - 60 people) is located north of the Griffith homestead at the west end of the wedding garden to provide a gathering space with shade for wedding guests and a picnic opportunity for typical park use. The pavilion will complement the gazebo structure at the east end of the garden.

- Gazebo at the wedding garden - A small gazebo is located at the east end of the wedding garden for marriage ceremonies and picture opportunities. Decorative pavement surrounds the structure and enhances the aesthetic garden setting.

Barn - The barn is proposed to be used for storage of maintenance equipment and supplies. The barn offers ample area for the Caln Township Parks and Recreation Department for this purpose and is convenient to park activity areas. Repairs to the floor and portions of the structure will be required based on information provided by the Township. A structural analysis of the barn was not completed as part of this study. This area is highly visible in the Kings Highway Park setting and should be kept clean and neat in appearance at all times.

Wetlands Boardwalk - Three boardwalks cross the unnamed tributary to Beaver Creek along the western portion of the property. These improvements provide accessible crossing of the wet area and will allow school groups and visitors to experience the creek and its habit without impact to the wildlife habitats or natural resources. Environmental permits will be required to install the boardwalks. Final length and configuration of the boardwalks will be determined by the location of wetlands.

Support Facilities

Entrance/Access and Parking - A total of 153 parking spaces are developed throughout the park. Parking should be developed in accordance with applicable ordinances and include handicap parking spaces.

- Main Entrance/Access and Parking - The access drive to Kings Highway Park aligns parallel with the existing drive to the Griffith homestead. A one-way in and one-way out drive will accommodate visitors entering and exiting the site. Kings Highway is developed with traffic signage to highlight the entrance to the park and slow traffic. The drive terminates in a parking area providing approximately 135 spaces with a drop off area at the playground and access route to the amphitheater. Overflow parking is a provided in the grass area south of the park area.
- Parking near the disc golf - An 18 car parking area located south of Fisherville Road, approximately 100' east of the intersection with North Bailey Road serves as a second point of access into the park. The parking area provides convenient parking for disc golf participants, access to the small pavilion and trails that access the western woodland and wetland portion of the site.

Utilities - Currently, public water and sewer do not serve the park site. The restrooms at the amphitheater area could be developed with on-lot disposal or composting restrooms which are compatible with the usage levels typical of picnic, trial users, and park visitors.

The main parking area, the amphitheater and its support facilities and accessible route from the parking area to the amphitheater will require electricity for lights. Pavilions at the amphitheater, playground, and wedding garden will require electricity. The park is envisioned for limited night use. Security lighting will also be required for the pavilions, entry drive, and parking areas beyond normal park hours.

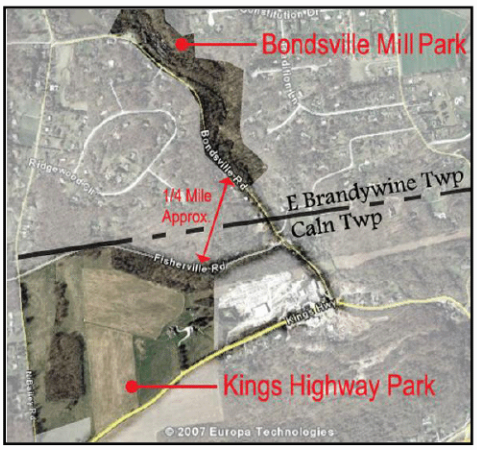
Trails

A trail system has been developed throughout the park to link the various park facilities and provide walking, jogging, bicycling, and in-line skating opportunities. An eight to ten-foot wide paved trail

encircles most facilities providing a variety of loop options and access throughout the park. Paved trails are recommended due to the site slopes. The trails explore the site and offer a variety of experiences and degrees of difficulty. All trails near sensitive natural resources should be located in the field to minimize disruption to vegetation, removal of mature trees, and other negative impacts. Trails that cross the Williams Gas pipe line utility easement must cross as close as possible to 90 degrees. Trail loop sections will be developed with mile markers and benches periodically placed for resting and enjoying the park setting.

Trails within the park should comply with the Americans with Disabilities Act Accessibility Guidelines for Outdoor Developed Areas as possible and each facility and activity area must be connected to a parking area with an accessible route.

The trails will be designed to accommodate emergency and maintenance vehicles as necessary. Removable bollards should be placed at all walk entries to limit access to authorized vehicles.



Trail Connections - Chester County has evaluated trail opportunities to tie the community and region together. Chester County has acknowledged pedestrian/bicycle connections to the Chester Valley Regional Recreation corridor will be difficult from Kings Highway Park site, although the corridor has not been defined in the Caln Township area. Future connections should be explored to connect this park trail with other regional trails and greenways in Chester County. Bondsville Mill Park, a future East Brandywine Township park, is located approximately a quarter of a mile north of Kings Highway Park on Bondsville Road. A future trail connection across Fisherville road to access Bondsville Park should be explored in partnership with East Brandywine Township.

Natural Areas

A variety of natural settings are maintained throughout the park. The natural areas provide a quiet setting for resting, enjoying the site's natural resources, and a landscape for learning. Areas will be maintained and enhanced to provide food and shelter for wildlife and aesthetic value for park users. The corridor of the unnamed tributary to Beaver Creek is maintained and enhanced with additional riparian vegetation. Trails will be provided with interpretive signage, providing the user with self directed information about the park's resources. Natural areas include the following:

Woodlands - The existing woodlands are maintained and enhanced in the design. The existing wooded areas should be monitored for the presence of non-native, invasive species. Non native, invasive species shall be removed and replaced with native material. The mature wooded area south of Fisherville Road is maintained as a refuse offering quiet isolation.

Riparian Corridor - The corridor of land encompassing the unnamed tributary to Beaver Creek is maintained and enhanced with riparian

buffer plantings. These vegetative buffers are critical to the water quality of the creek. Mature, native vegetation is maintained, and the width of the riparian corridor should be widened, where possible, to maximize the function of filtering pollutants and enhancing water quality. Areas adjacent to the tributary without filter strips should be planted to establish a sturdy root system. A designated observation area is developed south of Fisherville Road and east of North Bailey Road for convenient access for creek study. The overlook platform will provide a controlled accessible point to the creek.

Grass and Wildflower Meadow - The use of native wild flowers and warm season grasses is recommended throughout the park to provide visual interest, provide cover and food for wildlife, and lower the ongoing maintenance cost of mowing. The use of species native to Chester County is suggested. Patience is required when establishing warm season grasses and wildflowers. Many wildflowers will not bloom until their second year of growth. Six to eight-foot wide strips of maintained lawn areas should be provided adjacent to the meadow areas to create a visually pleasing transition to the meadow from trails and activity areas. Because wildflowers and native grasses have a different appearance in the landscape it is important to inform park visitors about their use in the landscape and environmental goals for the site. Signs should be placed in the meadows and native grass areas to describe the planting, growing process, and environmental benefits.

Benefits of Riparian Buffers

- *Stabilize Streambanks* – Deep-rooted vegetation binds the soil along streambanks, stabilizing the banks and preventing erosion during periods of high runoff.
- *Improve Water Quality* – Vegetation along streams traps sediment, nutrients, and pollutants before they enter the stream or groundwater.
- *Enhance Wildlife Habitats* – Trees, shrubs, and grasses along streams provide habitat and travel corridors for many wildlife species.
- *Reduce Flooding and Sedimentation* – Vegetation retains stormwater runoff longer, improves infiltration, and filters sediment from flowing downstream during floods.
- *Keep Streams Cooler and Healthier* – Shade from riparian buffers cools the stream waters, increasing the food and oxygen for aquatic life.
- *Enhance Scenery* – Vegetation along streams adds beauty and diversity to the landscape.

Site Amenities and Development Considerations

Landscaping - Landscaping should be introduced to solve problems and enhance the visual image and function of Kings Highway Park. Landscaping has been placed and maintained to buffer incompatible uses, transition from high use areas to natural areas, and to aesthetically enhance the park setting.

Elements such as signs and light posts, and rock boulders located throughout the park should be placed within landscaped areas. Mow lines should be established which reduce mowing, especially outside of activity areas. Meadows along roads and trails should have a mowed edge (the width of a mower deck) to delineate managed parkland. Entrances to the main activity areas should be attractively landscaped with a signature design that designates the area as the entrance to a park facility. Additionally, native plant material should be provided to create a living laboratory for learning about the environment.

The use of native plant material should be promoted throughout the park. Plant material native to Chester County is adapted to the geographic location and, as a result, will require less maintenance, withstand the extremes in climate change, be less susceptible to disease and pests, and propagate naturally. Native plant material will provide needed habitat and food for small mammals and birds. The introduction of native plants and enhancement of native plant areas will help reduce the opportunity for exotic species to establish a foothold on the site.

Site Furnishings - The developed area of the site should be convenient for users and create a welcoming environment. Benches should be provided at gathering places and periodically along trails. Trash receptacles are recommended at the picnic pavilions, playgrounds, and at parking areas. The trash receptacles in the natural area of the park will be limited to trailhead areas as the Township begins an educational initiative to introduce a "carry in carry out" policy. Eventually a "carry in carry out" policy may be implemented throughout the entire Kings Highway Park. Furnishings should consider the needs of seniors and persons with disabilities such as picnic tables that accommodate wheel chairs and benches in shaded locations.

Park Architecture - Implementation of the park master plan recommendations will require the development of new buildings. The architecture of park structures at Kings Highway Park can be a unifying factor within the park if buildings are developed with similar design and complementary qualities. Pavilions could be pre-engineered and chosen from one of many pavilion manufacturers or specifically designed for the park site. The amphitheater would typically be designed by an architect to the Township's specifications. All buildings must comply with various local, State, and Federal codes and guidelines. Restrooms should be designed to align with the Restroom Equity Regulations Act of 1990. Structures serving food and beverage should be developed to comply with the local health department requirements for food handling and preparation. Park architecture guidelines noted below are recommendations to guide the renovation and development of park structures.

Park Architecture Guidelines
Unifying Design – Buildings throughout the park should be similar in design and detail, while responding to function and site characteristics. Building materials should be incorporated in other park elements, i.e. stone used for site walls or sign bases.
Building Style – The historic value of existing buildings and structures shall be observed and highlighted in the design. Building materials and an earth tone color pallet that blends with the surrounding landscape should be considered for non-historic buildings.
Complement the Park Setting – The buildings should relate to the topography and character of the setting, becoming an integral part of the park site and not forced upon the landscape.
Human Scale – The buildings should be human scale with wide roof overhangs to protect spaces open from the elements.
Vandal Resistant – Interior and exterior materials should be vandal resistant. Restrooms should have stainless steel fixtures, pavilion trusses should be closed to the public, and security lighting should be installed.
Expandable – The park structures should be built with expansion opportunities preserved as future needs arise.
ADA Compliance – Public buildings must comply with the Americans with Disabilities Act requirements.
Green Materials – The use of green materials should be encouraged where appropriate.

Signage System Considerations for Kings Highway Park - A comprehensive signage system is important for Kings Highway Park to guide visitors to the park and inform and direct visitors once they are at the park site. Effective signage must be provided that directs visitors to the park's trails and facilities. A comprehensive system of signs should be developed at Kings Highway Park. The system should incorporate Caln Township Park and Recreation Department standard signs such as the park entrance sign and park rules sign. Other signs specific to Kings Highway Park should be designed to complement the standard signs and further the mission of the park.

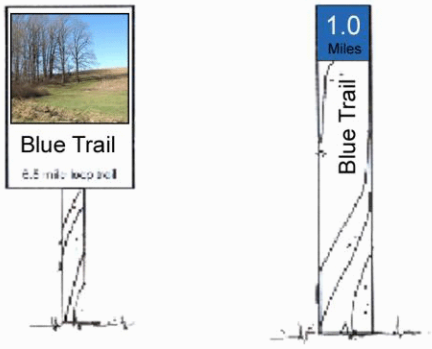
Park Signage System for Kings Highway Park		
Sign Type	**Sign Purpose**	**Sign Location**
Park Entrance Signs	Identify the park's main entrances.	Entrances to activity areas.
Information Kiosks	Provide information about the parks such as park policies, park and trail maps, special events and program calendar, etc.	At activity areas and major trailheads.
Directional Signs	Identify direction and distance to points of interest.	At trailheads and activity area access points.
Trail signs – trail and directional signs	Identify trails of the park.	At all trail intersections to guide users and identify cross trails.
Mile Markers	Identify location on a trail (mile indication visible from both sides of the marker).	At one-quarter mile intervals along trails.
Interpretative Signs	Provide environmental education, historic, cultural and general interest information.	At points of interest in the park and along the trails.
Traffic Signs	Warn motorists of park activity areas.	Along the entrance drives.
Safety Signs	Warn visitors of safety issues.	Strategically located as necessary.

The following table offers guidelines for development of signs in a park setting.

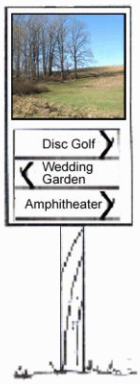
Park Sign Guidelines	
Vandal Resistant	Utilize materials such as phenolic resin panels (no frame required) or fiberglass embedded panels (frame required) which resist abrasions, graffiti, solvents, etc.
Weather Resistant	Utilize materials that will not fade or otherwise degrade from sunlight, moisture, or the freeze/thaw cycle.
Meet PennDOT Regulations	Along PennDOT roadways use standard signs.
Promote Consistent Image	Develop a "family" of graphics (logo, font, colors, etc.) that will be used on signs throughout the park to unify the park. Work with professional graphic artists to create a layout template for each sign type and park logo.
Graphics	Utilize maps, graphic illustrations and photographs, and text to communicate the intended message.
Positive Message	Research indicates that positive messages are far more effective in reducing depreciative activities (littering) than negatively worded messages.[1]
Sign Illumination	Park identification signs located at the main entrances should be illuminated so they are visible at night, fostering awareness of the parks.

[1] Recreation Research Update, Pacific Southwest Research Station – Wildland Recreation and Urban Cultures, October 1999 No. 31 (USDA Forest Service).

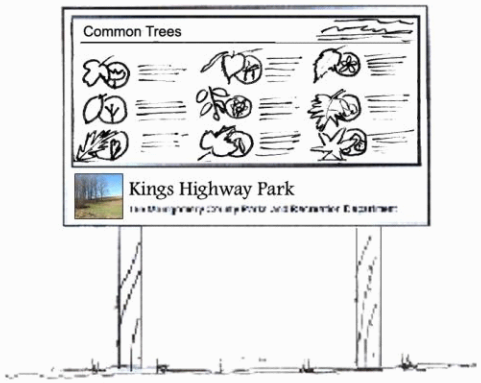
The following sketches offer typical images of a signage system recommended for Kings Highway Park. Kings Highway Park offers numerous opportunities for learning about the natural, cultural, and historic resources of the site. A signage system is recommended to highlight the unique attributes and opportunities offered at Kings Highway Park.



Trail Sign / Mile Marker



Directional Signs



Informational / Interpretive Sign

Stormwater Management - Stormwater facilities will be required to accommodate the stormwater runoff from the park. Stormwater, collection, and conveyance facilities shall be designed to comply with the Stormwater Management Code of Caln Township. Best Management Practice principles should be incorporated into the stormwater management design as possible. Stormwater management facilities, such as detention and retention facilities, to reduce peak flows are not accommodated on the park plans at this time, further study to determine size and location should be performed before the construction process.

Best Management Practices - The sites' natural resources are valuable assets and should be protected. Development of the park as conceived in this master plan will involve earthwork and construction activities. Best Management Practices are encouraged throughout the construction process to protect the resources and stabilize them through creative design. Best Management Practices will promote a stable future for the site. Examples of Best Management Practices are noted below.

Best Management Practices		
BMP	**Purpose**	**Application**
Subsurface Infiltration Bed	Subsurface Infiltration Beds provide temporary storage and infiltration of stormwater runoff by placing storage media of varying types beneath the proposed surface grade.	Subsurface Infiltration beds are ideally suited for expansive, generally flat open spaces, such as lawns, meadows, and playfields, which are located downhill from nearby impervious areas.
Riparian Buffer Restoration	Stabilize slope, improve wildlife habitat, slow storm water run-off	Areas of erodable soils and/or steep slope and at the edge of the stream and perimeter of pond.
Filter Strip	To trap sediment and convey run-off from paved surfaces to storm water channels and reduce run-off velocity	Adjacent to impervious surfaces and on gentle slopes with sheet flow. Adjacent to springs, streams, and ponds to filter sediment.
Grass Swales	Run-off conveyance, pollution, and sediment filtering device and increased ground water infiltration.	Where natural drainage ways can be incorporated into the storm water design in lieu of piped conveyance.
Rain Gardens / Bioretention	Shallow surface depression planted with native vegetation to capture and treat stormwater run-off, promoting infiltration and groundwater recharge.	Flexible in terms of size and infiltration. Great for treating direct source of run-off on an on-lot basis, such the run-off from a paved parking lot or building roof.
Level Spreader	To reduce the erosion effects of concentrated run-off and promote infiltration	Adjacent to paved surfaces and at pipe and channel discharge points.
Flood Plain Restoration	Re-established a stream's floodplain and banks to stop streambank erosion, improve stream health, provide species habitat for land animals and aquatic species, recreate wetland areas, increase riparian areas and reduce flooding overflow.	Can be easily integrated into the initial site planning process to prevent riparian problems from getting worse or can fix problems caused by historical practices.
Minimize Disturbance	Minimize disruption to the site's natural systems and preserve the natural stabilizing and filtering vegetation of the site.	Where development is proposed.
Reduce Impervious Cover	Reduce storm water run-off and promote infiltration.	Where development is proposed. Reduce driveway width, parking area dimensions, and paved areas to minimum dimensions. Utilize coarse aggregate porous surface in lieu of impervious pavement. Utilize stabilized turf for overflow parking.
Best Management Plan for Construction Activities	To prevent soil erosion, sediment, and other pollutants from entering springs, streams, ponds, etc.	Where development is proposed. Utilize during construction and post- construction period.

Sustainability and Green Design Considerations

Sustainability and Green Design Considerations for Kings Highway Park Development - Sustainability is a widely accepted concept that is often integrated into park development. Sustainability recognizes the impact of human actions on the natural world and promotes actions that align with conservation principles.

> **Sustainable Design**
>
> *Sustainable design is a concept that recognizes human civilization is an integral part of the natural work and nature must be preserved and perpetuated if the human community is to sustain itself indefinitely. Sustainable design is the philosophy that human development should exemplify the principles of conservation, and encourage the application of those principles in our daily lives.*[1]

Parks present opportunities to demonstrate and share environmental concepts and educate the general public about their role in the environment. Many park sites have embraced the concept of sustainability and have been developed with a sustainable site design approach that incorporates strategies that are ecologically based and compatible with the natural systems of the site. Sustainable park development additionally strives to repair and restore site systems and respect the function and process of the natural world. Andropogon Associates, Ltd developed the "Valdez Principles for Site Design" which promote a sustainable ecological model for site development.[2] The principles include:

- Recognition of Context
- Treatment of Landscapes as Interdependent and Interconnected
- Integration of the Native Landscape with Development
- Promotion of Biodiversity
- Reuse of Already Disturbed Areas
- Making a Habit of Restoration

The development of the park site provides an opportunity to incorporate green design techniques and features. Integration of green design principals and products for construction and rehabilitation of park sites is encouraged to minimize the impact on natural resources and promote sustainable development.

Green Design Considerations		
Consideration	**Intent**	**Application**
Erosion and sedimentation control	Reduce negative impact on air and water quality	Provide erosion control measures and best management practices (BMP's) during new construction activities. Eliminate impact to steep slope areas.
Reduce site disturbance	Limit development to appropriate sites to reduce the impact on the landscape and habitat.	Construct improvements within existing clearings or developed areas.
Develop sustainable trails	Limit erosion attributed to inappropriate trail placement.	Develop trails that follow the contour of the land. Use switchbacks to navigate steep terrain, where necessary. Eliminate highly erodable trails.

[2] Guiding Principles of Sustainable Design (Denver Services Center: United States Department of the Interior, National Park Service, 1993), p. 41.

Green Design Considerations, continued		
Consideration	**Intent**	**Application**
Stormwater management	Limit disruption and pollution of natural water courses, reduce increased runoff and promote infiltration.	Minimize crossings at water courses. Where crossings are necessary, provide measures for efficient passage of water. Utilize porous pavement to promote infiltration of stormwater runoff. Size parking areas to meet park need and provide turf overflow parking for high use occurrences and special events.
Reduce heat islands	Minimize impact of microclimate.	Provide plantings in the large, expansive parking areas to break up the hard surface and promote infiltration. Dawn to dusk policy where appropriate.
Reduce light pollution	Improve night sky visibility and reduce impact on nocturnal environments.	Limit lighting within the park. Where night lighting is necessary for safety and security, provide shields or specify full cut-off fixtures and only specify the necessary lumens.
Innovative wastewater treatment	Reduce the generation of wastewater and potable water demand	Provide self mulching or other environmentally friendly treatment alternatives.
Recycled building materials	Limit the use of consumptive building materials	Utilize recycled plastic and building materials in new construction.
Local materials and suppliers	Support the local economy and reduce the environmental impact resulting from transportation	Purchase products locally produced.
Maximize solar orientation	Reduce electric needs through proper building orientation.	Orient buildings to take advantage of natural light and heat.
Energy consumption	Minimize use of fossil fuels.	Install a ground source geothermal heat pump system for heating and cooling of buildings. Plant deciduous trees to cool buildings in the summer and allow solar access in winter. Layout and orient buildings and outdoor use areas to take advantage of cooling summer breezes. Connect park sites to regional trail systems so that non-motorized transportation modes can be used to access the site. Install solar powered amenities/features.
Promote water conservation	Reduce water use to lower burden on supply.	Select native and drought tolerant plants to reduce watering and maintenance demands. Mulch landscape areas to retain moisture and minimize the need to water plants.
Use water efficiently	Maximize water collection to reduce burden on supply.	Collect rainwater and runoff in rain barrels for watering landscaping and maintenance needs. Direct rainwater to rain gardens to promote groundwater recharge. Use high efficiency fixtures and composting toilets to reduce demand. Use re-circulating and water treatment systems for splash pads and spray features.
Emphasize and promote recycling	Reduce the amount of new materials required and lower the demand for new materials to be produced.	Reuse existing buildings, materials and infrastructure. Build with salvaged materials whenever available,
Participate in LEED system.	Employ the Leadership in Energy and Environmental Design (LEED) Green Building Rating System on site as the national standard for Green Design.	Use the LEED project checklist for all aspects of design from erosion & sedimentation control to green power and materials.

Chapter 6

Cost and Implementation Analysis

Kings Highway Park Cost and Implementation Analysis

Kings Highway Park will be an investment in passive recreation for residents of Caln Township. These opportunities will require the investment of significant capital expenditures and dedication of Township staff to realize the vision established in this master plan. The development of Kings Highway Park will occur in phases over several years. To guide the development of the park, cost estimates have been prepared to correspond to proposed development phases.

Kings Highway Park Master Plan has been divided into five phases of construction as discussed with the Study Committee. The proposed phases are based on logical sequence of construction and park function. These phases should be viewed as recommendations for development phasing. As funding is available or needs change in the community, the sequence of development and composition of the phases may change.

The following estimates of probable construction costs have been completed using DCNR format for use in future grant-funding applications. Costs are based on Pennsylvania prevailing wages for year 2007 construction prices. A fifteen percent contingency is included in each cost. No increase or adjustments for inflation has been accounted for between phases.

A summary of the costs is outlined below:

Kings Highway Park Probable Construction Cost Opinions	
Park Hub	$1,930,219
Amphitheater Area	$856,332
Disc Golf Area	$629,920
Environmental Area	$629,203
Wedding Garden	$710,755
TOTAL	**$4,756,429**

Implementation Strategies

Dividing the project into the suggested five stages will allow a varied implementation strategy for each stage. Each of the phases will require detailed design and engineering construction documents for public bidding. Cost estimates are prepared for each phase of park development on pages 6-6 to 6-14.

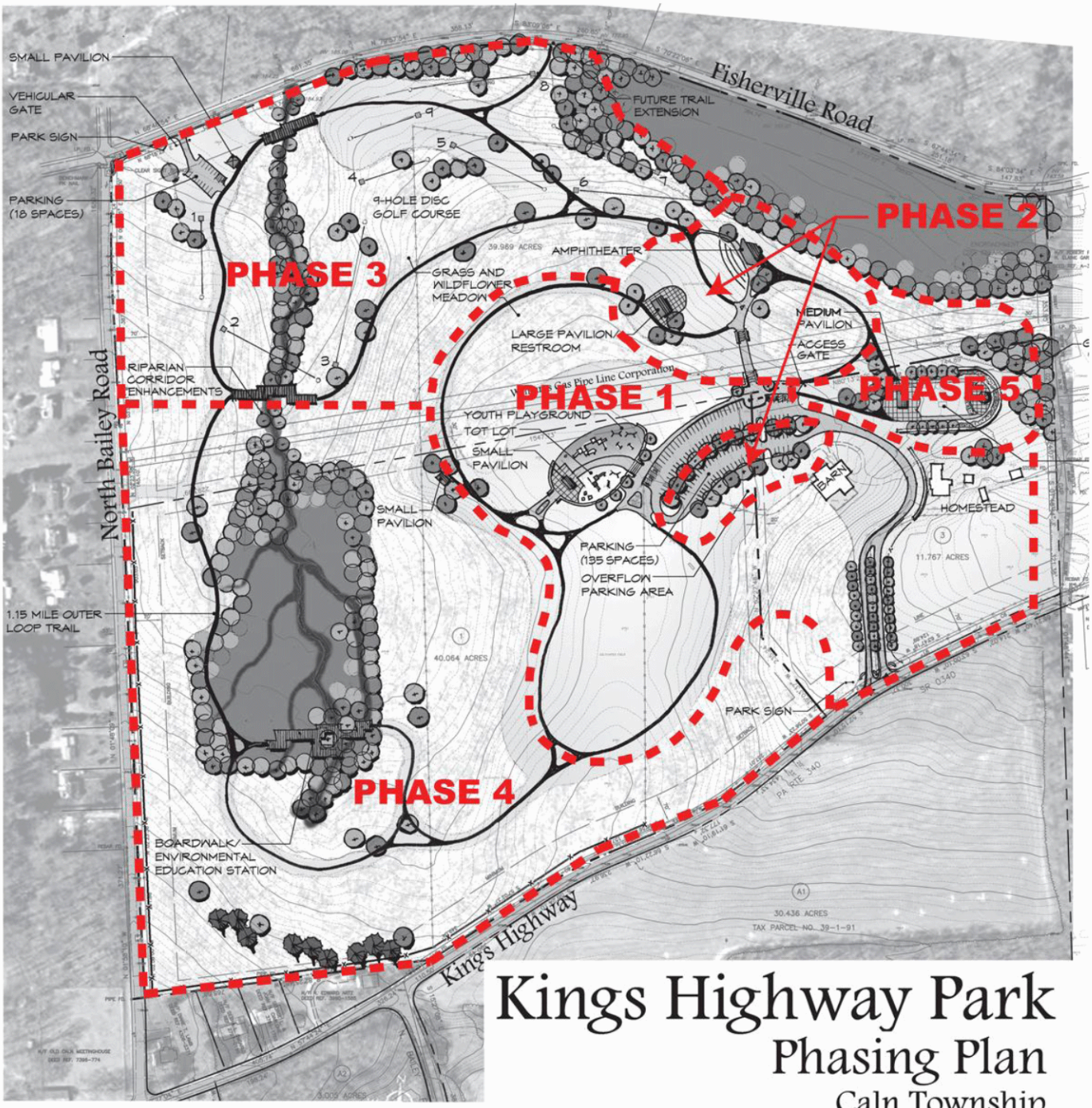
Implementation Tasks

The creation of the park as depicted on the final master plan will require numerous approvals and permits. The following list outlines the implementation tasks that may be required for development of Kings Highway Park. This list is provided for planning purposes and additional tasks, approvals, and permits may be required.

- Prepare land development plans for submission and review by Caln Township and Chester County, as required.
- Complete environmental permits for the proposed improvements that will impact waters of the Commonwealth. Improvements such as boardwalk and observation areas crossing or impacting the stream must be permitted.
- Develop construction documents utilizing the boundary and topographic survey. Construction documents shall design, detail, and engineer the proposed improvements and associated amenities. Prepare a project manual including specifications for bidding.
- Prior to construction, Caln Township must obtain approvals from the various governing agencies. The following is a listing of typical approvals for a development of this nature but may not be all-inclusive.
    - Municipal and County approval for land development plans, if required.
    - Chester County Conservation District approval for erosion and sedimentation control plans and NPDES Permit.
    - Williams Gas Pipe Line Corporation for improvements within the utility easement.
    - Pennsylvania Department of Transportation approval for any work within a PennDOT right-of-way.
    - Pennsylvania Department of Environmental Protection approval for any work within the waters of the Commonwealth including delineated wetlands and stream encroachments and crossings.
    - A detailed wetland study to identify any existing wetlands on site.
    - Water well testing/drilling for quantity and potable water.
    - Pennsylvania Department of Environmental Protection for sewage planning module approval.
    - On lot testing for septic field suitability for sewer disposal for proposed restrooms facilities, unless public sewer is utilized.
    - Pennsylvania One Call. Pennsylvania law requires three working days notice for construction phase.
    - Approval from public utilities required for development

such as sewer, water, and electric service extensions.

- Each of the above permits and approval are typically involved and will require advance planning to facilitate the process. Adequate preparation and review time should be allotted.
- Upon approval of all required approvals and permits and completion of the construction documents, the project should be publicly bid for construction.



Kings Highway Park

Phasing Plan

Caln Township
Chester County, PA
November 2007

NORTH
1 Acre

Scale 1 = 100'-0"
0 100 200 300

PREPARED FOR:
Caln Township
(Owner)
253 Municipal Drive
Thorndale, PA 19372

PREPARED BY:
ysm Landscape Architects
19 South Newberry Street
York, Pennsylvania 17401
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Commonwealth of Pennsylvania
Department of Conservation and Natural Resources
Bureau of Recreation and Conservation

PROBABLE CONSTRUCTION COST OPINION

Phase 1. Kings Highway Park - Park Hub

Grantee: Caln Township | Date Prepared 10/11/2007
Project Title: Kings Highway Park | DCNR Project No.

Item No.	Phase 1. Work Item	No. of Units	Unit Cost	Total Cost
1	**Demolition/Site Preparation**			**$21,668**
	A. Pavement Removal	1,100 SY	6.00	$6,600
	B. Fencing Removal	1,767 LF	4.00	$7,068
	C. Misc Site Preparation	1 LS	8,000.00	$8,000
2	**Earthwork**			**$115,800**
	A. Strip/Stockpile/Replace Topsoil	7,625 CY	2.40	$18,300
	B. Grading Operations	30,000 CY	3.25	$97,500
3	**Stormwater and E&S Facilities**			**$165,000**
	A. Stormwater management	15 AC	5,000.00	$75,000
	B. E&S Controls	15 AC	6,000.00	$90,000
4	**8' Bituminous Pedestrian Trail (3090 LF)**			**$56,640**
	A. Excavation	763 CY	3.00	$2,289
	B. 1" ID2 Wearing Course	2,750 SY	5.00	$13,750
	C. 2" ID2 Binder Course	2,750 SY	5.00	$13,750
	D. 6" 2A Coarse Aggregate	2,750 SY	9.00	$24,750
	E. Fine Grade and Compact Shoulders	12,360 SF	0.17	$2,101
5	**Destination Tot Lot (Ages 2-5)**			**$148,008**
	A. Play Equipment	1 LS	45,000.00	$45,000
	B. Play Equipment Installation	1 LS	18,000.00	$18,000
	C. Excavation Fine Grade and Compaction	300 CY	3.30	$990
	D. Concrete Curbing Edging	360 LF	22.00	$7,920
	E. Underdrain	150 LF	10.00	$1,500
	F. Safety Surface (Rubber)	7,500 SF	9.00	$67,500
	G. Stone Base and Filter Fabric	835 SY	8.50	$7,098
6	**Destination Youth Playground (Ages 5-12)**			**$238,126**
	A. Play Equipment	1 LS	60,000.00	$60,000
	B. Play Equipment Installation	1 LS	24,000.00	$24,000
	C. Excavation Fine Grade and Compaction	520 CY	3.30	$1,716
	D. Concrete Curbing Edging	525 LF	22.00	$11,550
	E. Underdrain	160 LF	10.00	$1,600
	F. Safety Surface (Rubber)	14,000 SF	9.00	$126,000
	G. Stone Base and Filter Fabric	1,560 SY	8.50	$13,260
7	**Concrete Walks/Plaza Areas**			**$133,925**
	A. Concrete Pavement	14,775 SF	7.00	$103,425
	B. Decorative Concrete (assume 15% of pvmt)	2,600 SF	10.00	$26,000
	C. Concrete Stairs	375 SF	12.00	$4,500
8	**Access Drive and Parking (70 Spaces)**			**$108,225**
	A. Excavation Fine Grade and Compaction	1,545 CY	3.00	$4,635
	B. 1" ID2 Wearing Course	4,633 SY	5.00	$23,165
	C. 2" ID2 Binder Course	4,633 SY	5.00	$23,165
	D. 8" Coarse Aggregate	4,633 SY	10.00	$46,330
	E. Concrete Curbing Edging	440 LF	22.00	$9,680
	F. Parking Striping	1 LS	800.00	$800
	G. Handicap parking striping and signage	3 SP	150.00	$450

9	**Retaining Walls**			**$129,000**
	A. 20" Wall at Playground	1,380 SF	50.00	$69,000
	B. 36" Wall along Entrance Drive	1,200 SF	50.00	$60,000
10	**Signage**			**$4,900**
	A. Entrance Sign	1 EA	4,000.00	$4,000
	B. Mile Markers	3 EA	300.00	$900
11	**Site Electrical**			**$24,400**
	A. Site Electric Service	- LS	0.00	$0
	B. Pavilion and Trail Fixtures and Appurt.	1 LS	20,000.00	$20,000
	C. Trenching for Conduit/Service	880 LF	5.00	$4,400
12	**Water Line**			**$40,500**
	A. Water Pipe and Appurt	900 LF	45.00	$40,500
13	**Site Amenities**			**$43,425**
	A. Picnic Tables	8 EA	1,000.00	$8,000
	B. Benches	10 EA	1,200.00	$12,000
	C. Trash Receptacle	3 EA	900.00	$2,700
	D. Water Fountain	1 EA	5,000.00	$5,000
	E. Bicycle Rack	1 EA	700.00	$700
	F. Bollards	6 EA	150.00	$900
	H. Grills	1 EA	450.00	$450
	I. Stair Handrails	50 LF	30.00	$1,500
	J. Fencing along Entrance Drive	400 LF	30.00	$12,000
	K. Pet Waste Disposal	1 EA	175.00	$175
14	**Buildings and Pavilions**			**$25,000**
	A. Small Picnic Pavilion with Pad	1 EA	25,000.00	$25,000
15	**Landscaping**			**$107,763**
	A. Lawn Seeding	502,837 SF	0.11	$55,312
	B. Meadow Seeding	285,461 SF	0.11	$31,401
	C. Evergreen Trees	0 EA	250.00	$0
	D. Shade Trees	23 EA	350.00	$8,050
	E. Flowering Trees	20 EA	250.00	$5,000
	F. Shrubs	60 EA	50.00	$3,000
	G. Perennials / Grasses	1 LS	5,000.00	$5,000
16	**Contingency**			**$204,357**
	A. 15% Contingency	1 LS	204,356.92	$204,357
17	**Bond Mobilization and Layout**			**$188,008**
	A. Bond Mobilization and Layout (12%)	1 LS	188,008.37	$188,008
18	**Professional Fees**			**$175,474**
	A. Design and Engineering (10%)	1 LS	175,474.48	$175,474
	Total			**$1,930,219**

Cost estimate does not include any utility connection fees, utility location and/or relocation, improvements to existing roads and intersections, electric service to site, off-site improvements, soil amendments, rock excavation, and construction inspection fees.

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

Commonwealth of Pennsylvania
Department of Conservation and Natural Resources
Bureau of Recreation and Conservation

PROBABLE CONSTRUCTION COST OPINION

Phase 2. Kings Highway Park - Amphitheatre Area

Grantee: Caln Township — Date Prepared 10/11/2007
Project Title: Kings Highway Park — DCNR Project No.

Item No.	Phase 2. Work Item	No. of Units	Unit Cost	Total Cost
1	**Demolition/Site Preparation**			**$5,000**
	A. Misc Site Preparation	1 LS	5,000.00	$5,000
2	**Earthwork**			**$57,604**
	A. Strip/Stockpile/Replace Topsoil	2,630 CY	2.40	$6,312
	B. Grading Operations	15,782 CY	3.25	$51,292
3	**8' Bituminous Pedestrian Trail (1460 LF)**			**$26,773**
	A. Excavation	360 CY	3.00	$1,080
	B. 1" ID2 Wearing Course	1,300 SY	5.00	$6,500
	C. 2" ID2 Binder Course	1,300 SY	5.00	$6,500
	D. 6" 2A Coarse Aggregate	1,300 SY	9.00	$11,700
	E. Fine Grade and Compact Shoulders	5,840 SF	0.17	$993
4	**Stormwater and E&S Facilities**			**$42,000**
	A. Stormwater management	4.2 AC	4,000.00	$16,800
	B. E&S Controls	4.2 AC	6,000.00	$25,200
5	**Concrete Walks/Plaza Areas**			**$82,260**
	A. Concrete Pavement	9,000 SF	7.00	$63,000
	B. Decorative Concrete (assume 15% of pvmt)	1,350 SF	10.00	$13,500
	C. Concrete Stairs	480 SF	12.00	$5,760
6	**Access Drive and Parking (65 Spaces)**			**$70,258**
	A. Excavation Fine Grade and Compaction	956 CY	3.00	$2,868
	B. 1" ID2 Wearing Course	2,867 SY	5.00	$14,335
	C. 2" ID2 Binder Course	2,867 SY	5.00	$14,335
	D. 8" Coarse Aggregate	2,867 SY	10.00	$28,670
	E. Concrete Curbing Edging	400 LF	22.00	$8,800
	F. Parking Striping	1 LS	800.00	$800
	G. Handicap parking striping and signage	3 SP	150.00	$450
7	**Overflow Parking Area - Stabilized Lawn**			**$21,838**
	A. Excavation 10"	630 CY	3.00	$1,890
	B. 6" Coarse Aggregate	2,280 SY	7.00	$15,960
	C. 4" Topsoil	250 CY	2.00	$500
	D. Fine Grade and Compact	20,520 SF	0.17	$3,488
8	**Retaining Walls**			**$67,500**
	A. Amphitheater Seating/Retaining Walls	1,350 SF	50.00	$67,500
9	**Signage**			**$2,500**
	A. Wayfinding/Directional Signage allowance	1 LS	2,500.00	$2,500
10	**Buildings and Pavilions**			**$180,000**
	A. Amphitheater Stage	1 LS	100,000.00	$100,000
	B. Large Pavilion with Restroom and Pad	1 LS	80,000.00	$80,000
11	**Site Electrical**			**$43,000**
	A. Site Electric Service	- LS	0.00	$0
	B. Pavilion and Trail Fixtures and Appurt.	1 LS	40,000.00	$40,000
	C. Trenching for Conduit/Service	600 LF	5.00	$3,000

12	**Water Line**			**$38,000**
	A. Water bibbs/hydrants	2 EA	1,000.00	$2,000
	B. Water Pipe and Appurt	800 LF	45.00	$36,000
13	**Sanitary Sewer**			**$0**
	A. Future Connection to Public Sewer	0 LF	0.00	$0
14	**Site Amenities**			**$15,100**
	A. Picnic Tables	4 EA	1,000.00	$4,000
	B. Benches	3 EA	1,200.00	$3,600
	C. Stair Handrails	100 LF	30.00	$3,000
	D. Trash Receptacle	5 EA	900.00	$4,500
15	**Landscaping**			**$47,554**
	A. Lawn Seeding	87,320 SF	0.11	$9,605
	B. Meadow Seeding	126,807 SF	0.11	$13,949
	B. Evergreen Trees	0 EA	250.00	$0
	C. Shade Trees	40 EA	350.00	$14,000
	D. Flowering Trees	10 EA	250.00	$2,500
	E. Shrubs	50 EA	50.00	$2,500
	F. Perennials / Grasses	1 LS	5,000.00	$5,000
16	**Contingency**			**$48,923**
	A. 15% Contingency	1 LS	48,923.10	$48,923
17	**Bond Mobilization and Layout**			**$45,009**
	A. Bond Mobilization and Layout (12%)	1 LS	45,009.25	$45,009
18	**Professional Fees**			**$63,013**
	A. Design and Engineering (15%)	1 LS	63,012.95	$63,013
	Total			**$856,332**

Cost estimate does not include any utility connection fees, utility location and/or relocation, improvements to existing roads and intersections, electric service to site, future sanitary pipe connections, soil amendments, rock excavation, and construction inspection fees.

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Commonwealth of Pennsylvania
Department of Conservation and Natural Resources
Bureau of Recreation and Conservation

PROBABLE CONSTRUCTION COST OPINION

Phase 3. Kings Highway Park - Disc Golf Area

Grantee: Caln Township — Date Prepared 10/11/2007
Project Title: Kings Highway Park — DCNR Project No.

Item No.	Phase 3. Work Item	No. of Units	Unit Cost	Total Cost
1	**Demolition/Site Preparation**			**$18,700**
	A. Invasive Species Removal	1 LS	10,000.00	$10,000
	B. Misc Site Preparation	1 LS	5,000.00	$5,000
	C. Fencing Removal	925 LF	4.00	$3,700
2	**Earthwork**			**$61,115**
	A. Strip/Stockpile/Replace Topsoil	5,030 CY	2.40	$12,072
	B. Grading Operations	15,090 CY	3.25	$49,043
3	**8' Bituminous Pedestrian Trail (3065 LF)**			**$56,139**
	A. Excavation Fine Grade and Compaction	760 CY	3.00	$2,280
	B. 1" ID2 Wearing Course	2,725 SY	5.00	$13,625
	C. 2" ID2 Binder Course	2,725 SY	5.00	$13,625
	D. 6" 2A Coarse Aggregate	2,725 SY	9.00	$24,525
	E. Fine Grade and Compact Shoulders	12,260 SF	0.17	$2,084
4	**Access and Parking (18 Spaces)**			**$17,831**
	A. Excavation	277 CY	3.00	$831
	B. 1" ID2 Wearing Course	830 SY	5.00	$4,150
	C. 2" ID2 Binder Course	830 SY	5.00	$4,150
	D. 8" Coarse Aggregate	830 SY	10.00	$8,300
	E. HC Amenities	1 LS	400.00	$400
5	**Stormwater and E&S Facilities**			**$110,000**
	A. Stormwater management	11 AC	4,000.00	$44,000
	B. E&S Controls	11 AC	6,000.00	$66,000
6	**Boardwalk**			**$31,000**
	A. Boardwalk	310 LF	100.00	$31,000
7	**Signage**			**$9,900**
	A. Information Kiosk	1 EA	5,000.00	$5,000
	B. Entrance Sign	1 EA	4,000.00	$4,000
	C. Mile Markers	3 EA	300.00	$900
8	**9-Hole Disc Golf Course**			**$8,766**
	A. Concrete Tee Pads	288 SF	7.00	$2,016
	B. Baskets	9 EA	750.00	$6,750
9	**Site Amenities**			**$18,075**
	A. Picnic Tables	5 EA	1,000.00	$5,000
	B. Benches	6 EA	1,200.00	$7,200
	C. Trash Receptacle	3 EA	900.00	$2,700
	D. Pet Waste Disposal	1 EA	175.00	$175
	E. Vehicular Gate	1 LS	3,000.00	$3,000
10	**Pavilions and Structures**			**$25,000**
	A. Small Picnic Pavilion with Pad	1 EA	25,000.00	$25,000

11	**Landscaping**			**$88,082**
	A. Lawn Seeding	225,335 SF	0.11	$24,787
	B. Meadow Seeding	452,680 SF	0.11	$49,795
	C. Evergreen Trees	5 EA	250.00	$1,250
	D. Shade Trees	25 EA	350.00	$8,750
	E. Flowering Trees	0 EA	250.00	$0
	F. Shrubs	50 EA	50.00	$2,500
	G. Perennials / Grasses	1 LS	1,000.00	$1,000
12	**Contingency**			**$66,691**
	A. 15% Contingency	1 LS	66,691.10	$66,691
13	**Bond Mobilization and Layout**			**$61,356**
	A. Bond Mobilization and Layout (12%)	1 LS	61,355.81	$61,356
14	**Professional Fees**			**$57,265**
	A. Design and Engineering (10%)	1 LS	57,265.43	$57,265
	Total			**$629,920**

Cost estimate does not include any utility connection fees, utility location and/or relocation, improvements to existing roads and intersections, off-site improvements, electric system or distribution, soil amendments, rock excavation, and construction inspection fees.

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Commonwealth of Pennsylvania
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PROBABLE CONSTRUCTION COST OPINION

Phase 4. Kings Highway Park - Environmental Area

Grantee: Caln Township — Date Prepared 10/11/2007
Project Title: Kings Highway Park — DCNR Project No.

Item No.	Phase 4. Work Item	No. of Units	Unit Cost	Total Cost
1	**Demolition/Site Preparation**			**$15,640**
	A. Invasive Species Removal	1 LS	10,000.00	$10,000
	B. Fencing Removal	1,410 LF	4.00	$5,640
2	**Earthwork**			**$41,280**
	A. Strip/Stockpile/Replace Topsoil	4,640 CY	2.40	$11,136
	B. Grading Operations	9,275 CY	3.25	$30,144
3	**8' Bituminous Pedestrian Trail (2732 LF)**			**$50,006**
	A. Excavation	672 CY	3.00	$2,016
	B. 1" ID2 Wearing Course	2,428 SY	5.00	$12,140
	C. 2" ID2 Binder Course	2,428 SY	5.00	$12,140
	D. 6" 2A Coarse Aggregate	2,428 SY	9.00	$21,852
	E. Fine Grade and Compact Shoulders	10,928 SF	0.17	$1,858
4	**Structures**			**$72,000**
	A. Boardwalk	470 LF	100.00	$47,000
	B. Small Picnic Pavilion with Pad	1 EA	25,000.00	$25,000
5	**Signage**			**$9,900**
	A. Environmental Education Exhibits	6 EA	1,500.00	$9,000
	B. Mile Markers	3 EA	300.00	$900
6	**Stormwater and E&S Facilities**			**$66,000**
	A. Stormwater management	6 AC	5,000.00	$30,000
	B. E&S Controls	6 AC	6,000.00	$36,000
7	**Site Amenities**			**$5,400**
	A. Benches	3 EA	1,200.00	$3,600
	B. Trash Receptacle	2 EA	900.00	$1,800
8	**Landscaping**			**$164,567**
	A. Meadow Seeding	1,006,543 SF	0.11	$110,720
	A. Lawn Seeding	26,340 SF	0.11	$2,897
	B. Evergreen Trees	20 EA	250.00	$5,000
	C. Shade Trees	17 EA	350.00	$5,950
	D. Riparian Corridor Planting Allowance	1 LS	40,000.00	$40,000
9	**Contingency**			**$63,719**
	A. 15% Contingency	1 LS	63,718.90	$63,719
10	**Bond Mobilization and Layout**			**$58,621**
	A. Bond Mobilization and Layout (12%)	1 LS	58,621.38	$58,621
11	**Professional Fees**			**$82,070**
	A. Design and Engineering (15%)	1 LS	82,069.94	$82,070
	Total			**$629,203**

Cost estimate does not include any utility connection fees, utility location and/or relocation, improvements to existing roads and intersections, off-site improvements, electric system or distribution, soil amendments, rock excavation, and construction inspection fees.

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

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PROBABLE CONSTRUCTION COST OPINION

Phase 5. Kings Highway Park - Wedding Garden

Grantee: Caln Township — Date Prepared 10/11/2007
Project Title: Kings Highway Park — DCNR Project No.

Item No.	Phase 5. Work Item	No. of Units	Unit Cost	Total Cost
1	**Demolition/Site Preparation**			**$8,000**
	A. Misc. Site Preparation	1 LS	8,000.00	$8,000
2	**Earthwork**			**$34,990**
	A. Strip/Stockpile/Replace Topsoil	2,500 CY	2.40	$6,000
	B. Grading Operations	8,920 CY	3.25	$28,990
3	**Stormwater and E&S Facilities**			**$22,000**
	A. Stormwater management	2 AC	5,000.00	$10,000
	B. E&S Controls	2 AC	6,000.00	$12,000
4	**8' Bituminous Pedestrian Trail (285 LF)**			**$5,249**
	A. Excavation	70 CY	3.00	$210
	B. 1" ID2 Wearing Course	255 SY	5.00	$1,275
	C. 2" ID2 Binder Course	255 SY	5.00	$1,275
	D. 6" 2A Coarse Aggregate	255 SY	9.00	$2,295
	E. Fine Grade and Compact Shoulders	1,140 SF	0.17	$194
5	**Plaza Areas**			**$249,930**
	A. Concrete Pavement	5,970 SF	7.00	$41,790
	B. Decorative Pavers	5,970 SF	12.00	$71,640
6	**Retaining Walls**			**$66,250**
	A. 24" Wall along Southern Edge of Garden	1,325 SF	50.00	$66,250
7	**Signage**			**$4,000**
	A. Information Signage	1 EA	4,000.00	$4,000
8	**Water Line**			**$36,350**
	A. Water Well	1 EA	25,000.00	$25,000
	B. Water bibbs/hydrants	1 EA	1,000.00	$1,000
	C. Water Pipe and Appurt	230 LF	45.00	$10,350
9	**Site Amenities**			**$22,100**
	A. Benches	12 EA	1,200.00	$14,400
	B. Trash Receptacle	3 EA	900.00	$2,700
	C. Water Fountain	1 EA	5,000.00	$5,000
10	**Buildings and Pavilions**			**$63,000**
	A. Gazebo with Pad	1 EA	25,000.00	$25,000
	B. Medium Picnic Pavilion with Pad	1 EA	38,000.00	$38,000
11	**Site Electrical**			**$21,250**
	A. Site Electric Service	- LS	0.00	$0
	B. Pavilion and Trail Fixtures and Appurt.	1 LS	20,000.00	$20,000
	C. Trenching for Conduit/Service	250 LF	5.00	$1,250
12	**Landscaping**			**$36,794**
	A. Lawn Seeding	22,050 SF	0.07	$1,544
	B. Evergreen Trees	5 EA	250.00	$1,250
	C. Shade Trees	10 EA	350.00	$3,500
	D. Flowering Trees	12 EA	250.00	$3,000
	E. Shrubs	150 EA	50.00	$7,500
	F. Perennials / Grasses	1 LS	20,000.00	$20,000

13	**Contingency**			**$75,249**
	A. 15% Contingency	1 LS	75,249.35	$75,249
14	**Bond Mobilization and Layout**			**$69,229**
	A. Bond Mobilization and Layout (12%)	1 LS	69,229.40	$69,229
15	**Professional Fees**			**$64,614**
	A. Design and Engineering (10%)	1 LS	64,614.10	$64,614
	Total			**$710,755**

Cost estimate does not include any utility connection fees, utility location and/or relocation, improvements to existing roads and intersections, electric service to site, future sanitary pipe connections, soil amendments, rock excavation, and construction inspection fees.

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

Chapter 7

Operations, Management and Financing

Introduction

The Kings Highway Park master plan continues Caln Township's commitment to excellent public service through public parks and recreation. The park maintenance management plan for Kings Highway Park is based upon the previous work developed as part of the Lloyd Park Master Plan. In that plan, the Township launched its first professional park planning effort. Following the Lloyd Park Master Plan, the Township created a full-time professional parks and recreation department, established a park maintenance division, purchased the golf course, and started the phased development of Lloyd Park. The Township is also contracting grass mowing as a step towards greater economy and cost control. The management plan for Kings Highway Park builds upon the accomplishments of Caln Township as it looks ahead in a holistic manner to parks and recreation operations overall. The Township has taken the next step beyond the performance of isolated tasks to managing the parks and recreation system comprehensively. Dedicated park maintenance is still a relatively new management approach. It is essential to generate data and undertake information analysis to enable the Township to plan, direct, control, and evaluate park operations, management, and public service.

Purpose of the Operation and Management Plan

Maintenance is the single largest recurring expenditure in parks and recreation. Over the lifetime of a park, about 75 percent of its cost is in maintenance while approximately 25 percent is in acquisition, development, design and construction (Lay, 1978).[1]

This operations and maintenance plan sets forth a strategy for managing the park once it is developed. The plan should serve as a working document to be used as a guide in maintaining the park, allocating financial and human resources, and then revised as information is developed as part of a workload cost tracking system for this and other Township parks. The following topics will be addressed in this chapter:

- Kings Highway Park Vision and Mission.
- Community Recreation Opportunities.
- Maintenance and Security.
- Management Recommendations.

[1] Lay, Francis. 1978. Management of Grounds or Site Operations Manual, **Manual of Site Management**, Environmental Design Press. p4.

Kings Highway Park Vision and Mission

Kings Highway Park

Vision Statement

Kings Highway Park is a natural resource based park in Caln Township. The park offers the people of Caln Township the opportunity to enjoy and appreciate the scenic beauty, solitude, and environmental features of a natural area close-to-home. The park offers a place for citizens to connect with nature in the great outdoors through recreational experiences such as walking, hiking, playing, rest and relaxation, wildlife watching, environmental education, and disc golf.

Mission Statement

Caln Township is dedicated to conserving and managing the natural features of Kings Highway Park while providing opportunities for citizens to experience nature and enjoy their free time. A primary goal of the Township is to foster the stewardship of the natural environment by providing and promoting opportunities for the citizens to engage in lifelong recreational pursuits in a natural environment. The Township is committed to managing the natural resources of this site with environmentally sensitive practices that will result in a safe, clean, and attractive community asset.

Nature Based Recreation Opportunities

The 91-acre Kings Highway Park's significance will continue to grow over time as this part of southeastern Pennsylvania experiences development pressures. As land gets developed, a natural area of nearly a hundred acres will be seen as an oasis. Kings Highway Park complements the Caln Township's parks and recreation system. Lloyd Park, Caln Municipal Park, Caln Park West, Dawkins Park, and the golf course serve active recreation pursuits. This park will serve people of all ages and abilities with recreational opportunities that are among the most popular in America: walking, wellness, socializing with family and friends, and enjoying nature.

Kings Highway Park Conservation and Recreation Opportunities

As a nature focused park, Kings Highway Park will conserve the natural features and provide recreation opportunities that are in harmony with the natural environment. While it will be possible to hold a variety of programs and environmental education, the greatest value of the site is that it will enable self-directed recreation, wellness, individual, and family experiences in the great outdoors. Current recreation trends show that most organized scheduled programs are on the downtrend while self-directed non-scheduled recreational activities are gaining in popularity. Kings Highway Park supports this trend.

Open Space and Linkages - Kings Highway Park preserves open space and offers value to citizens whether they use the park or not. Properties located near open space have higher values than properties farther away. The park offers scenic beauty, preservation of natural resources, and would be a hub on a future township trail network.

Nature Areas - The park design retains as much of the natural features of the site as possible. The ecology of the site offers the opportunity for both aquatic and woodland environmental education. Providing children the textures, smells, beauty, and wonder of nature as they develop lifelong learning skills, that have lifelong benefits.

Boardwalk and Environmental Education Station - The environmental education area of Kings Highway Park offers the opportunity for both Township and school district programs. There is convincing evidence from ongoing research that positive, age-appropriate experiences with nature bring significant benefits to children, such as:

- Better powers of observation and creativity.
- Improved ability to concentrate among all children, even those with attention deficit disorder.
- More advanced motor skills such as coordination, balance, and agility.
- The development of imagination and sense of wonder which are motivating factors for lifelong learning

Fitness/Wellness - Fitness extends lives, improves self-image, reduces health care costs, reduces isolation, and makes people happier. According to the U.S. Surgeon General, the top public health issue is the lack of activity among the American public. One of the most important things that communities can do to help in this cause is to provide attractive, accessible areas for people to walk. Walking is the number one fitness activity in the nation. Anecdotal information based on observation of many people walking in Caln Township supports this fact. The park features two miles of scenic trails.

Family Play - Centrally located in the park, the playground, separated for pre-schoolers and youth, is expected to be a destination for people of all ages, from young children to grandparents for visits with their grandchildren. Anticipated playground visitors include citizens using the tot lot on a daily basis, people in groups reserving pavilions, school groups, and families. The future design of the playground should have a theme based on nature and the environment to foster stewardship of the park and nature. Research shows that recreation is one of the strongest factors in building healthy family bonds.

Self-Directed Activities - With the hectic lives we all lead, having a place to go on our own is important. Kings Highway Park offers an important respite for people to enjoy on their own terms at their own pace whenever they want. Nature-oriented parks provide the

opportunity for citizens that they cannot get in any other aspect of their lives: a place to reduce stress. Stress is a leading cause of illness in society today. Parks are also one of the few places people can enjoy hours of free time without spending any money. This is particularly important to children, families, and senior adults.

Trails/Trail Hub - Kings Highway Park has areas for walking and running. Walking is the chief form of exercise in the United States. The Center for Disease Control has called upon communities to develop safe and attractive pathways for people to use throughout their lifetime. This will help people of all ages to engage in a healthy activity that will extend their lives and enable them to be healthier, happier and more productive citizens. The park will also serve as a future trail hub.

Pavilions and Picnicking - To expand service to the public with popular group outings, Kings Highway Park will offer picnic pavilions that can be rented. The pavilions in other Township parks are booked during peak times. The pavilions in this park will help to meet community needs. Informal play areas along with the playground within the beautiful natural setting will be highly desirable places for community outings.

Amphitheater - A small amphitheater will offer a venue for small scale programming in the performing arts. A goal of the project would be to establish an amphitheater or performing arts friends' group dedicated to using the location for public performances.

Wedding Garden - The wedding garden is a park hub designed to capture the scenic beauty of the area and serve as a location for citizens to photograph their special family events such as weddings. The Township will maintain and promote the site but will not schedule it or charge any fees for its use. It will be a drop-in non-scheduled area.

Disc Golf - The nine-hole disc golf course offers a new type of recreation opportunity in the area. Disc golf is a compatible activity in a nature oriented park and in fact requires a natural area for the most preferred type of course. The concept of the course is rooted in partnership potential to maximize the quality of the course while reducing maintenance demands. There are several organizations in the area that could help to start up a disc golf friends' group that could help to plan, develop, maintain, and program the course.

Restrooms - The restrooms will serve general park visitors, group outings, and provide support for school educational programs. So far the Township has had very few problems with its restroom facilities in other parks.

Park Security and Maintenance

Having safe facilities for visitors as well as protecting the public investment is essential to Caln Township. Public perception that the parks are safe is important to their success. As part of establishing safe parks that limit the Township's exposure to liability, effective risk management can help to protect both park visitors and the Township.

Risk Management is a standard operating practice of parks and recreation agencies. Risk includes the possibility that harm could result from a hazard that would cause personal injury, death, property damage, economic loss, or damage to the environment. To manage risk in Kings Highway Park, three management steps are needed:

- **Risk Identification and Assessment -** It is necessary to identify all of the sources of potential hazards in the park. The Township needs to have knowledge at all times of any risk related to the park. This includes park conditions, the employees or volunteers that might make the Township subject to liability as the result of how they complete their duties, and any other liability of the Township Parks and Recreation Department.
- **Risk Assessment -** The Township could work with its insurance carrier, DVIT (Delaware Valley Insurance Trust) to evaluate the park and departmental operating practices to assess the probability of risk in the park. This would also include tracking of the Township's incidents of injury reported for the park and expert opinions of Township staff and the insurance carrier.
- **Risk Management Plan -** The Risk Management Plan is important for both safe operations as well as in establishing credibility in case of litigation. DVIT provides assistance and even grants to undertake such planning projects. The plan should include the following documents all of which should be reviewed by the Township Solicitor:
  - Statement that the Township is committed to safety for citizens, Township employees and Township facilities.
  - Program registration information.
  - Accident forms.
  - Health forms if appropriate.
  - Participation forms and waivers.
  - Rental agreements and leases.
  - Program dates and documents.
  - Operations information and policies.
  - Reports for maintenance and procedures.
  - Inspection program and reports.

Benefits of Park and Recreation in Caln Township

Economic benefits
Attracting and retaining businesses; increasing property values through parks, trails, natural resource conservation, and scenic beauty; and contributing to a more productive work force.

Environmental benefits
Protecting natural areas, open space, enhancing water and air quality, and contributing to overall community livability.

Social benefits
Building strong families, reducing alienation, and loneliness, promoting racial and cultural harmony, providing equitable opportunities to all people in the community regardless of their financial abilities, and providing positive alternatives to anti-social behavior.

Individual benefits
Strengthening self-esteem and self-image, improving fitness and wellness, and reducing stress.

Planned Maintenance Management: A Tool for Risk Management

Routine scheduled maintenance provides the foundation for effective park security and risk management. A park that is well designed and maintained attracts visitors. The more use a park gets, the less vandalism occurs. When park visitors see a facility is well cared for, the risk of vandalism and other undesirable social behaviors tends to diminish. Parks that are not well tended get fewer visitors and higher levels of vandalism.

Maintenance management is the process by which Caln Township plans, directs, and controls the care of the park and recreation facilities. Kings Highway Park should reflect an effective level of service; an inviting, clean, and attractive appearance; and the reality of fiscal and human resource limitations of the Township. Caln Township has experience in park maintenance in Caln Municipal Park, Caln Park West, and Dawkins Park. Lloyd Park has not yet been developed. The maintenance management plan for Kings Highway Park builds upon the Township's experience with park maintenance and the addition of a full-time professional parks and recreation department along with the Township's park maintenance division.

Management Challenges and Opportunities

A New Kind of Park: Nature Based - Kings Highway Park is a different kind of park than the other municipal parks, which provide mainly active recreation facilities. This park is a natural area. Maintenance of natural areas is quite different from active parks that require a more manicured approach to facilities. The development of expertise in natural resource management would benefit the Township in the care of this park as well as natural areas in other municipal properties.

Growing the Parks and Recreation Organization - Caln Township has established two new management entities for parks and recreation: a Parks and Recreation Department and a Parks & Properties Department. The Parks & Properties Division operates independently from the Parks and Recreation Department. The Township's commitment to parks and recreation resulted in the hiring of a professional parks and recreation director, the parks and properties director, and a laborer, as well as two full-time season employees for park maintenance from May to September.

Volunteers - Caln Township is a model of volunteerism in parks and recreation. The Parks and Recreation Board provides significant support for parks and recreation in the community. Eagle Scouts supply labor for many park improvement projects. Volunteers are often considered the means to managing parks and recreation at the least cost. Consideration of expanded volunteer efforts for Kings Highway Park merits consideration for environmental education stations and the disc golf course.

Although volunteers are important, they are not free. Volunteers for defined tasks or programs require recruiting, training, supervision, coordination, support, and recognition. Someone has to be in charge of overseeing volunteers. Policies need to guide volunteerism; otherwise volunteer efforts can get out of hand and run counter to the public good with respect to park operations. Effective policies and policy implementation goes a long way in facility care, preventing user conflicts, and assuring equitable use of public space.

Partnerships - Partnerships are the wave of the future in parks and recreation. Government cannot provide all of the services and facilities needed for 21st century community recreation. Three particular facilities in Kings Highway Park lend themselves to partnerships: the amphitheater, the disc golf course, and the environmental education stations.

- **Amphitheater** - While the amphitheater is small in keeping with the passive theme of the park, partnerships could be formed to plan, develop, operate, and program the amphitheater. The partnerships could include a group dedicated to the amphitheater or an alliance with an existing performing arts group in the region.
- **Disc Golf Course** - Several groups in the area can help with the disc golf course. The "Dead Dogs" is a group dedicated to maintaining the disc golf course in French Creek State Park. They have also assisted Chester County in county disc golf course planning, development, and operation. Interviews for this master plan project revealed that assistance would be available from this and related groups for the course in Kings Highway Park.
- **Environmental Education Station** - Partnerships could be formed with Chester County Parks Department for potential nature programming here as a satellite to the nature centers in county parks. Another partnership option is with the Coatesville Area School District. Environmental education is a required element of public education. Having a natural area right within the Township offers a convenient and less costly destination for field trips for environmental experiences for the students than sites farther away, which require extensive travel time and cost escalation with gasoline price increases.
- **Creating Connections to the Outdoors** - Governor Rendell has established an initiative dedicated to strengthening the bond between citizens and the natural environment. He has held conferences throughout the state in 2007 and appointed a task force charged with giving a report by year's end on their recommendations for how to create such connections. This would be an important initiative to track via the Pennsylvania Department of Conservation and Natural Resources (PADCNR) WEB site and regional advisers as demonstration projects and potential funding might result from this initiative.

Next Steps for Caln Township's Parks and Recreation System

The relatively new Parks and Recreation Department and the Parks & Properties Department are a major step forward in establishing a community parks and recreation system. To keep pace with citizen demands and expectations, as well as, to allocate resources effectively, building/enhancing capacity and expertise in the functional areas of park management is crucial. This would include the establishment of a planned maintenance management system, staff certification as playground safety inspectors, and natural resource management.

The Importance of Counting

American Airlines saved $47,000 annually by eliminating one olive from the salads served in the first class cabins.

The New York Times saved $200,000 annually by eliminating one period in its masthead and the ink needed for this punctuation point.

Montgomery County Parks & Heritage Services saved nearly the equivalent of one full-time maintenance worker by eliminating the chopping of wood in one park.

Planned Maintenance Management System - Developing solid real time facts and figures for workload cost tracking is essential to park management. A potential way to develop such a system is by applying for a Peer grant from Pennsylvania Department of Conservation and Natural Resources (PADCNR) to develop a planned maintenance management system. Under this program, Pennsylvania Department of Conservation and Natural Resources (PADCNR) awards a grant of $9,000 to the municipality to be matched with $1,000. The Township can then retain a park professional with experience and expertise in developing planned maintenance systems to assist the Township park management team in creating such a system. Peer projects generally take about a year. The purchase of a software program to track park maintenance labor, materials and equipment would facilitate data collection and information management long term.

Playground Safety Inspector Certification - The Pennsylvania Recreation & Park Society (PRPS) offers a two day training and testing for certification in playground safety. Sending two employees for certification would enable the Township to have consistent resources available for inspection of playgrounds.

Natural Resource Management - Developing expertise and a plan for natural resource management would enable the Township to effectively conserve the natural resource areas in this and other parks and public properties. The steps to move ahead on this recommendation include:

- Asking the Penn State Extension Service to visit the park with the park management team to obtain some feedback and directions on how the Township can create and implement a natural resource program for this park.
- Monitor the training programs from Pennsylvania Recreation & Park Society (PRPS) and the Penn State Extension Service to send staff to participate in such training programs.
- Use the National Recreation & Planning Association's (NRPS) Natural Resources Management Training Coalition (NRMTC) as a source for natural resource management and training. This organization exists to facilitate better and more efficient delivery of training and professional development opportunities for recreation and natural resource managers. Natural Resources

Management Training Coalition (NRMTC) is a confederation of professional organizations interested in protecting natural resources, while promoting their recreational use. Representatives of member organizations work collaboratively through the Natural Resources Management Training Coalition (NRMTC) to:

- Assess training needs and preferences for training delivery options of professionals within member organizations.
- Increase awareness of training opportunities among member organizations and others by serving as a source of information on pertinent training opportunities.
- Support and promote training activities offered by various organizations through the dissemination of information among member organizations.
- Support the development and delivery of training in critical areas of professional development, which are not available elsewhere.
- Actively pursue additional sponsorship funding for professional development activities from foundations, agencies, and institutions with the common goal of serving recreational needs while protecting the health and viability of the natural resources upon which recreational activities depend.

The Natural Resources Management Training Coalition (NRMTC) Web site is the organization's primary outreach and educational tool.

Maintenance Goals

The maintenance goals for Kings Highway Park build upon those established in the Lloyd Park Master Plan and adapted to focus on natural resource conservation. They include the following:

The goal of park maintenance of Kings Highway Park is to conserve the natural resources and provide a clean, orderly and attractive appearance for the healthful, safe and enjoyable use by the community through implementation of an efficient and effective management program.

The following guidelines can formalize the Township's approach to park maintenance operations. The guidelines would apply to both Township employees and contractors and for volunteers who assume responsibility for park maintenance tasks.

- All maintenance will be accomplished in a manner displaying respect and concern for the environment as well as public and private property. Maintenance practices that are rooted in a strong conservation ethic are to be instituted.
- Maintenance tasks will be accomplished in a way that does not endanger the health or safety of the employees or the public.

- All maintenance tasks will be performed as quickly and economically as possible without any loss in efficiency.
- All equipment and materials will be operated and maintained in such as way as to insure safe, effective use and long life.
- Work will be scheduled in such a manner as to make the most use of the resources of other community organizations who are involved or who may become involved.
- Preventive maintenance will be used in a continuing effort to avoid major problems and correct minor ones.
- All maintenance work will be performed with a sense of pride.

Maintenance Standards

Maintenance standards set forth the level of care that park and recreation facilities receive.

Maintenance Standards

The goal of park maintenance is: to provide a clean, orderly and attractive appearance of Kings Highway Park for the conservation and natural and cultural resources as well as the healthful, safe and enjoyable use by the community through implementation of an efficient and effective management program.

Importance of Assigning Maintenance Standards

Assigning maintenance standards will enable the Township to maintain Kings Highway Park in conjunction with the other Township parks with respect to needs and resources. Targeting the level of care will enable Caln Township to direct resources to the highest need that balances resource conservation with an appropriate level of park use. The maintenance standards provide a common frame of reference for all involved including contractors, maintenance staff, administration, partners, sponsors, park visitors, and the citizens. The common agreement will facilitate discussions and communications about the park. This will enable elected and appointed officials and parks and recreation management to set policies on use, fees and charges, volunteer requirements, staffing levels, contractual service requirements, and other issues that may emerge. It will also enable the Township to communicate with the public about natural resource protection, park maintenance requirements, and the capacity of the Township to undertake additional citizen demands on the park.

The public has a tendency to want a manicured appearance in community parks. Kings Highway Park is a different kind of park in Caln Township. The management of this park will require public education to create community understanding that natural resource conservation is the top priority of this park. More natural maintenance is vital here for effective wildlife and habitat management. It is essential to inform the public about the requirements for effective maintenance as well as for naturalized maintenance. The key is establishing appropriate levels of care for natural areas and the identified public spaces. It is better for both nature and the budget!

National Standards: An Approach

Building upon the standards framework established for Lloyd Park, Kings Highway Park will incorporate the same type of standards. The NRPA[2] offers a classification system for maintenance standards with six modes. Modes refer to the "way of maintenance" ranging from most intensive to least intensive. Most of Kings Highway Park will be maintained at the Mode V or Mode VI level. Caln Township can use the modes as guidelines to direct resources towards where the need is greatest and the benefit the most. The modes range as follows:

- Mode I - State of the Art Maintenance.
- Mode II - High Level Maintenance.
- Mode III - Moderate Level Maintenance.
- Mode IV - Moderately Low Level Maintenance.
- Mode V - High Visitation Natural Areas.
- Mode VI - Minimum Level Maintenance.

Maintenance requirements and costs are not yet tracked within the new Township departments. Developing and implementing a workload cost tracking system is essential for effective management and informed decision-making. In keeping with Caln Township's investment in Lloyd Park, the following standards are proposed:

Turf Care - Modes VI and III: Mode VI: No mowing in park natural areas. Mode III: Mowing every seven days for identified areas such as around the pavilions, playground edges, and amphitheater, restrooms, and parking areas. A strip adjacent to meadows would also be mowed. No mowing would be done within 35 feet of the stream's edge.

Litter Control - Consider adopting a "Carry In Carry Out" policy for trash. This would mean that park visitors carry out whatever trash they bring in. This would apply to groups such as day care centers using the park. There would be no trash cans in the park. The Parks & Properties Department would provide trash bags to pavilion renters who would then place their trash bags in dumpsters provided by the Township. The Township would provide trash barrels for events or services the Township conducts that would generate trash such as concerts in the amphitheater or concession sales operated by the Township. A major public education campaign would be instituted to educate park visitors about this policy. Federal, State and County park systems have instituted such a policy with success. Kings Highway Park would be a good test park for Caln Township because the park is a nature based park and transitioning to this policy over time is suggested. A traditional approach to litter pick-up would be the following:

[2] National Recreation and Park Association. (1986). **Park Maintenance Standards**. Alexandria, VA. 59p.

Mode I - Litter is picked up daily during peak season, twice a week during non-peak. For special use facilities such as a picnic pavilion, the permit holder should be responsible for litter pick-up while Caln Township would remove it from the park. This would cost from $9,000 to $12,000 annually.

Forestry - A forestry management program should be developed. The forestry program would provide a short, medium, and long-range management program for this important asset of Kings Highway Park. This could be part of an overall Township park forestry program.

Disease and Insect Control - Mode III. When the health or survival of plant materials is threatened or there is an issue of comfort of park visitors control measures may be taken. Disease and insect control is done usually on a complaint basis.

Surfaces and Paths - Mode II. When appearance has noticeably deteriorated, the surfaces should be cleaned, repaired, or replaced. As with other parts of the trail system, the boardwalk should be checked at least annually; more frequent evaluation is recommended. This may represent the greatest safety hazard on the trail, and careful inspection and maintenance are essential. All connections should be checked for tightness. Lumber, planks and logs should be monitored for cracking or rot and must be replaced if there is any likelihood of the structural component failing in the near future.

Periodic treatment of wood components with paint or preservatives every three to five years should substantially prolong the life of the structure depending upon the type of wood chosen. The type of wood selected by municipalities is based upon several factors including cost, maintenance requirements, and source of wood (certified forest management practices). The Forest Stewardship Council certifies wood from responsible harvesters. Steel beams, cables, or other hardware should be treated with rust-resistant paint.

Repairs - Mode III. When safety, appearance or function is an issue, repairs are made.

Inspections - Mode I - Park inspection should be done daily during peak season.

Inspections - Playground - Playground inspections should be based upon Consumer Product Safety Commission guidelines (CPSC). The equipment manufacturer generally provides inspection sheets for use by municipal employees. These should be used as the record keeping system for Caln Township and properly filed to document maintenance performed by the Township. Consideration could be given to getting the inspections done in a number of ways. The options include:

- Contracting with a certified playground safety inspector.
- The preferred option is sending two identified employees from the Parks and Properties Department for training and

certification. The program is a two-day program culminating a test that leads to Playground Safety certification. The advantage of having an in-house employee(s) being certified is primarily cost savings, record keeping, and in house expertise. Should the Township ever be sued for a playground injury, regular inspections by a certified inspector would reduce the Township's exposure to liability. Having two employees certified would enable smooth transitions between staffing changes.

Amphitheater - Mode II. The amphitheater should be cleaned before and after all special events. Trash picked up and removed after all events.

Disc Golf Course - Mode III. To be maintained by volunteer disc golf course group.

Tree and Shrub Care - Mode III. When required for health or reasonable appearance. With most tree or shrub species this should not be more than once every two to three years.

Environmental Education Station and other outdoor learning sites - As part of outdoor learning and building future park stewards, these sites should be operated in conjunction with program providers. All trash should be carried out of the park.

Restrooms - Mode I. Should be done at least once per day. Special events or times of high use may warrant more than one service per day.

Maintenance Budget Based on Standards

In order to estimate a budget for maintaining Kings Highway Park, projections are based upon national standards, Township experience, and cost tracking for labor, materials, and equipment. Maintenance requirements will be projected. In any mathematical calculation, adjustments need to be made, as more specific information about work hours, task time, and equipment becomes known.

The following information is presented as an estimate and departure point for formalizing a maintenance management plan for Kings Highway Park. This is based upon the maintenance standards presented above and preliminary information provided by Caln Township. Table 7.1 presents the cost estimates for labor and equipment by task and frequency for paid labor.

Cost Basis

The maintenance wage rates ranges for 2007 are set at the current hourly wage rates for Parks & Public Properties and 49 percent of the hourly rate for benefits:

- $30 for the supervisor with 49 percent benefits rounded up equals $45.
- $25 for workers with 49 percent benefits rounded up equals $38.

- $10 for seasonal employees with 10 percent payroll requirements equals $11.
- $25 as wage averaging to allow for the task performed by full-time staff and seasonal staff. For example the litter task would be performed by the seasonal in June, July, and August, while the full-time staff would perform this task at all other times.

Table 7.1
Kings Highway Park
Maintenance Tasks: Labor and Equipment

Cost Formula		Work Hours X Frequency X Hourly Rate = Total Cost				
Task	**Units**	**Work Hours by Task**		**Frequency X Hours**	**Hourly Rate**	**Total Cost**
		Unit/hrs.	**Total hrs**			
Inspection	Park	2	2	2 X 52=104	$45	$4,680
Mowing						
Labor	15 acres	3/hr	5	20 X 5 = 100	$38	$3,800
Equipment		″		″	$35	3,500
Meadows						0
Labor	70 acres	1/1.25 hrs	87.5	2 X 87.5 =175	$38	6,650
Equipment				2 X 21.25=42.5	$35	1,488
Total Mowing						$15,438
Trimming						
Labor	20,000 LF	1,000/hr	20	10 X 10 =100	$38	$3,800
Equipment	″	″		″	$12	1,200
Total Trimming						$5,000
Litter Control						
Pick-up Labor	Focus Points	8 hours	8 0	30 X 8 = 240	$25 avg	$6,000
Equipment				30 X 8 = 240	$12	2,880
Transfers -Labor	14 barrels	1/1/4 hr.	3½ hr.	60 X 3½ =210	$25	5,250
Equipment	″	″	″	″	$35	7,350
Total Litter Control						$21,480
Tree & Shrub Care						
Contract	Park area	Cyclic				$4,000
Trails						
Boardwalk*	780 LF					$6,000
Annual Preparation	Depends on type of wood used for construction. Work includes annual spring inspection and replacement of boards and support in poor condition as well as a monthly inspection of all supports and surfaces. Cost estimates ranges from $6-8 per linear foot.					
Routine						
Bituminous						
Labor	11,532 LF	5 hrs/1500 LF	39	1 X 39 = 39	$82(2)	3,198
Equipment			39	1 X 39 = 39	$35	1,365
Total Trails						$10,563
Wedding Garden						
Develop a maintenance impact statement when this portion of the park is designed. The maintenance associated with this could vary very widely depending upon the formality of the garden.						TBD

Table 7.1 Continued Kings Highway Park Maintenance Tasks: Labor and Equipment						
Cost Formula		Work Hours X Frequency X Hourly Rate = Total Cost				
Task	**Units**	**Work Hours by Task**		**Frequency X Hours**	**Hourly Rate**	**Total Cost**
Picnic Facilities						
Benches, tables						
Annual Preparation	40	4 hrs/unit	160	1 X 160 = 160	$33	$5,280
Routine	40	.25 hrs/un.	10	3 X 10= 30	$33	990
Grills						
Annual Preparation	1	4 hrs./unit	4	1 X 4 = 4	$33	132
Routine	1	.8 hrs/unit	1	5 X 1 = 5	$11	55
Picnic Pavilion						
Labor	2	1.5/unit avg	3	20 X 3 =60	$11	660
Total Picnic						$7117
Playground						
Inspections	2	2 hrs/unit	4	36 X 4 = 144	$45	$6,480
Repair/Prep	2	20 hrs./unit	40	1 X 40 = 40	$33	1,320
Total Playground						$7,800
Amphitheater & area						
Labor	1	2/unit	2	15 X 2 =30	$11	$330
Disc Golf						
Labor	Volunteer maintenance from disc golf group					
Restrooms						
Labor	2 (M & F)	1.5/unit	3	100 X 3 =300	$25 avg	$7,500
Water Fountain						
Turn on/winterize	2	1.5/unit	3	1 X 3 =3	$33	$99
Check/repair	2	.5/unit	1	4 X 1 =4	$33	132
Total						$231
Parking						
Labor	7500 SY	.1/1,000 SY	1	6 X 1 = 6	$38	$228
Equipment	"	"	"	"	$35	210
Total Parking						$438
Plaza						
Labor	5970	.15/1,000 SF	1	7 X 1 = 7	$25	$175
Equipment	"	"	"	"	$12	84
Total Plaza						$259
TOTAL						
Labor - routine						$62,759
Labor- non scheduled					$25 avg	4,325
Equipment					18,077	18,077
Outside contract						4,000
TOTAL						$89,161

Staffing and Organizational Implications

The required work hours total about 1,726, the equivalent of about 43 workweeks of 40 hours annually, about 82 percent of a full time person. It is important to consider however that the tasks are cyclical with peak and non-peak seasonal requirements. Workload is high in the spring, high to moderate in the summer and fall, and less intense in the winter. It is important to note that parks with a nature focus are used year round.

These projections serve as a benchmark to track progress as park maintenance develops a history of actual time and expenses for Kings Highway Park in tandem with this type of information for the other parks. As the Township develops Lloyd Park and Kings Highway Park, the workload will increase. Without a workload cost tracking system in place, it is impossible to say whether the workload for this park could be absorbed by the current staff. In addition, the park will be phased in with a total of five phases. Maintenance responsibilities will increase incrementally – not all at once.

As staff is hired, it will be important for the Township to spell out the type of qualifications needed. Expertise in natural resource management would be important as the Township develops this park and moves ahead into more natural resource management in the municipal parks and recreation system.

Two aspects of the park lend themselves to maintenance by outside resources: the disc golf course and the amphitheater. Getting a friends group or a partnership(s) for the amphitheater would have the added bonus of having a group schedule and run the performances. Outside contracting could be used for three areas of park maintenance: mowing, tree care, and restroom cleaning. The Township already contracts out grass mowing.

Should the Township decide to open and close the park gates, that task should be negotiated as a police task. The alternative is to hire a person for this function. This is a very difficult job to fill.

Cyclic Maintenance

In addition to daily, monthly, seasonal, and annual repairs, the park requires cyclic maintenance repairs. Cyclic maintenance deals with the normal replacement of a capital item such as a roof. Cyclic repairs are a function of weather, use, and other circumstances such as natural events. The cyclic repairs are shown in the following table. Because the time frame is years away, projecting actual costs is not possible. The American Public Works Association recommends budgeting two to four percent of the development costs annually to establish as a capital reserve account for cyclic repairs. Advances in technology will also impact the future costs based upon changes in design and materials.

Table 7.2 Kings Highway Park Cyclic Repairs	
Item	Time frame
Pavilions	20 years
Re-paving	15 years
Boardwalk replacement	Depends on type of wood selected
Playground	10 years
Furniture	15 Years

Financing Kings Highway Park

Table 7.3 presents the projected budget for Kings Highway Park. This budget comes out to about $1,216 per acre cost. This is in line with similar nature based parks with the majority of the site left natural with much less acreage developed.

Table 7.3 Kings Highway Park Estimated Operating Budget	
Personnel	$62,768
Equipment	22,714
Non-routine maintenance	1,726
Insurance	Under township contract
Patrolling	With township police force
Park Material and Supplies	8,000
Tree Care Contract	4,000
Utilities	1,500
TOTAL	$100,708
Contingency	10,000
TOTAL	$110,708
CIP Reserve Budget – 2% of development costs *annually* in fund dedicated to cyclic repairs and park improvements.	Phase 1 = $38,604 Phase 2 = $17,127 Phase 3 = $12,598 Phase 4 = $13,857

Table 7.4 presents the revenues for Kings Highway Park. This park is intended to be largely passive with very limited programming. The disc golf course has potential to generate revenues with scheduled activities. However with nine holes tournament potential may be limited.

Table 7.4 Kings Highway Park Potential Revenue Sources	
Item	Projection
2 Pavilions - rental at $30 (average) per day for 40 days.	$2,400
Sponsorships – disc golf events, amphitheater performances	1,000
Potential program fees from two special events.	1,000
TOTAL Projections	$4,400

Management and Security Recommendations for Kings Highway Park

Caln Township could consider the following strategy for enhancing the operation, management, and financing of Kings Highway Park in concert with the parks and recreation system overall:

A. Develop a formalized maintenance management system. Consider applying for a Peer grant from the Pennsylvania Department of Conservation and Natural Resources for this purpose. Appropriate $1,000 as the match for this project. Investigate maintenance management software used in other departments. Along with the software, consider using a system supported by PDA's to develop reports in real time and eliminate paper work.

B. Develop a plan for housing the park equipment including a new maintenance building or adapting the barn for re-use as a park equipment building.

C. Consider using Kings Highway Park as a test site for a "Carry In Carry Out" trash removal policy. Develop educational materials, signage, and articles for outreach and increased public awareness and understanding about this policy.

D. Coordinate with the Police Department regarding patrolling and protection. Arrange to have the gates opened and closed on an agreed upon schedule.

E. Adopt a formalized statement regarding programs for this park. The emphasis is on self-directed nature based recreation. Consider having nature camps in the summer.

F. Promote the park so that citizens are aware of this wonderful natural area close to home.

G. Continue to implement the policy of repairing vandalism within 24 hours.

H. Contact the disc golf groups in the area to plan, develop, operate, and program the disc golf course. Develop a Memorandum of Understanding with any groups that will work with the Township on the disc golf course. Visit with the Chester County Parks Department managers to learn about their experience in launching disc golf course in the county parks.

I. Contact the Delaware Valley Insurance Trust (DVIT) for assistance with the development of a formal risk management plan. Consider asking DVIT for a grant to offset the Peer Maintenance project. This may generate additional funds for exploring or purchasing maintenance management software.

J. Arrange an appointment with the Penn State Extension Service and the Chester County Conservation District for

assistance in developing a natural resource management plan for Kings Highway Park. This would include dealing with invasive species on-site.

K. A fund for capital park improvements should be established. This should be 2-4 percent of the capital improvement costs of park development.

L. When the Recreation Department gets additional staff, consider adding an environmental program area. This would include developing partnerships with the Coatesville Area School District regarding environmental education and Chester County Parks Department for nature programming in Kings Highway Park as a satellite to the county nature center programs.

M. Monitor the Governor's program to re-connect Pennsylvanians with the great outdoors and nature. Support materials and programs may be generated through the work plan to be established by the end of 2007.

N. Develop a promotional plan for Kings Highway Park to let citizens know that they can go here to walk, enjoy nature, see wildlife, and de-stress. In the advertising, include photos of senior citizens using the park as a way to inspire other senior adults to get out and use the park.

O. Adopt the use of the following Maintenance Impact Statement for projects or programs that could have a major impact on staffing, maintenance requirements, programming, and department functions overall. An example of where this could be applied is the Wedding Garden.

MIS
Management Impact Statement

Purpose

1. To assess the impact of a proposed project in terms of capital and operating costs including cost, human resources required and effect on other parks and recreation facilities and services.
2. To use this information to make an informed decision about moving ahead with the proposed project.

Method

Determine:

1. Capital cost of the proposed project.
2. Operating costs for the proposed project. Include:

- Number of staff hours required
- Cost of the staff hours
- Cost of materials and supplies
- Miscellaneous costs

3. Impact on other facilities and programs should the proposed project/service be implemented.

- Will the project/program/event require funds needed for other facilities/programs?
- Will the project/program/event require staff time needed for other services/programs?
- How will the project impact the quality of service that Caln Township has set as a goal?

4. Revenue Sources

- Grants
- Donations
- Township(s) funds – additional appropriation
- Township(s) funds – within current budget
- Non-tax funds to be generated from the project/program

Decision-Making

Based upon the above information, does Caln Township have the resources to move ahead with this project?

RESOLUTION NO. 2008-17

A RESOLUTION CLOSING OUT COMMUNITY CONSERVATION PARTNERSHIPS GRANT PROJECT (BRC-12-5-26)

WHEREAS, the Caln Township has
(Name of grantee)

prepared a Master Site Plan for the
(Type of plan)

Kings Highway Park area; and,
(Name of the area/facility)

WHEREAS, the purpose of the Plan is to help plan for future park construction; and,

WHEREAS, the Plan was financed in part by a Community Conservation Partnerships Program grant under the administration of the Pennsylvania Department of Conservation and Natural Resources, Bureau of Recreation and Conservation, under contract number **BRC-**12-5-26.

NOW, THEREFORE, BE IT HEREBY RESOLVED by the Board of Commissioners
(Name of governing body)

of the Caln Township that:
(Name of grantee)

a. The project was completed in accordance with the Grant Agreement.
b. All project expenditures have been made and were in accordance with the Grant Agreement.
c. The Plan and related materials are acceptable to the Caln Township.
(Name of grantee)
d. The Plan and related materials will be used to guide future recreation, park, open space and conservation acquisition, development, operations, and maintenance.

ADOPTED THIS 12th DAY OF June, 2008, by the

CALN Township Commissioners
(Name of governing body and name of grantee)

Jill Kelly Hammond
(Signature, name and title of chief official, president, or chairperson)

Attest: Janet L. Bugay, Township Secretary
(Signature and title)