



# Town of Bethlehem: Henry Hudson Park Master Plan Final Report

**Prepared for:**

The Town of Bethlehem, New York  
Department of Economic Development & Planning &  
Parks & Recreation Department  
September 2017



**Prepared by:**





# Table of Contents

01	Introduction
03	Existing Conditions
09	Community Outreach
13	Conceptual Park Master Plan
15	Henry Hudson Park Master Plan Recommendations
21	Flexible Project Phasing
23	Riverfront Loop Promenade
25	Natural Playground/Adventure Playground
27	Park Pavilion/Restrooms
29	Road Realignment & Parking Lot Extensions
31	Recreation Components
33	Multi-Purpose Loop Trails
35	Low Ropes Course
37	Secondary Picnic Areas
39	Passive Nature Trails
41	Pedestrian Bridge to Baker Farm
43	Shoreline Stabilization
45	Next Steps
<i>i - ix.</i>	<i>Index</i>
<i>i.</i>	<i>Cost Estimates</i>
<i>viii.</i>	<i>Conceptual Park Master Plan Graphics</i>

# Introduction



Henry Hudson Park (HHP) is a 51 acre riverfront park located in the Hamlet of Selkirk, within the Town of Bethlehem, New York, and just south of the City of Albany. Henry Hudson Park is a site design project within the larger Town of Bethlehem LWRP context that has opportunity to recharge utilization, and be harnessed as an economic booster through resilient place making and programming. With the help of the Town of Bethlehem and community members, the design team was able to analyze existing conditions, its context area, and gather information from the community to produce a master plan that utilizes the parks full potential.

**The stated project vision statement is:**

***“To create a place of passive and active gather for local and regional users while utilizing the site responsibly and resiliently in order to create economic growth to serve a greater network within the LWRP scope.”***

Currently, the site is positioned remotely on the western shore of the Hudson River in the town of Selkirk and seven miles from downtown Albany. The site has limited pedestrian access being separated by route 144 and the New York State Thruway, which makes it a challenge to become the economic generator that it has the potential to be. The site has high potential to be a regional attraction for its location on the Hudson River with fishing access and full boat launch amenities.

The overall goals of the project are to stimulate:

1. Opportunities for increased utilization of park spaces
2. Year-round outdoor recreation;
3. Improved connections throughout the park

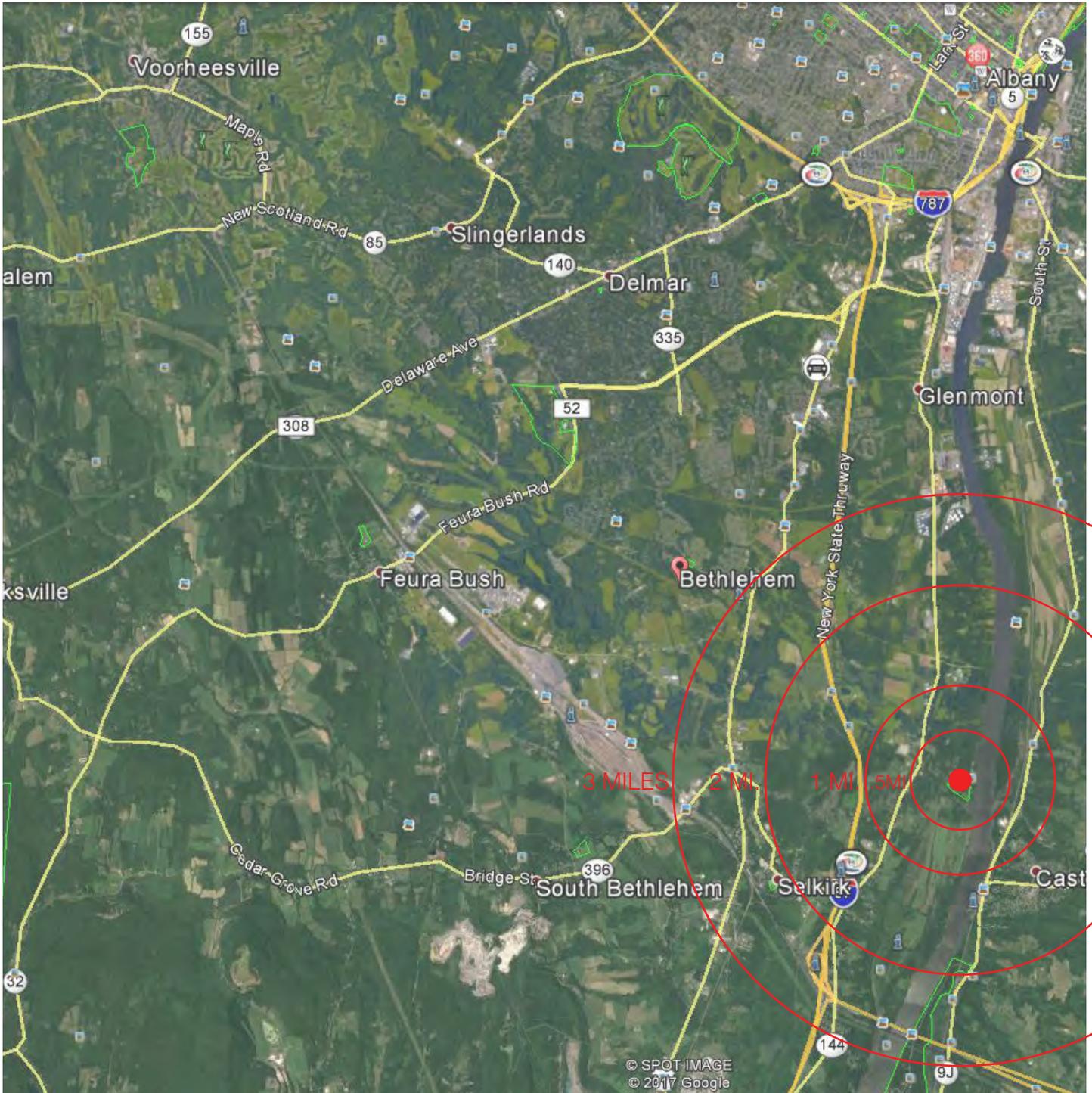
Henry Hudson Park has the potential to capture regional and local users and become a more widely recognized and utilized location for active and passive uses.



Hudson River Shoreline



Sims Metal Management Along the Hudson River



Context image indicating Henry Hudson Park's relationship to nearby towns.

# Existing Conditions



Lyons Road looking north towards the Park Pavilion.



Concrete capped shoreline cribbing looking south



Kayak/Canoe launch into the Vroman Kill, south of site



State boat launch to northern side of site

## Geographic

Henry Hudson Park is located off of Route 144 in the Hamlet of Selkirk, New York. The park is nestled between the Hudson River at its Eastern Shore and the Vroman Kill at its Southern Shore, both offering opportunities for motorized and car-top boating, fishing, recreation, and picnicking. The park is 51 acres and currently utilizes 11 acres for active a passive uses. Much of the remainder of the site is minimally disturbed forested wetland. The utilized 11 acres consists of a half mile linear stretch of riverfront park area that is disconnected from the rest of the site by Lyons Road, which runs parallel to the riverfront. The road separates the main parking from the riverfront park, creating an unsafe condition. The park's main pavilion and softball field, which are both heavily used, are also separated from the remainder of the parks amenities by Lyons Road.

## North to South Experiences

- Public Boat Launch
- Boat Trailer Parking
- Gazebo
- Fishing Pier
- Volleyball Court
- Shaded Picnic Area
- Pavilion
- Playground
- Softball Field
- Canoe/Kayak Launch



Henry Hudson Park is 51 Acres

### Historical

The park's name; Henry Hudson Park, acknowledges the history that started there for the Town of Bethlehem. The Hudson River is thought to have first been explored by Europeans in 1609 when Henry Hudson explored the section between the New York Harbor up to present day Albany. Hudson's ship the Half Moon, is believed to have landed at the shores of Henry Hudson Park during this time which led to European settlement in this desirable area.

In the early 1900's, Bethlehem's riverfront was utilized for the harvesting of ice during the winter months.

A large sunken timber barge lays beneath the river water on the north end of the park, just off the shoreline.

### Site Amenities

The park area consists of expansive green lawn shaded by mature shade trees. The northern end of the park is utilized by fishermen and boaters with the New York State boat launch being heavily used as the Town of Bethlehem's only public access to the water. Just south of the launch is a small gazebo and fishing pier that is heavily used during the striper season.

The following area momentarily transitions into a pine grove that creates an opportunistic space within the park. It currently houses a volleyball court and picnic area. People currently informally park their cars in this area, which interrupts the park green and pedestrian connectivity within the park.



*Chainlink fence separating park visitors from shoreline*



*Boat Launch and shoreline at the northern end of site.*



*Fishing Pier towards north end of HHP*



Existing Volleyball Court within the pine grove



An Underutilized View of the Vloman Kill



Southern Tip of HHP Where Vloman Kill Converges with the Hudson River.



Kayak/Canoe Launch

Continuing south along the linear park, the experience does not change drastically from one picnic area to the next, and does not host a diversity of uses. The current programming of the park is predominantly comprised of open green and picnic tables. The physical and visual interaction with the riverfront is interrupted by the chain link fence meant to separate park visitors from the shoreline, limiting the views gained by picnickers or other park visitors.

The majority of the parking is positioned on the west edge of Lyons Road. Most predominantly is the general park use parking lot which sits just on the other side of Lyons Road, opposite from the majority of the park amenities. The drive aisle and the start of the parking lot are separated only by the painted line marking the drive lane creating an unsafe condition as the majority of park users must cross Lyons Road to enter the riverfront park picnic area. The parking lot is not buffered from Lyons Road, and when full, the parked cars screen pedestrians from view while attempting to cross the road. The direct connection to the road also enables visitors to cross at any point along the length of the lot, which adds to the unsafe and unpredictable nature of the parking areas relationship to the park. This condition is compounded by the location of the park's picnic pavilion, which sits just outside of the north-western corner of the parking lot in a narrow area between the wood line and the pavement. Not only does the pavilion location create a safety concern as visitors must cross the road and a busy parking lot, but the experiential consequences as one of the parks primary amenities overlooking a parking lot, which blocks the view of the park and the river.



Pavilion and Parking Lot in relation to Lyons Road



Parking lot lacking any buffer from Lyons Road



Parking lot and Drive Aisle share the same edge



View from Pavilion of Lyons Road and Parking Lot



Pavilion overlooking parking lot and Lyons Road



Eroding Shoreline at Henry Hudson Park



Eroding Shoreline at Henry Hudson Park



Eroding Shoreline and fence at Henry Hudson Park



Flood Map showing a 1% Annual chance of flooding at HHP  
07

### Erosion:

The shoreline at Henry Hudson Park is dilapidated and in disrepair. A shoreline stabilization study was conducted in 2011 which strategizes and prioritizes a plan for a shoreline construction process. The shoreline was originally built by federal dredging initiatives in the 1860's where dredged soils were placed upland and contained through the use of timber cribs containing rip-rap stone. Later on, a concrete capping was installed. Large vessels that navigate the shipping channel create large wakes that have caused damage to the docks and bulkheads in Henry Hudson Park. Much of the eroding shoreline is currently blocked, both visually and physically, by an unsightly, four foot chain link fence. In several areas the fence has been undermined by shoreline erosion.

### Floodplain:

Henry Hudson Park rests in a floodplain type A13; having a 1% chance of annual flooding. In recent years, the park has seen flooding levels nearing 4 feet at the restroom structure located at the southern end of the primary parking lot.

### Tides:

The Hudson River is a 315 mile river that flows north to south, originating in the Adirondack Mountains and draining into the Atlantic Ocean. Bethlehem's waterfront is in tidal reach and the tides of the Hudson River are influential as far north as Troy, New York.

### Wetland

Among the sites 51 acres is a 25 acre federally recognized Freshwater Forested/Shrub Wetland. The wetland wraps around a 1.75 acre high point in the center of the forest. Along the banks of the Vloman Kill are Federally Regulated Freshwater Wetlands. These wetlands are incredibly valuable to Henry Hudson Park for their species and habitat diversity, flood control, and erosion control. They provide an experience that is currently not utilized as an amenity to Henry Hudson Park. The wetland includes a variety of high points and low points which create a diversity of experiences and opportunities.



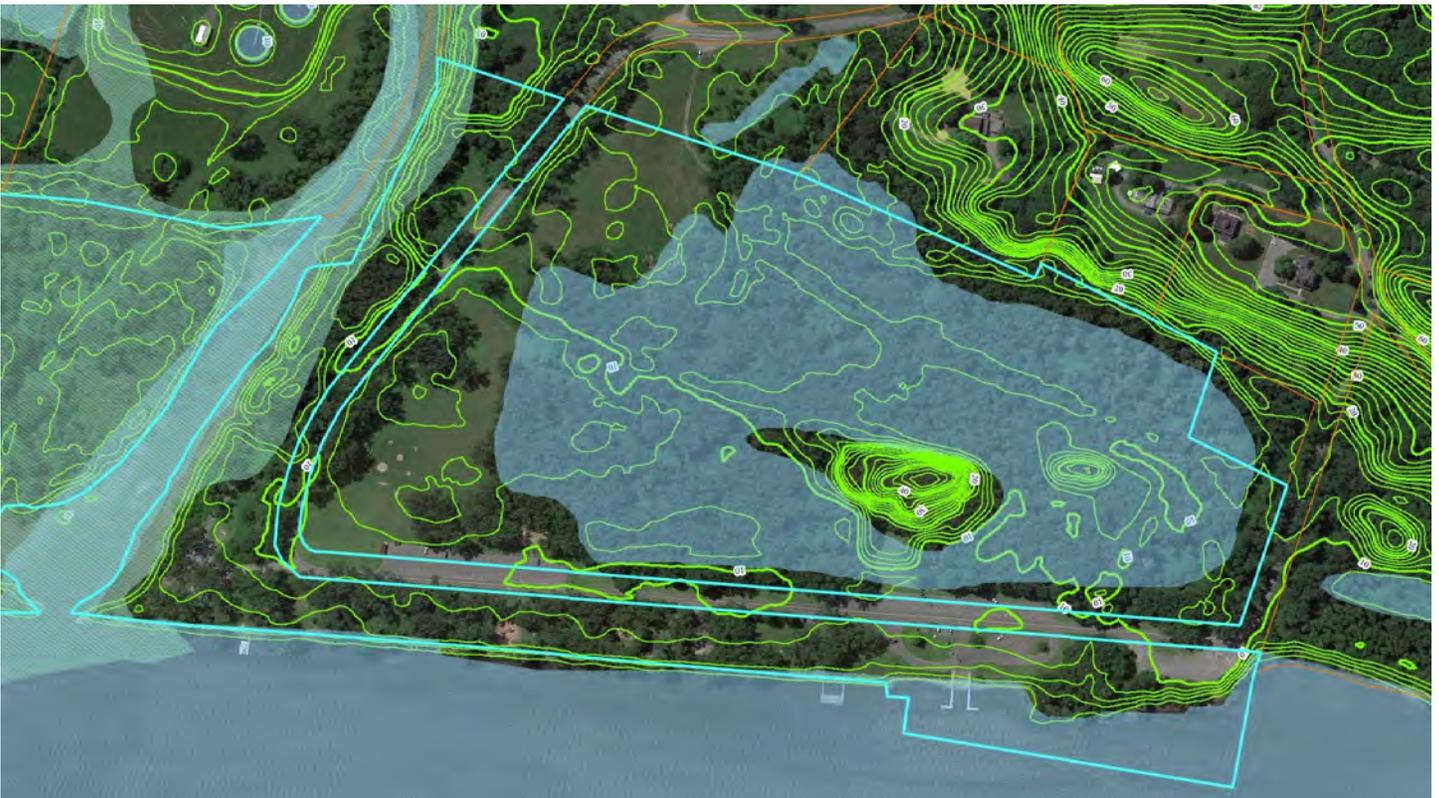
Forested Wetland Makes up a large part of the underutilized sections of Henry Hudson Park



A large barge travels the Hudson River heading north towards Albany



Shoreline erosion often caused by wakes from large barges and boats navigating the Hudson River for shipping.



Wetland Inventory and Analysis by New York State Department of Environmental Conservation

# Community Outreach



History Guide tells stories of the Hudson River on the boat tour



LWRP Boat Tour

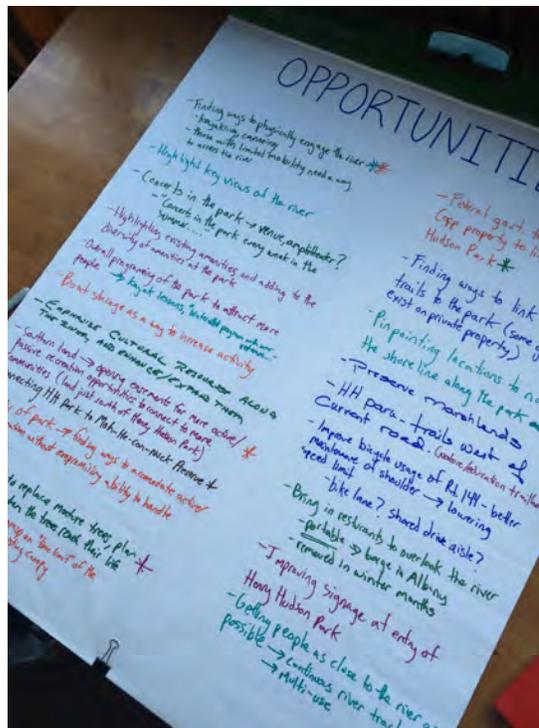


Henry Hudson Park Information Stations on the Boat Tour

In an effort to garner as much information and feedback as possible from residents, stakeholders, business owners, and town representatives, the project team conducted a multi-pronged approach to community outreach that offered a wide variety of opportunities for participation. The discovery and analysis portion of the project included a boat tour, public walk & talk, interactive activity stations at a daytime public open house, and a design workshop to conceptualize the public's ideas into drawings which were presented for feedback during an evening public open house.

## Boat Tour

A kick off meeting began looking at the entire LWRP scope from the vantage of a boat tour. At the uniquely located meeting, about 40 business owners, residents, government officials, and environmental advocates boarded the Dutch Apple III to tour the 10 miles of Bethlehem's Hudson River shoreline. The boat tour allowed designers and guests to view and visualize the park from a different vantage point as well as gather information about the park. They received important feedback about the park's existing functionality and ideas about the park's future enhancements.



Stakeholder participation helped gather a list of opportunities



### Public Walk 'n Talk

As part of a full-day outreach event for the LWRP project, the design team conducted a public Walk-n-Talk at Henry Hudson Park. The Walk-n-Talk allowed the design team to experience the park first-hand with residents, stakeholders, and town representatives. The group discussed the park's existing assets and liabilities, as well as opportunities for enhancing the park and expanding its programming. The Walk-n-Talk Ideas and Comments included:

- *Attract regional visitors while still considering existing local users*
- *Access to Park: speeds too high, entry signage, gateways*
- *Direct vehicle drop off at kayak/canoe launch*
- *Incorporation of Natural and historical interpretive signage*
- *Include more bicycle amenities and regional connections*
- *Increase potential for wedding venue and other events*
- *Consider alternative to shoreline chain link fence*
- *Create a short-term plan to work within a long-term plan*
- *Reconfigure parking and Lyons Road to improve pedestrian connectivity in park*
- *Create looped path system with riverfront walk and river overlooks*
- *Create multi-purpose path that loops around the entirety of HHP with access to wooded areas*



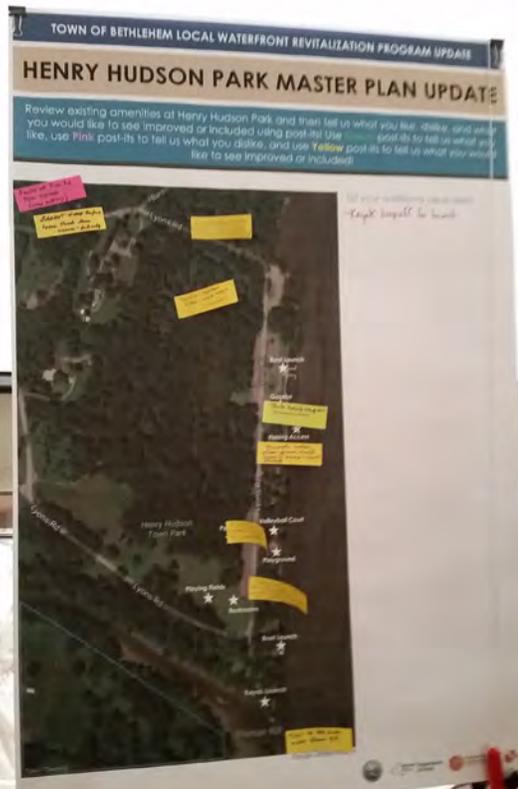
PLACE Alliance discusses the project scope before the Walk-n-Talk



Walk-N-Talk group discusses the concerns about the existing parking lot and pavilion location



Walk-N-Talk group discusses options for the river access and river views



Henry Hudson Park Activity Station led by MJ Engineers at the Public Open House



Guests interpret LWRP maps during the Open House



Ian Law of PLACE Alliance presents feedback received from the public open house to project committee members

## Design Workshop

PLACE Alliance utilized a “Charrette” based design day that enabled the design team, client team and representatives, key stakeholders, and all necessary project consultants to actively engage in the execution of a distinctive project. Working in a highly collaborative and cooperative “charrette” manner enabled the design team to have continuous feedback throughout the design process and vision crafting, allowing greater communication and understanding as every design stage progresses through client input, validation and participation.

## Open House

While the design team was busy producing master plan drawings during the design charrette, the planning team was conducting a public open house to gather more public information. The open house component of the public event allowed participants to informally walk through several activity stations to learn about the project at their own pace and provide input and ideas. At the Henry Hudson Park station, participants were requested to review the existing amenities at the park identified on the map provided. The station was intended to supplement the Walk ‘n Talk event. Participants were prompted to identify what they like, dislike or would like to see improved or included in Henry Hudson Park. Ideas generated were comparable to those presented in the community Walk ‘n Talk.

- *Access at River Road is poorly signed*
- *Both access roads (Barent Winne Road & Lyons Road) need better signage and lower speeds*
- *Crossing from parking lot to park and playground is dangerous*
- *Trails along the Vroman Kill and across the Vroman Kill to connect to Scenic Hudson Trail are needed*
- *Pavilion and tables should be replaced*
- *Vehicle kayak/canoe drop off at launch is desirable*
- *Sink power lines with road improvements in the future*

In addition to gathering input from the maps and station boards, guests had the opportunity to provide input on written comment forms. Comments provided included:

- *Food trucks and boat rentals on peak days and events*
- *Connect park to Moh-He-Con-Nuck Preserve*
- *Keep in mind the windy areas close to the shore*

Other Comments included

- *Self-guided history tour starting at Henry Hudson Park*
- *Historic kayak tour guided by Town Historian*
- *Mosquitoes in HHP - could be addressed with bat boxes*
- *Boat storage at HHP*
- *Birding and bird identification informations at HHP*

## Design Workshop Presentation

Following the public Walk-n-Talk, the design team spent the remainder of the day performing an intensive internal design workshop to generate a preliminary master plan for Henry Hudson Park, that would be presented that evening at the LWRP Public Open House and Presentation. The preliminary plan design was rooted in feedback from all project meetings, including committee meetings, the boat tour, and the morning Walk-n-Talk. Prior to presenting the conceptual Park Master Plan at the Open House and Presentation, the design team included as overview and preliminary analysis of existing conditions, followed by a discussion of key design considerations, which included:

- *Who is the audience we are designing for? Region/local? How will the design benefit the Town of Bethlehem?*
- *Accommodate existing uses - Fishermen during striper season, boaters, kayak & canoe*
- *Expand park to utilize entirety of park property*
- *Accommodate users of all ages and abilities*
- *Improve park functionality, programming and traffic/parking safety*
- *Work with existing shoreline stabilization strategy*
- *Encourage year long recreation, physical activity and exploration of nature*
- *Maintain passive nature of Henry Hudson Park*
- *Design resilience for flooding conditions*

Following the discussion of the key design considerations, the team presented the conceptual park master plan for Henry Hudson Park. The deliverances included a diagram of the overall park recommendations, a detailed enlargement plan of the riverfront park area improvements, and supporting hand sketches and photographic examples of similar design ideas. The Conceptual Master Plan outline the following park enhancements:

- *Improve pedestrian safety between the riverfront park area and parking lot*
- *Create an interconnected pedestrian loop system at the riverfront park area that will link all riverfront amenities, diversify park spaces, create riverfront overlooks and access, and collectively enrich the park experience and utilization for visitors of all ages and abilities*
- *Increase utilization of entire park*
- *Connect Henry Hudson Park to regional trail networks*



PLACE Alliance discusses the park Master Plan with community members



Guests view park master plans after the presentation given



PLACE Alliance and the Town of Bethlehem Parks & Recreation review the conceptual master plan of HHP



Open House guests make their way to each informative station

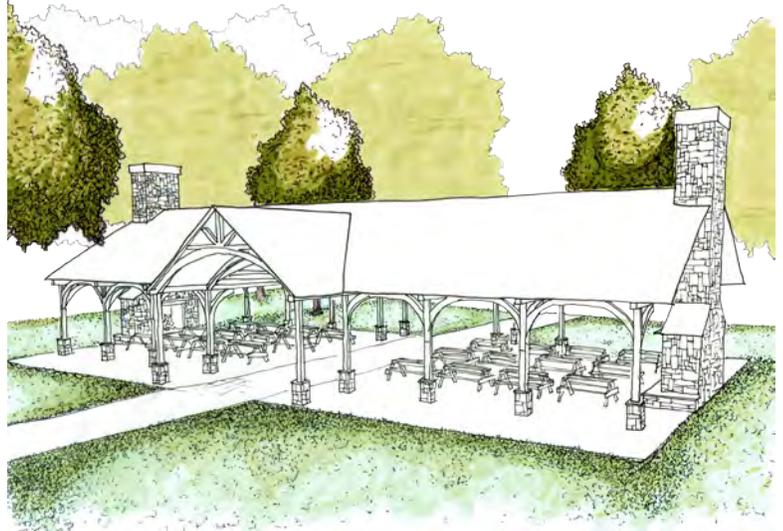
# Conceptual Park Master Plan



After the day-long design workshop presentation, the design team adjusts the original drawings based on recommended revisions



Riverfront Park Enlargement Plan



Proposed Park Pavilion Structure would be centrally located within the park



Proposed Restroom Structure to Complement the Proposed Park Pavilion.



Proposed Trellis Swing Structure at the shoreline of the Hudson River

# Henry Hudson Park Master Plan: Recommendations

## Final Drawings

Following a series of revisions and refinements based upon direct feedback from the public, key stakeholders, and the Project Advisory Committee, the Henry Hudson Park Master Plan graphic was produced and presented at the LWRP Public Open House. The open house provided a final opportunity for public discussion about the park's plan and future enhancements. The master plan introduced three primary strategies that shape the foundation for the parks enhanced utilization and functionality. The three primary strategies are listed below with a more detailed description in the following pages.



*PLACE Alliance and community members discuss the proposed Henry Hudson Master plan during the final public open house and presentation.*



Henry Hudson Park Master Plan showing Riverfront Park, and conceptual multi-purpose and trail paths



Existing Road Path



Proposed Road Path

**1. Improve Pedestrian Safety/Park Utilization: Shifting Segment of Lyons Road**

- Reconfigure Lyons Road to the west to place existing parking lot between road and riverfront park area
- Eliminates need to cross Lyons Road
- Creates opportunity to expand parking area (existing 82, proposed 144)
- Remove existing bathroom structure and replace with compost bathroom facility within Riverfront park area
- Improve traffic control
- Create the opportunity to introduce a larger pavilion, immersed in the park with a view of the Hudson River



**2. Improve Park Connectivity: Creation of an Interior Loop River Walk**

- Provides .66 mile loop around riverfront park area
- Links riverfront amenities from fishing pier and boat launch area to new canoe/kayak launch
- Delineates specific areas within the riverfront park area
- Provides opportunity for formal river overlooks
- Provides direct connections to future amenities:
  - Natural playground/obstacle challenge course
  - Picnic pavilion/Restrooms
  - Volleyball, bocce, horseshoes

**3. Utilize Entire Park: Creation of a Trail Network**

- Provides access to the entire park property
- Expands park from 11 acre riverfront park to 51 acres (25.6 acres of woods)
- Creates greater connectivity to key park amenities
- Provides opportunity for future regional connections
- Creates an approximately 1.5 mile loop (1.00 in woods)





*Enlargement of Lyons Road Realignment and Riverfront Park*

### **Strategy #1: Improve Pedestrian Safety/Park Utilization**

In effort to dramatically improve the safety, functionality, and visitor experience at Henry Hudson Park, the Master Plan proposes a moderate re-alignment of a key segment of Lyons Road. Currently, Lyons Road runs directly between the riverfront park's passive recreation area and the primary parking lot, forcing visitors to cross Lyons Road to enter the park. This condition is compounded by the existing location of the parks picnic pavilion, which sits just off the north-western corner of the parking lot, requiring pavilion users to cross both the parking lot and Lyons Road to access the riverfront park area and the Hudson River. This is not only an unsafe condition, but it also limits the visitor's experience as the view of the park and river from the picnic pavilion are blocked by the cars in the parking lot.

The Master Plan recommends that the section of Lyons Road beginning just north of the existing parking area be shifted directly west of the parking area and connect to the east/west section of Lyons Road with a perpendicular intersection. This adjustment provides several benefits to the riverfront park area, but none are more important than the impact it will have to the parks pedestrian safety, as visitors once parked, will be able to enter the park and all the riverfront area amenities without ever crossing Lyons Road. The realignment also enlarges the connected greenspace of the riverfront area providing the opportunity to locate amenities in locations that complement one another and enrich the overall experience of the park. Another positive result of the road realignment is that it requires the removal of the existing picnic pavilion, which is nearing the end of its life cycle, and in-turn creates the opportunity for a new centralized grand pavilion in the heart of the riverfront green overlooking the Hudson River. The final component of Strategy 1 maintains the remaining roadway from the old Lyons road alignment that provides access to the canoe/kayak launch area. The master plan proposes that this area be enhanced with a new canoe/kayak drop-off and an expanded formal parking area. The parking area at the canoe/kayak launch will also have direct connections to the proposed river walk and multi-purpose path system.

### **Strategy #2: Improve Park Connectivity and Visitor Experience**

Although the existing riverfront area at Henry Hudson Park offers several significant amenities that provide access to the Hudson River, such as the boat launch, fishing pier, and canoe/kayak launch; most of the riverfront park area is relatively unprogrammed and disconnected greenspace utilized for picnicking. The riverfront green generally looks and feels the same and offers very little in the form of experiential diversity. For example, a visitor picnicking at the northern end of the riverfront green would have very little reason to walk and explore the southern end of the green because the experience does not change.

The Master Plan looks to have the riverfront green function more like a park through the creation of a river walk loop that will wrap around the entirety of the riverfront green area. The .66 mile loop will link the riverfront's key amenities, including the proposed grand pavilion and compost restroom facilities, the boat launch and fishing pier at the north end, and the canoe/kayak launch at the mouth of the Vloman Kill. The river walk will provide overlook and seating areas along the riverfront with enhanced views of the river. The master plan also recommends the removal of the chain link



*Wooded Area in Henry Hudson Park*



*Lyons Road facing north*

fence that currently sits atop the riverbank creating an unsightly visual and physical barrier. The plan recommends that the fence be replaced with low native landscaping to provide a safe buffer between the proposed river walk and the river bank. This will give children a visual queue, but still allow fishermen to gain access to the shoreline. The river walk loop will also provide inter-connections within the park that will define space and provide opportunities for new amenities like the proposed natural playground and adventure playground, or the bocce and horseshoe area. In addition to providing direct connections to park amenities, and enhancing the parks diversity through the creation of defined outdoor spaces, the river walk loop also provides a great opportunity for visitors of all ages and abilities to get exercise in a safe and beautiful environment.

### **Strategy #3: Utilize the Entirety of the Park Land**

Despite having 51 acres of land, Henry Hudson Park currently only utilizes about 11 acres along the riverfront green. The wooded wetland area (25 acres), open fields, and wooded lands along the Vloman Kill offer countless opportunities for passive recreation that will attract new visitors to Henry Hudson Park. The master plan seeks to provide access to these under utilized lands within the park through the addition of a multi-purpose path system that wraps around the general perimeter of Henry Hudson Park. The new path system will provide a diverse 1.5 mile loop that offers a variety of year-round recreational opportunities, as the path will extend the river walk to the north and west around the perimeter of the large wooded wetland, through the open field just south of the wetland, and along the banks of the Vloman Kill until the path connects back to the river walk near the canoe/kayak launch area. In addition to providing year-round recreational opportunities that utilize the extent of the park's 51 acres, the multi-purpose path also provides the opportunity to create internal nature trails within the wooded wetland area that offer tremendous opportunity for interpretive learning about the wetlands ecology and wildlife habitat. The internal trail network also provides access to the park's highest point, where a future lookout tower can provide long views of the Hudson River while overlooking the wetland. The loop path also provides access to secondary park structures and picnic areas at the north and south ends of the riverfront, which offer a more secluded riverfront picnic experience. The path activating the wooded area along the Vloman Kill will coexist with low-ropes challenge stations that engage both kids and adults in problem solving challenges. The path system connects active recreation areas like the existing softball field and the proposed disc golf course. Lastly, the proposed multi-purpose path system at Henry Hudson Park will provide the opportunity to make future connections to regional trail networks and nearby attractions. The plan demonstrates a future connection to the south by incorporating a pedestrian bridge across the mouth of the Vloman Kill that would connect park visitors to the Scenic Hudson's Baker Farm project.

The strategies for Henry Hudson Park's master plan can be implemented incrementally over time as each component of the master plan will improve the park's utilization and visitor experience. Collectively, the recommendations of the Master Plan look to maximize the potential of the park and enrich the quality of life for town residents, as well as demonstrating what the town has to offer its regional visitors.

# Flexible Project Phasing:

- 01 | Riverfront Loop Promenade**
- 02 | Natural Playground/Adventure Playground**
- 03 | Park Pavilion/Restrooms**
- 04 | Road Realignment & Parking Lot Extensions**
- 05 | Recreation Components**
- 06 | Multi-Purpose Loop Trails**
- 07 | Low Ropes Course**
- 08 | Secondary Picnic Areas**
- 09 | Passive Nature Trails and Boardwalks**
- 10 | Pedestrian Bridge to Baker Farm**
- 11 | Shoreline Stabilization**



Working with Town staff, a flexible project implementation plan was produced, outlining how improvements to Henry Hudson Park can be made as funds become available. The projects have been strategically divided to create feasible steps to apply for funding. Some projects should be completed before others begin; for example, the proposed grand pavilion should be constructed before the existing pavilion is removed for the Lyons Road realignment. Several projects can be accomplished independently, at any time, not relying on the completion of any other project. Although some projects should be accomplished before others, the realistic project implementation of Henry Hudson Park will be dependant on available funding, and the priorities of the community.

## Potential Permits & Consultation:

- SWPPP
- SEQR
- Selective tree removal (Arborist)
- Wetland delineation
- NYS Freshwater Wetlands Permit
- NYS Protection of Waters Permit
- Floodplain Development Permit
- Rare Animals, Rare Plants, and Significant Natural Communities Permit
- Archeological assessment

# Flexible Project Phasing: PROJECT I





Precedent Image: Waterfront Promenade



Precedent Image: Park Loop Trail



Precedent Image: Waterfront Trail

# 1 PROJECT I RIVERFRONT LOOP PROMENADE

**Project Total: \$970,500**

**Project 1A: \$780,000**

**Project 1B: \$60,500**

**Project 1C: \$130,000**

*Costs include 15% Construction Contingency & 12%  
A/E & Permitting Fee's*

*Costs do not include Arborist, tree removal or removal  
of chain link fence*

## Components

### 1A

- 10' wide concrete riverfront walk along shore
- 5-8' wide concrete loop path connecting to riverfront walk
- 5' wide concrete sidewalk connectors within loop\*
- Removal of Chain Link Fence
- Natural buffer planting between walk and river bank

### 1B

- Pedestrian scale lighting along riverfront walk\*

### 1C

- Primary river overlook
- Trellis swing\*
- Benches, picnic tables, trash receptacles, bike racks\*

## Alternates

- Reduce riverfront walk from 10 feet to 8 feet
- Potential to use bituminous paving in replacement of concrete

## Notes

- Have an arborist evaluate the trees along the riverfront park prior to construction

\*May Be Accomplished in Later Projects

# Flexible Project Phasing: PROJECT 2





Precedent Image: Natural Playground Tunnel/Hill



Precedent Image: 'Off-the-Shelf' Equipment



Precedent Image: Natural Playground Component

# 2

## PROJECT 2 NATURAL PLAYGROUND/ ADVENTURE PLAYGROUND

**Project 2 Total: \$80,000**

*Costs include 15% Construction Contingency & 12% A/E & Permitting Fee's  
Cost of off-the-shelf equipment will fluctuate*

### Components

- Community gathered equipment
- Off the shelf equipment\*
- Land manipulation (hills, depressions,tunnels)
- Mulch bedding

### Alternates

- Donated labor
- Donated materials

### Notes

- The price of the natural playground will fluctuate based on how many off the shelf items are purchased.

\*May Be Accomplished in Later Projects

# Flexible Project Phasing: PROJECT 3





Precedent Image: Albany Pine Bush Compost Toilet



Precedent Image: Park Pavilion with Fire Place



Precedent Image: Fireplace Pavilion

# 3

## PROJECT 3 PAVILION & RESTROOMS

**Project 3 Total: 500,000**

**Project 3A: \$200,000**

**Project 3B: \$100,000**

**Project 3C: \$200,000**

*Costs include 15% Construction Contingency & 12% A/E & Permitting Fee's*

### Components

#### 3A

- New park pavilion

#### 3B

- Restroom north\*

#### 3C

- Restroom south\*

### Alternates

- Connect to water instead of composting restrooms

### Notes

- The Pavilion can be designed and built to meet the allocated budget allowance
- The restrooms estimated are assumed to be new 4-stall and 2-stall compost toilet structures.
- The proposed pavilion should be implemented before the existing is removed for the Lyons Road realignment

\*May Be Accomplished in Later Projects

# Flexible Project Phasing: PROJECT 4



# 4

## PROJECT 4

# LYONS ROAD REALIGNMENT/ PARKING EXPANSION

**Project 4 Total: \$600,000**

*Costs include 15% Construction  
Contingency & 12% A/E & Permitting Fee's*

### Components

- Remove old pavilion
- Realign Lyons Road
- Remove existing road and replace with topsoil and grass
- Extend existing primary parking south
- Full depth construction of kayak/canoe parking\*
- Cross walks from parking lot to softball field

### Alternates

- Kayak/canoe site could potentially function as gravel parking area
- Kayak/canoe parking could be done as separate project

### Notes

- The proposed pavilion should be implemented before the removal of the existing structure for road reconstruction

\*May Be Accomplished in Later Projects

# Flexible Project Phasing: PROJECT 5





Precedent Image: Bocce Ball



Precedent Image: Horseshoes



Precedent Image: Kayak Locker

# 5

## PROJECT 5 PARK RECREATION

**Project 5 Total: \$100,000**

*Costs include 15% Construction Contingency & 12% A/E & Permitting Fee's*

### Components

- Volleyball courts
- Horseshoes
- Bocci ball
- Disc golf\*
- Additional overlooks\*
- Kayak/canoe locker\*

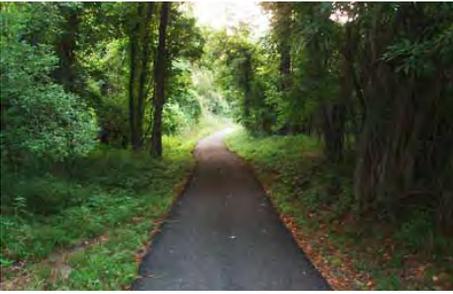
### Notes

- The proposed placement of the volleyball and horseshoes is dependant on the road realignment

\*May Be Accomplished in Later Projects

# Flexible Project Phasing: PROJECT 6





Precedent Image: Paved Trail



Precedent Image: Boarded Nature Trail



Precedent Image: Passive Dirt Trail

# 6

## PROJECT 6 MULTI-PURPOSE PATHS

**Project 6 Total: \$500,000**

*Costs include 15% Construction Contingency & 12% A/E & Permitting Fee's*

### Components

- 8' Wide multi-use asphalt loop trail around perimeter to wetland linking north and south ends of riverfront park area for pedestrians, bicyclists, rollerblades etc.

### Alternates

- Multi-purpose path could be compressed stone gravel

### Notes

- Paths along Vloman Kill and low ropes course should be planned to coexist
- This project will require a wetland delineation and permitting.

\* May Be Accomplished in Later Projects

# Flexible Project Phasing: PROJECT 7





Precedent Image: 'Off-the-Shelves' Station



Precedent Image: Low Ropes Station



Precedent Image: Low Ropes Station

# 7

## PROJECT 7 LOW ROPES COURSE

**Project 7 Total: \$40,000**

*Costs include 15% Construction Contingency & 12% A/E & Permitting Fee's*

### Components

- Low ropes stations
- Mulch bedding at stations

### Alternates

- Community installed low ropes stations
- These challenges can be created simply involving wooden platforms and ropes until off the shelf items are available through funding sources

### Notes

- Paths along Vloman Kill and low ropes course should be planned to coexist
- This area may flood and may require permitting

\*May Be Accomplished in Later Projects

# Flexible Project Phasing: PROJECT 8





Precedent Image: Picnic Structure



Precedent Image: Small Picnic Structure



Precedent Image: Picnic Structure as Stage

# 8

## PROJECT 8

# SECONDARY PICNIC AREAS

**Project 8 Total: \$250,000**

**Project 8A: \$125,000**

**Project 8B: \$125,000**

*Costs include 15% Construction Contingency & 12% A/E & Permitting Fee's*

### Components

#### 8A

- Northern secondary park pavilion

#### 8B

- Southern secondary park pavilion

\* May Be Accomplished in Later Projects

# Flexible Project Phasing: PROJECT 9





Precedent Image: Boardwalk Nature Trail



Precedent Image: Nature Trail with Interpretive Signage and Bench

# 9

## PROJECT 9 NATURE TRAILS

**Project 9 Total: \$365,000**

**Project 9A: \$20,000**

**Project 9B: \$320,000**

**Project 9C: \$25,000**

*Costs include 15% Construction Contingency & 12% A/E & Permitting Fee's*

### Components

#### 9A

- Clearing and grubbing of passive trails

#### 9B

- Implementation of boardwalks over wet areas\*

#### 9C

- Interpretive signage
- Wayfinding signage
- Informational bird blinds

### Notes

- This project could include bird-hides and look-outs that

\*May Be Accomplished in Later Projects

# Flexible Project Phasing: PROJECT 10





Precedent Images: Pedestrian Bridges over Water

# 10

## PROJECT 10

# PEDESTRIAN BRIDGE

**Project 10: \$250,000**

*Costs include 15% Construction Contingency & 12% A/E & Permitting Fee's*

### Components

- Pedestrian bridge to Baker Farm

### Notes

- This project requires Flood Analysis and permitting
- Bridge would be approximately 120 feet at its narrowest point

\* May Be Accomplished in Later Projects

# Flexible Project Phasing: PROJECT 11





Precedent Images: Rip-Rap



Precedent Images: Vegetated Geogrid



Precedent Images: Joint Planting

# 11

## PROJECT 11 SHORELINE STABILIZATION

**Project 11: \$2.5 Million**

### Components

- Shoreline Stabilization Study Recommendations
  - + Rip-rap
  - + Joint planting
  - + Vegetated geogrid
  - + Live crib wall
  - + Timber bulkhead

### Notes

- The shoreline stabilization project implementation is dependant upon funding and can be constructed in phases recommended in the Shoreline Stabilization Study manual
- This project requires Flood Analysis and permitting



Shoreline Phasing Sections-Refer to Shoreline Stabilization Study

# Next Steps:



With the conceptual Master Plan complete, the next steps for the project will require retaining and expanding stakeholder participation and support as well as establishing relationships and starting discussions with Town Departments, including the Department of Economic Development & Planning and the Parks and Recreation Department. Other entities including the Local Waterfront Advisory Committee and Scenic Hudson will need to be kept engaged with the project in order to better network the project leading to funding sources. The conceptual master plan can now be used as a tool to secure funding and required labor necessary to undertake the transformation of the under utilized Henry Hudson Park to a locally and regionally recognized natural urban retreat.

The Town of Bethlehem Department of Economic Development and Planning and the Parks and Recreation Department will work together to take the lead as the primary contact, coordinating efforts to move forward with implementation.

At the time of completion of this document, the Town of Bethlehem was already working on development of grant submissions for funding towards several projects within the project scope.



# Project Estimate:

## PROJECT 1: RIVERFRONT LOOP PROMENADE

Last Updated: 2017-08-03

PROJECT 1A						
ITEM	QUANTITY	UNIT	UNIT COST	TOTAL	SUBTOTALS	NOTES
<b>Hardscape Path</b>						
-4" Concrete Sidewalk	40,000	SF	\$8.00	\$320,000.00		
- 8" Type 2 Subbase For Sidewalk	1176	CY	\$42.00	\$49,392.00		Includes 20% compaction
- Unclassified Excavation	1470	CY	\$18.50	\$27,195.00		
- Grading	40,000	SF	\$3.50	\$140,000.00		
Hardscape Subtotal					\$536,587.00	
<b>Riverfront Overlook</b>						
-Overlook	1	Allowance	\$40,000.00	\$40,000.00		
Overlook Subtotal					\$40,000.00	
<b>Landscaping</b>						
- Naturalized Shoreline Planting	Allowance	Allowance	\$20,000.00	\$20,000.00		
- Enhanced Planting	Allowance	Allowance	\$10,000.00	\$10,000.00		
Landscaping Subtotal					\$30,000.00	
Project Subtotal					\$606,587.00	
15% Contingency					\$90,988.05	
Construction Subtotal					\$697,575.05	
A/E Fees					\$83,709.01	
<b>Project 1A Total</b>					<b>\$781,284.06</b>	
<b>PROJECT 1B</b>						
<b>Site Electrical</b>						
- LED Pedestrian Lighting	15	EA	\$3,000.00	\$45,000.00		Includes Conduit
- Electrical Meter	1	EA	\$2,000.00	\$2,000.00		Includes Conduit
Electrical Subtotal					\$47,000.00	
Project Subtotal					\$47,000.00	
15% Contingency					\$7,050.00	
Construction Subtotal					\$54,050.00	
A/E Fees					\$6,486.00	
<b>Project 1B Total</b>					<b>\$60,536.00</b>	
<b>PHASE 1C</b>						
<b>Site Furnishings</b>						
- Bike Rack	2	EA	\$1,200.00	\$2,400.00		
- Water Line Connection	1	Allowance	\$2,000.00	\$2,000.00		
- Water Fountain	2	EA	\$1,200.00	\$2,400.00		
- Trash Receptacle	6	EA	\$750.00	\$4,500.00		
- Dog Waste Station	3	EA	\$250.00	\$750.00		
- Bench	16	EA	\$2,500.00	\$40,000.00		
- Picnic Table	15	EA	\$2,500.00	\$37,500.00		
- Trellis Swings	5	EA	\$2,500.00	\$12,500.00		
Site Ammenities Subtotal					\$102,050.00	
Project Subtotal					\$102,050.00	
15% Contingency					\$15,307.50	
Construction Subtotal					\$117,357.50	
A/E Fees					\$14,082.90	
<b>Project 1C Total</b>					<b>\$131,440.40</b>	
<b>Project 1 Complete Total</b>					<b>\$973,260.46</b>	

### Preliminary Cost Estimate

The recommended projects were given a preliminary construction cost estimate for the Town of Bethlehem to pursue funding based on estimated costs required to complete each project section. Components of each project could have alternate material or implementation strategy that could influence project cost. It is up to the Town of Bethlehem's discretion and priorities which projects will be implemented at what time.

**PROJECT 2: NATURAL PLAYGROUND**

PROJECT 2						
ITEM	QUANTITY	UNIT	UNIT COST	TOTAL	SUBTOTALS	NOTES
<b>Natural Playground / Adventure Playground</b>						
- Natural Playground/Adventure Playground	1	Allowance	\$62,000.00	\$52,000.00		
- Bench	4	EA	\$2,500.00	\$10,000.00		
Natural Playground/Adventure Playground Subtotal					\$62,000.00	
					<i>Project Subtotal</i>	\$62,000.00
					<i>15% Contingency</i>	\$9,300.00
					<i>Construction Subtotal</i>	\$71,300.00
					<i>A/E Fees</i>	\$8,700.00
<b>Project 2 Total</b>					<b>\$80,000.00</b>	

**PROJECT 3: PARK PAVILION/RESTROOMS**

PROJECT 3A						
ITEM	QUANTITY	UNIT	UNIT COST	TOTAL	SUBTOTALS	NOTES
<b>Pavilion</b>						
- Removal of Existing Pavilion Structure	1	Allowance	\$5,000.00	\$5,000.00		
- Custom Pavilion Structure	1	Allowance	\$100,000.00	\$100,000.00		
- Landscaping	1	Allowance	\$8,000.00	\$8,000.00		
- Bench	6	EA	\$2,500.00	\$15,000.00		
- Picnic Table	10	EA	\$2,500.00	\$25,000.00		
- Trash Receptacle	2	EA	\$750.00	\$1,500.00		
Pavilion Subtotal					\$159,900.00	
<b>Site Electrical</b>						
- Mounted Light within Pavilion	8	EA	\$250.00	\$2,000.00		Includes Conduit
- Electrical Outlet at Pavilion	4	EA	\$350.00	\$1,400.00		Includes Conduit
- Electrical Meter	1	EA	\$2,000.00	\$2,000.00		Includes Conduit
Project Subtotal					\$159,900.00	
					<i>15% Contingency</i>	\$23,985.00
					<i>Construction Subtotal</i>	\$183,885.00
					<i>A/E Fees</i>	\$22,066.20
<b>Project 3A Total</b>					<b>\$205,951.20</b>	

PROJECT 3B						
<b>Restrooms</b>						
- Custom 2 stall Compost Bathroom Structure(North)	1	Allowance	\$80,000.00	\$80,000.00		
Restrooms Subtotal					\$80,000.00	
					<i>Project Subtotal</i>	\$80,000.00
					<i>15% Contingency</i>	\$12,000.00
					<i>Construction Subtotal</i>	\$92,000.00
					<i>A/E Fees</i>	\$11,040.00
<b>Project 3B Total</b>					<b>\$103,040.00</b>	

PROJECT 3C						
<b>Restrooms</b>						
- Custom 4 stall Compost Bathroom Structure (South)	1	Allowance	\$150,000.00	\$150,000.00		
Restrooms Subtotal					\$150,000.00	
					<i>Project Subtotal</i>	\$150,000.00
					<i>15% Contingency</i>	\$22,500.00
					<i>Construction Subtotal</i>	\$172,500.00
					<i>A/E Fees</i>	\$20,700.00
<b>Project 3C Total</b>					<b>\$193,200.00</b>	
<b>Project 3 Complete Total</b>					<b>\$502,191.20</b>	

**PROJECT 4: ROAD REALIGNMENT & PARKING EXTENSIONS**

PROJECT 4						
ITEM	QUANTITY	UNIT	UNIT COST	TOTAL	SUBTOTALS	NOTES
<b>Road Realignment &amp; Bituminous Parking Lot</b>						
- 4" Bituminous Paving Road Realignment	1100	TONS	\$130.00	\$143,000.00		
- 8" Type 2 Subbase For Road Realignment	1321	CY	\$42.00	\$55,482.00		Includes 20% compaction
- Excavation of New Roadway	1652	CY	\$18.50	\$30,562.00		
- Grading	44,600	SF	\$3.50	\$156,100.00		
- Excavation of Existing Roadway for Reseeding	298	CY	\$18.50	\$5,513.00		
- Topsoil	298	CY	\$45.00	\$13,410.00		Includes 20% compaction
- Fine Grading and Seeding	16,000	SY	\$3.50	\$56,000.00		
- Road & Parking Lot Striping	1	Allowance	\$2,000.00	\$2,000.00		
- Landscaping	1	Allowance	\$5,000.00	\$3,000.00		
- Trees (2.5"-3" Caliper)	15	EA	\$550.00	\$8,250.00		
Hardscape Subtotal					\$473,317.00	

	Project Subtotal	\$473,317.00
	15% Contingency	\$70,997.55
	Construction Subtotal	\$544,314.55
	A/E Fees	\$65,317.75

<b>Project 4 Total</b>		<b>\$609,632.30</b>
------------------------	--	---------------------

**PROJECT 5: RECREATION COMPONENTS**

PROJECT 5						
ITEM	QUANTITY	UNIT	UNIT COST	TOTAL	SUBTOTALS	NOTES
<b>Overlooks, Disc Golf, Paths</b>						
-Overlook	2	Allowance	\$25,000.00	\$50,000.00		
-Kayak/Canoe Locker	1	Allowance	\$20,000.00	\$20,000.00		
- Disc Golf	9	EA	\$400.00	\$3,600.00		
- Horse Shoe Course	2	EA	\$500.00	\$1,000.00		
- Bocce Ball Course	1	EA	\$1,000.00	\$1,000.00		
- Sand Volleyball Course	2	EA	\$3,000.00	\$6,000.00		
- Trees (2.5"-3" Caliper)	6	EA	\$550.00	\$3,300.00		Volleyball Court Buffer
Recreation Subtotal					\$84,900.00	

	Project Subtotal	\$84,900.00
	15% Contingency	\$12,735.00
	Construction Subtotal	\$97,635.00
	A/E Fees	\$11,716.20

<b>Project 5 Total</b>		<b>\$109,351.20</b>
------------------------	--	---------------------

**PROJECT 6: MULTI-PURPOSE LOOP TRAILS**

PROJECT 6						
ITEM	QUANTITY	UNIT	UNIT COST	TOTAL	SUBTOTALS	NOTES
<b>Hardscape Path</b>						
- 4" Bituminous Paving	1000	TONS	\$130.00	\$130,000.00		
- 8" Type 2 Subbase For Bituminous Path	1700	CY	\$42.00	\$71,400.00		Includes 20% compaction
- Unclassified Excavation	1575	CY	\$18.50	\$29,137.50		
- Grading	42,460	SF	\$3.50	\$148,610.00		
Hardscape Subtotal					\$379,147.50	

	Project Subtotal	\$379,147.50
	15% Contingency	\$56,872.13
	Construction Subtotal	\$436,019.63
	A/E Fees	\$43,601.96

<b>Project 6 Total</b>		<b>\$479,621.59</b>
------------------------	--	---------------------

**PROJECT 7: LOW ROPES COURSE**

PROJECT 7						
ITEM	QUANTITY	UNIT	UNIT COST	TOTAL	SUBTOTALS	NOTES
<b>Low Ropes Course</b>						
- Low Ropes Station Mulch	300	SY	\$8.00	\$2,400.00		
- Low Ropes Course Equipment	6	EA	\$5,000.00	\$30,000.00		
Low Ropes Subtotal					\$32,400.00	
Project Subtotal					\$32,400.00	
15% Contingency					\$4,860.00	
Construction Subtotal					\$37,260.00	
A/E Fees					\$4,471.20	
<b>Project Total</b>					<b>\$41,731.20</b>	

**PROJECT 8: SECONDARY PICNIC AREAS**

Project 8A						
<b>Secondary Picnic Areas</b>						
- Secondary North Pavilion Structure	1	Allowance	\$60,000.00	\$60,000.00		
- Trash Receptacle	2	EA	\$750.00	\$1,500.00		
- Dog Waste Station	1	EA	\$250.00	\$250.00		
- Bench	3	EA	\$2,500.00	\$7,500.00		
- Picnic Table	6	EA	\$2,500.00	\$15,000.00		
- Landscaping	1	Allowance	\$5,000.00	\$5,000.00		
North Secondary Picnic Area Subtotal					\$89,250.00	
Project Subtotal					\$89,250.00	
15% Contingency					\$13,387.50	
Construction Subtotal					\$102,637.50	
A/E Fees					\$12,316.50	
<b>Project 8A Total</b>					<b>\$114,954.00</b>	

Project 8B						
<b>Secondary Picnic Areas</b>						
- Secondary North Pavilion Structure	1	Allowance	\$60,000.00	\$60,000.00		
- Trash Receptacle	2	EA	\$750.00	\$1,500.00		
- Dog Waste Station	1	EA	\$250.00	\$250.00		
- Bench	3	EA	\$2,500.00	\$7,500.00		
- Picnic Table	6	EA	\$2,500.00	\$15,000.00		
- Landscaping	1	Allowance	\$5,000.00	\$5,000.00		
South Secondary Picnic Area Subtotal					\$89,250.00	
Project Subtotal					\$89,250.00	
15% Contingency					\$13,387.50	
Construction Subtotal					\$102,637.50	
A/E Fees					\$12,316.50	
<b>Project 8B Total</b>					<b>\$114,954.00</b>	
<b>Project 8 Complete Total</b>					<b>\$229,908.00</b>	

**PROJECT 9: PASSIVE NATURE TRAILS**

PROJECT 9A						
ITEM	QUANTITY	UNIT	UNIT COST	TOTAL	SUBTOTALS	NOTES
<b>Nature Trails</b>						
- Select Clearing and Grubbing	1	Allowance	\$15,000.00	\$15,000.00		
					Boardwalk Subtotal	\$15,000.00
					Project Subtotal	\$15,000.00
					15% Contingency	\$2,250.00
					Construction Subtotal	\$17,250.00
					A/E Fees	\$1,725.00
					<b>Project 9A Total</b>	<b>\$18,975.00</b>
PROJECT 9B						
ITEM	QUANTITY	UNIT	UNIT COST	TOTAL	SUBTOTALS	NOTES
<b>Boardwalk</b>						
- Permitting	1	Allowance	\$18,835.00	\$18,835.00		
- Boardwalk	1500	SF	\$154.00	\$231,000.00		
					Boardwalk Subtotal	\$249,835.00
					Project Subtotal	\$249,835.00
					15% Contingency	\$37,475.25
					Construction Subtotal	\$287,310.25
					A/E Fees	\$34,477.23
					<b>Project 9B Total</b>	<b>\$321,787.48</b>
PROJECT 9C						
ITEM	QUANTITY	UNIT	UNIT COST	TOTAL	SUBTOTALS	NOTES
<b>Signage</b>						
- Informational Bird Blind Structure	2	Allowance	\$4,000.00	\$8,000.00		
- Interpretive Sign	2	EA	\$2,500.00	\$5,000.00		
-Wayfinding Signage	4	EACH	\$1,518.00	\$6,072.00		
					Signage Subtotal	\$19,072.00
					Project Subtotal	\$19,072.00
					15% Contingency	\$2,860.80
					Construction Subtotal	\$21,932.80
					A/E Fees	\$2,631.94
					<b>Project 9C Total</b>	<b>\$24,564.74</b>
					<b>Project 9 Complete Total</b>	<b>\$365,327.22</b>

**PROJECT 10: PEDESTRIAN BRIDGE TO BAKER FARM**

PROJECT 10						
ITEM	QUANTITY	UNIT	UNIT COST	TOTAL	SUBTOTALS	NOTES
<b>Pedestrian Bridge</b>						
-Pedestrian Bridge to Baker Farm	1	Allowance	\$150,000.00	\$188,000.00		
- Trailhead Sign	2	EA	\$2,500.00	\$5,000.00		
					Pedestrian Bridge Subtotal	\$193,000.00
					Project Subtotal	\$193,000.00
					15% Contingency	\$28,950.00
					Construction Subtotal	\$221,950.00
					A/E Fees	\$28,050.00
					<b>Project 10 Total</b>	<b>\$250,000.00</b>





# HENRY HUDSON PARK CONCEPTUAL DIAGRAM

TOWN OF BETHEHEM, NY



0' 60' 120'





# HENRY HUDSON PARK CONCEPTUAL DIAGRAM

TOWN OF BETHLEHEM, NY

