THE HUDSON RIVER DISCOVERY CENTER

Cortlandt Waterfront Park in Verplanck

Feasibility Study/
Master Plan Report
November 26, 2018

PREPARED BY:

PREPARED FOR THE

TOWN OF CORTLANDT

TOWN BOARD

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NEW YORK STATE OF OPPORTUNITY | Hudson River Estuary Program

A Program of the New York State Department of Environmental Conservation

In 2016, a $50,000 NYSDEC Hudson River Estuary Grant was awarded to the Town of Cortlandt ('the Town') to study the feasibility for the design and programming of an environmental education center within the Cortlandt Waterfront Park, an element identified in the 2015 Verplanck Waterfront Master Plan. The Town engaged the services of MKW+Associates, Christina Griffin Architect and AKRF, Inc. (the Consultant Team) and established a Community Steering Committee (CSC) to guide the project work. The CSC, the Consultant Team and the Town's Planning Department staff worked together to evaluate the potential facility programming, financing, and construction feasibility for the future Hudson River Discovery Center (HDRC). This report documents the participatory planning process and the resulting conceptual design vision and strategy recommendations.

Project Background

Upon acquisition of the parcels that comprise the Cortlandt Waterfront Park, the Town began a collaborative public planning process to layout a vision for the 30-acre parcel, which became the 1993 Verplanck Waterfront Master Plan aka "the Cavendish Plan". Many elements of the 1993 plan have been implemented including the reconstruction of the Steamboat Dock, the Broadway Overlook, a public boat launch, a Veterans Memorial, playground, the Verplanck Nature Preserve & Trails and the Broadway Streetscape which connects the Cortlandt Waterfront Park to the center of Verplanck. In 2014, the Town received a $32,000 grant which led to the "2015 Verplanck Waterfront Master Plan". The 2015 plan provides a vision and framework for the Park which include opportunities for appropriately scaled economic development, public waterfront access as well as passive/ active recreation. As part of the Master Plan an environmental/discovery center was proposed, in the area of the former Martin Trailer Park, as a community space where residents school children and other visitors could learn about the ecology, history and culture of the area.

The HRDC Master Plan Vision

The proposed HDRC is envisioned to be a three-story, 15,000 sf boomerang shaped structure with the interior designed with a high level of flexibility to allow for a variety of functions. It will be a showcase of sustainability and energy conservation. The building design will aim to achieve a LEED platinum rating, meet the Passive House standard, and achieve goals set by the Living Building Challenge. Brick factories that once dominated the waterfront provide inspiration for the building's street-facing facades which will incorporate reclaimed bricks and other local materials. The building's boomerang shape will capitalize on Hudson River views through angled glass walls and a wide terrace facing the river. A lower level plaza immediately adjacent to the river-facing façade of the building will be a plaza-type space for café seating, flexible programming, community events and festivals.

The design of the 8-acre site will respects and reflects the local ecology, history and culture. Site features, including an open-air amphitheater, demonstration gardens, rain gardens, bioswales and sustainably maintained native plantings, enhance the facility programming potential. ADA-compliant paths will maximize universal

access throughout the project site and connect with the Town's pedestrian/ bicycle circulation network. A series of small parking lots to the east of the building's entrance will serve the building tenants and visitors. The existing parking area southwest of the building will be preserved. The airplane hangars will be refurbished to better serve the Cortlandt Community Rowing Association. Critical to accommodating the rowing association, the site design surrounding the boat storage will be largely open to allow for comfortable maneuvering of long sculls. Temporary food vendors/ food trucks can share the existing parking area during events.

Recommendations

(The recommendations summarized here are more fully described in Section 4 of this report)

The HRDC will teach visitors about the history of the Hudson River and its role in our lives, past and present. Program opportunities will focus on the themes of local history and the environment. The recommended building size is between 10,000 and 18,000 square feet including up to 7,000 square feet of 'floodable space' on the lowest level below flood elevation. The building has been located to take advantage of the existing grade change, allowing for use of a lower level to be access from the river side and minimizing the impact of the building's height when viewed from landside.

Two potential organizational structures for partnering were identified:

- Option 1) An assemblage of partner organizations under the umbrella of a not-for-profit entity. This approach would require securing a collection of partners with the technical knowledge and financial resources necessary to help manage activity long-term, and whose missions/visions closely align with the Town's goals for the site.
- Option 2) Full management of the HRDC by an existing institution that would value the waterfront location for research and/or education purposes. The existing institution would take on responsibilities for Full management of operations HDRC and associated financing responsibilities.

Regardless of the organizational structure, the Town's intent is to ensure active and inclusive programming. The Town's position of influence over the HRDC's program will be highly dependent upon the Town's short- and long-term resource commitments. The Master Plan Report offers the following recommendations to support financing strategies for the HRDC.

- Form not-for-profit entity prior to HRDC construction financing.
- Leverage "net zero" concept to open up sources of funding (i.e. government entities or Academic institutions)
- Seek out/prioritize partners who align with Town goals.
- Seek out revenue-generating cost offsets.
- Incorporate ongoing funding research into partnering effort.
- Anticipate and plan for sustained resource commitment.

BACKGROUND: PUBLIC SPACE PLANNING

Upon acquisition of the Cortlandt Waterfront Park properties in the late 1980's and early 1990's, the Town of Cortlandt (the Town) began a collaborative public planning process to layout a vision for the 30-acre parcel. The Town hired the Cavendish Partnership and Bourne Engineering in 1993 to work with the community and the Town to develop the Verplanck Waterfront Master Plan aka "the Cavendish Plan". Many elements of the 1993 plan have already been implemented including the reconstruction of the Steamboat Dock, the Broadway Overlook, a public boat launch, a Veterans Memorial, playground, the Verplanck Nature Preserve & Trails and the Broadway Streetscape which connects the Cortlandt Waterfront Park to the center of Verplanck.

In 2014, the Town received a $32,000 New York State Department of State grant to study waterfront visioning and the development of revitalization strategies as a first step towards completing a town-wide Local Waterfront Revitalization Plan (LWRP) and updating the 1993 Cavendish Plan. Out of this effort came the "2015 Verplanck Waterfront Master Plan" which provides a vision and framework for the Park which include opportunities for appropriately scaled economic development, public waterfront access as well as passive/active recreation.

In 2016, the Town received a $50,000 grant from the NYSDEC Hudson River Estuary program to study the feasibility for the design and programming of an environmental education center, to be located at Cortlandt Waterfront Park. The environmental center, which has become known as "The Hudson River Discovery Center" (HRDC), will advance goals identified in the Town's 2015 Verplanck Waterfront Master Plan. Below is a list of relevant objectives and program options were identified in that Master Plan.

Photos above are of the existing Cortlandt Waterfront Park near the project site.

Objectives

- Improve and enhance the appearance, functioning, and access to the Cortlandt Waterfront Park.
- Address environmental issues and natural hazards, such as sea level rise, flooding, and erosion.
- Promote a sense of stewardship.

Programming Options

- Support wide range of dining experiences and opportunities throughout the park- from picnicking and farmers markets to food trucks and restaurants - balance the waterfront park use with expanding economic vitality.
- Create functional open spaces along the waterfront for community gatherings and other outdoor events.
- Connect people to the water's edge to promote economic vitality. Support a greater awareness of Cortlandt's natural environment, history, and culture through opportunities for heritage-based education, tourism, and events.
- Preserve natural resources along the waterfront and provide passive recreation opportunities.
- Enhance and expand the diversity of water-based recreational activities that draw both visitors and locals for activities such as boating, fishing, and swimming.

HRDC-specific Objectives

- Strengthen connections between the community and the Hudson River;
- Activate the public realm; and
- Provide amenities for the local population and to attract visitors from throughout the region.

SITE DESCRIPTION

The project study area is located within the 28-acre Cortlandt Waterfront Park in the Hamlet of Verplanck, situated on a peninsula that extends into the Hudson River. Verplanck Point provides expansive and picturesque Hudson River views. The location is significant for its Revolutionary War history and its geography is unique as one of the only areas along the Hudson River south of Albany where waterfront access is not impeded by railroad tracks.

At the project site, the public has opportunities to physically access the River's edge at a level uncharacteristic of the majority of Westchester County's riverfront parks. Vegetation at this location is generally open lawn with scattered canopy trees. The limited vegetation provides for generally unlimited views to the River but will require a thoughtful landscape plan. No formal pedestrian trails currently exist in the area defined for the HRDC project, however there are paths in other areas of the Park.

The project site is located on the south side of Riverview Avenue, a one-way west-bound roadway. Trails and a small parking area have recently been constructed on the north side of the roadway to facilitate public access of the Parks' natural woodlands and ponds. The project site can be accessed by vehicle at three locations, two curb cuts provide access to the asphalt drives at the site of the former mobile home park, and one curb cut provides access to a gravel parking area, public boat launch, and buildings used for Cortlandt Community Rowing Association for boat storage.



Photos above illustrate the character of the project site's existing conditions.

Cortlandt Waterfront Park

PARTICIPATORY PLANNING PROCESS

A Community Steering Committee (CSC) was established by resolution of the Town Board on November 15, 2017 to guide the Consultant and Town Staff's project work. The Town Board appointed the following members to CSC: David Allen, Lisa Cole, David Douglas, Einar Johannsen, Melissa Johannsen, and Joseph Ryan. Councilman Frank Farrell was appointed as liaison from the Town Board, and Chris Kehoe, Michelle Robbins, Rosemary Boyle Lasher, Michael Preziosi, P.E., from the Town staff.

The first CSC meeting was held on January 24, 2018. The meeting served as an introduction to the project parameters and the study area. At the February 26, 2018 Town Board Work Session, the Consultant team presented the project goals, objectives, and a summary of the preliminary design and programing discussions. It was established that that the Town Board intends to play a major role in overseeing the management of the Discovery Center, which will be located on Town Property, but does not anticipate a role in the daily operations and programming of the facility. The Town Board indicated that it is amenable to the two potential management strategies presented. One option would be to identify an existing institution that would value the waterfront location for research and/ or educational purposes. A mutually beneficial partnership would be structured to assure long-term financial sustainability of the Discovery Center. The other option identified was to establish a new not-for-profit organization focused on the Hudson River as a unifying theme. This new organization would have Town representation on its executive board. Its mission would be to strengthen connections to the Hudson River through supporting, facilitating and improving physical access and through providing a setting for education about the ecology and history of Cortlandt's waterfront.

Two building/site design concepts Scheme 'A' and Scheme 'B' - were presented at the at the second CSC meeting on March 14, 2018. Scheme A showed a one-story structure of approximately 4500 sf set at an elevation of 13 and Scheme B showed a two-story structure of approximately 10,500 sf with a main floor elevation set at 18 and the lower level boat storage set at 8.

Both schemes showed 35 parking spaces including 2 ADA compliant spaces, three additional short-term parking spaces immediately in front of the building, and a lawn area near the paved parking suitable to accommodate an additional +/20 'overflow' parking spaces. The vehicle circulation approach, entry, and egress for both schemes were shown as a oneway system to minimize complexity of vehicle movements on the site which will have significant pedestrian functions. Both schemes incorporate a hierarchy of pedestrian pathways with a major ADA compliant paved

pathway close to the parking area and the building. This path provides an additional option for the eastwest pedestrian connection separate from the vehicular roadway with its associated sidewalk outside the park area. Additional paths would be surfaced with mulch, gravel, fine dust or would be simply a mowed path through meadow plantings. Restrooms in the building would be designed with external access for public use.

Two parallel efforts were recommended to advance exploration of potential partners. The first was to develop a 'Request for Expressions of Interest' (REI). The Consultant Team would draft a document for the Town to send to candidate partners that solicits information on the organization's potential interest, including their vision of involvement, and requests a letter from interested organizations for possible inclusion in consolidated funding application. The second effort was to create a shortlist for calls and one-on-one meetings. The Consultant Team would meet with or have phone conversations with approximately five targeted candidate partners. Potential partners identified at the CSC meeting included Columbia University's Lamont-Doherty Earth Observatory, Pace University, Cornell University, and others.

The following was the consensus of the meeting participants:

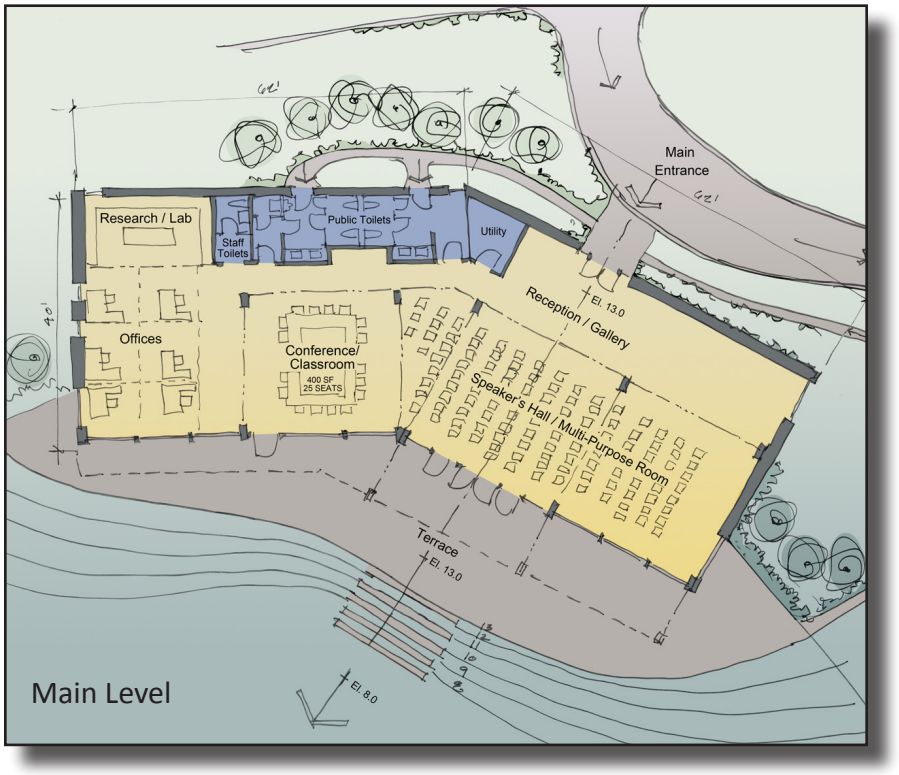
The two-story structure (Scheme 'B') is the concept that would be developed further. This option accommodates the potential to house a greater variety of functions and is more likely to generate long-term success and financial sustainability. It would also have a significant presence on the site and provide a greater sense of permanence.

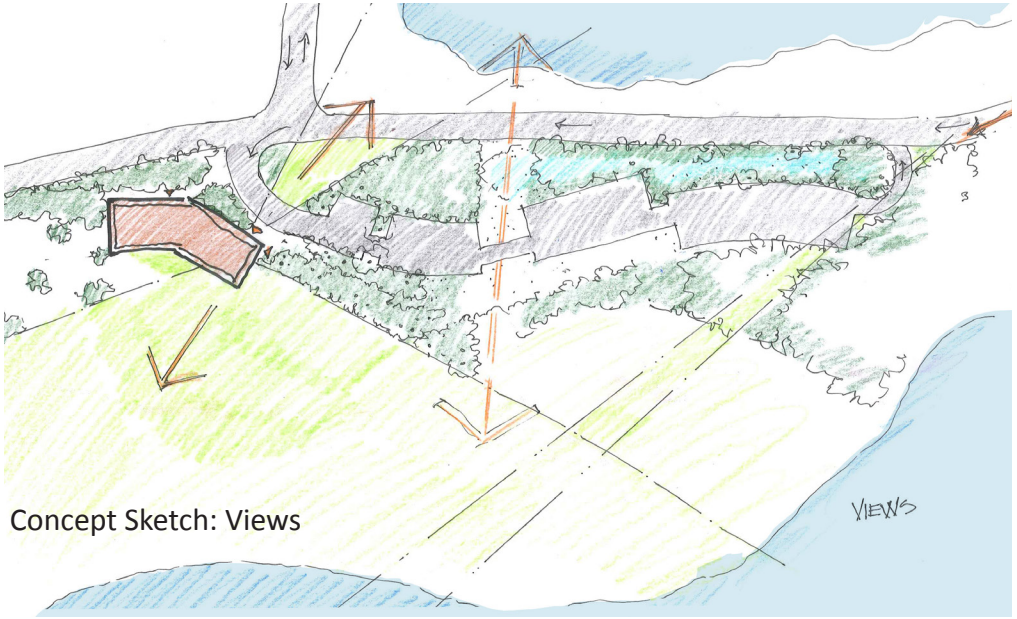
Renovation of the existing hangar buildings for more efficient boat storage would be preferable to the 9' height storage area shown in Scheme 'B'. The lower level of the building, however, could provide the rowing association space for training facilities, offices, meeting space, etc.

Three dimensional renderings/ sketches of the proposed structure and overall site plan concept would be developed.

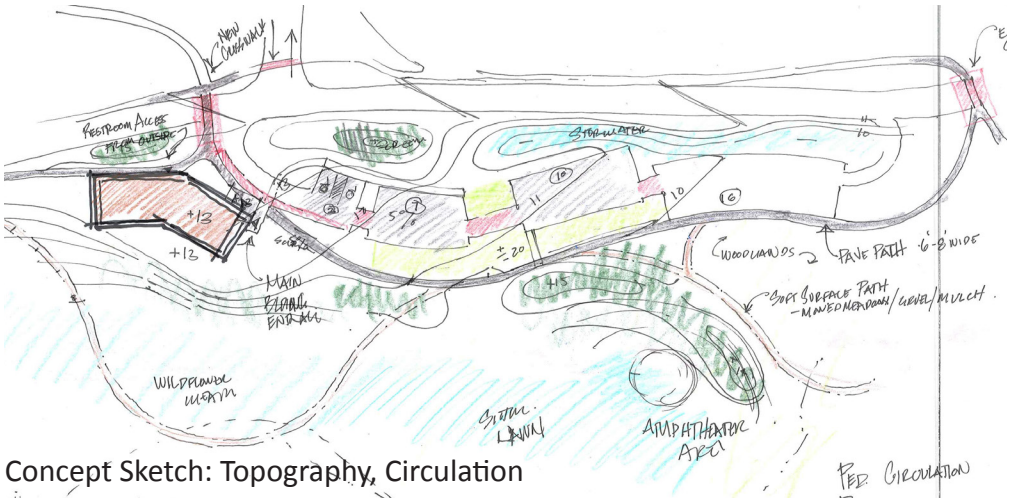
The consultant team would reach out to contacts at potential partnering institutions in the region.

The final CSC/ Steering Committee Meeting was held on April 11, 2018. At this meeting the final conceptual building and site design recommendations were presented (see section IV: Design Recommendations). In addition, the initial outreach to potential partner organization was discussed along with potential financing strategies (see Section III: Programing/Financing Options).





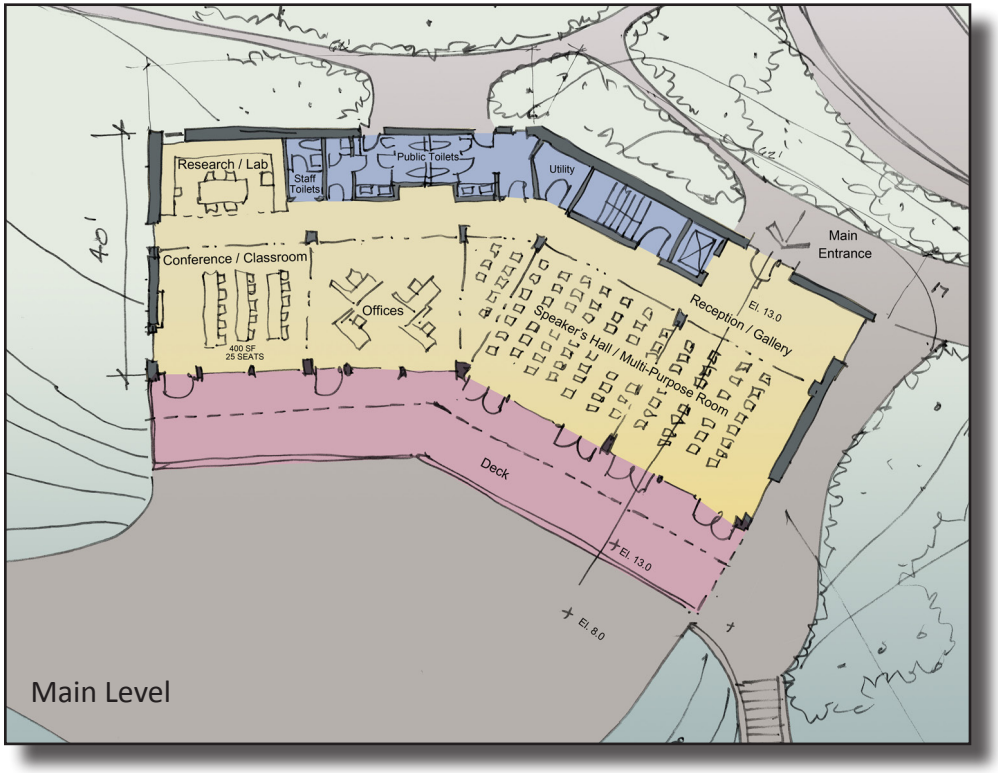
Concept Sketch: Views



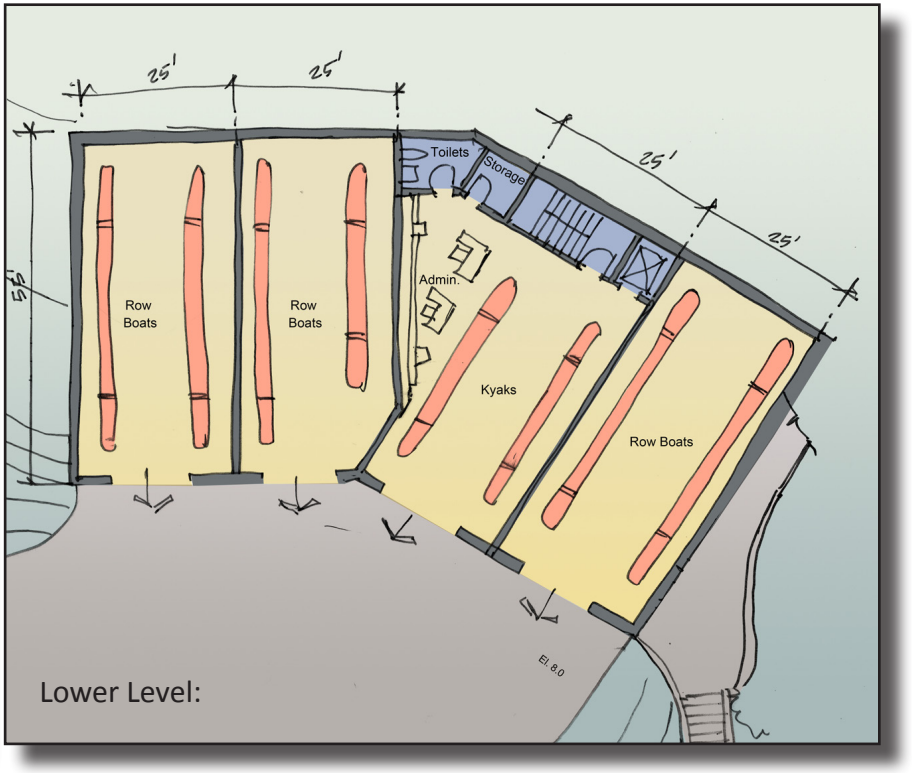
Concept Sketch: Topography, Circulation

PRELIMINARY DESIGN OPTION: SCHEME A

A one-story structure of approximately 4500 sf set at an elevation of 13.



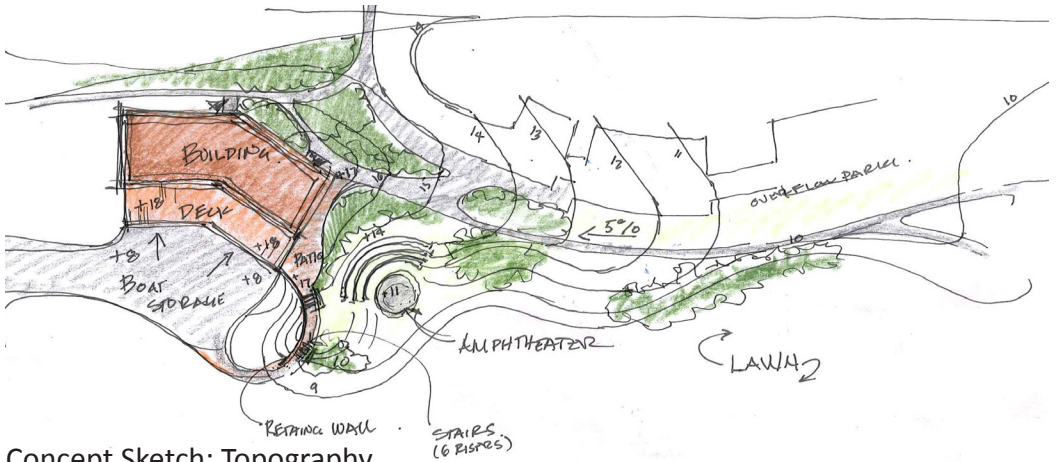
Main Level



Lower Level:

PRELIMINARY DESIGN OPTION: SCHEME B

A two-story structure of approximately 10,500 sf with a main floor elevation set at 18 and the lower level boat storage set at 8.



Concept Sketch: Topography

BUILDING CONCEPT PLAN

The Hudson River Discovery Center (HRDC) is envisioned as a destination for experiencing the Hudson River environment. Nestled into a gentle slope near the water's edge at the 30-acre Cortlandt Waterfront Park in the Hamlet of Verplanck, NY, the three-story, 15,000 sf building and surrounding park area will be a place for inspiration and education, providing a stimulating environment to learn about the ecology, history, and the special characteristics of this waterfront site.

The Town of Cortlandt engaged the services of our consulting group consisting of architect, landscape architect, and planner to study the feasibility for design and programming for the HRDC. The Town was awarded a NYSDEC Hudson River Estuary Grant for the project, which included site evaluation, potential facility programming, conceptual building and site design and recommendations for development strategy.

Under the shadow of Indian Point located just north of the site, the building will be unique in providing to the public an opportunity to learn about living without nuclear power and fossil fuels and embracing sustainable design ideas and principles of energy conservation. The building will serve as a showcase of sustainability targeted to achieve a LEED platinum rating, meet the Passive House standard, and achieve goals set by the Living Building Challenge.

Inspiration for the building design is derived from the brick factories that once dominated the waterfront. The facades make use of reclaimed brick and factory motifs to reflect the industrial past. The building's boomerang shape allows occupants to experience a variety of vistas of the Hudson River through angled glass walls and a wide terrace facing the river. Accessible through a series of glass doors is a large terrace with steps leading to the amphitheater, outdoor displays, and the waterfront. At the lowest level, the building opens onto an open space to be used for outdoor markets and events. The open flow between interior and exterior spaces allows visitors to explore a variety of indoor and outdoor activities and learning experiences.

Visitors will enter the building through a central hall and reception area that lead to three floors of gallery space, a coffee bar, and observation deck. From the central hall, visitors can enter a 200-person capacity hall/multi-purpose, which provides a venue for community gatherings and speaking events. Opposite this hall is sub-dividable space providing opportunities for group activities, conferences, and K-12 educational programs. Laboratory and research facilities are provided for conducting research about the river ecology and regional environment. An open staircase in the central hall leads to the lower level, which will be designed for floodable uses, such as seasonable community activities, rowing club facilities, and boat storage. Located above the public spaces at the mezzanine level, offices and meetings rooms will be provided for administrative and support functions. Handicap accessibility will be provided by an elevator with flood-protection sensors.

The HRDC is designed to be a showcase of sustainability targeted to achieve a LEED platinum rating, meet the Passive House standard, and achieve goals set by the Living Building Challenge. The building itself will be a teaching model to educate the public about sustainable design ideas and energy conservation. The building is oriented to capture passive solar energy for winter heat gain through south-facing triple-glazed windows and glass doors, that are shaded by a deep canopy to reduce summer solar heat gain. The airtight thermal enclosure and continuous ventilation contribute to achieving a net-zero energy balance. Control monitors will be on display and used as educational tools to track the progress of sustainable initiatives for energy, water, and waste systems. Included in these initiatives will be the following features:

- High performance thermal envelope
- Solar photovoltaic panels
- Passive solar heat gain methodologies
- Summer shading devices and solar heat gain monitors
- Daylighting strategies
- Graywater system
- Rainwater collection and reuse system
- Composting, recycling, and zero waste collection
- Use of recycled and reclaimed materials

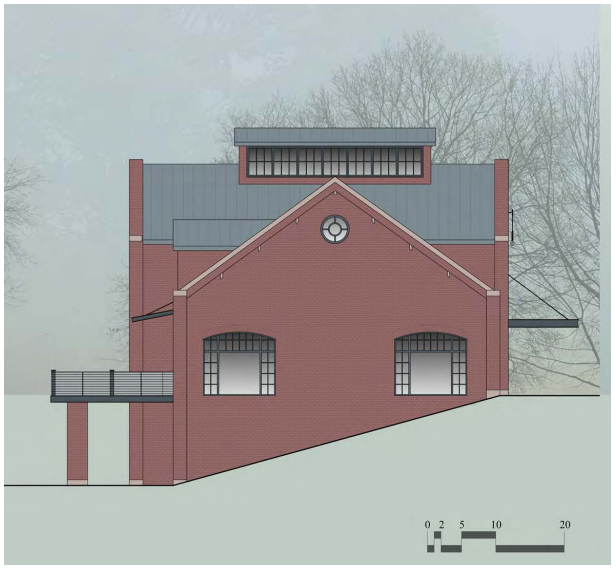
Conceptual Sketch of North Building Facade (Street Side)

Main floor at elevation of 18.

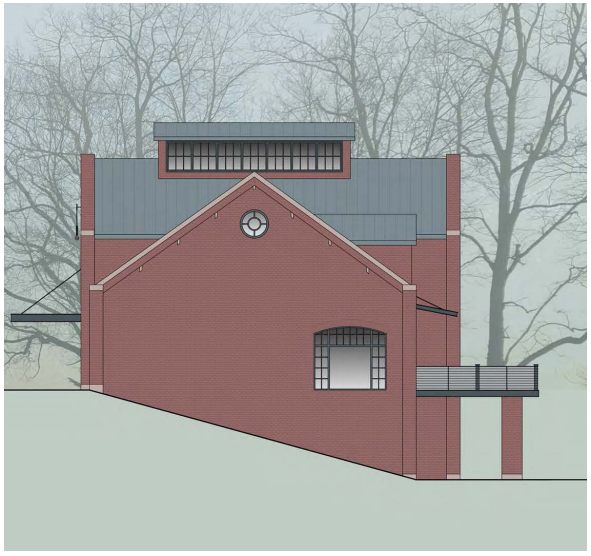
Conceptual Sketch of South Building Facade (River Side)

Lower level elevation set at 8.

West Elevation



NorthElevation



South Elevation

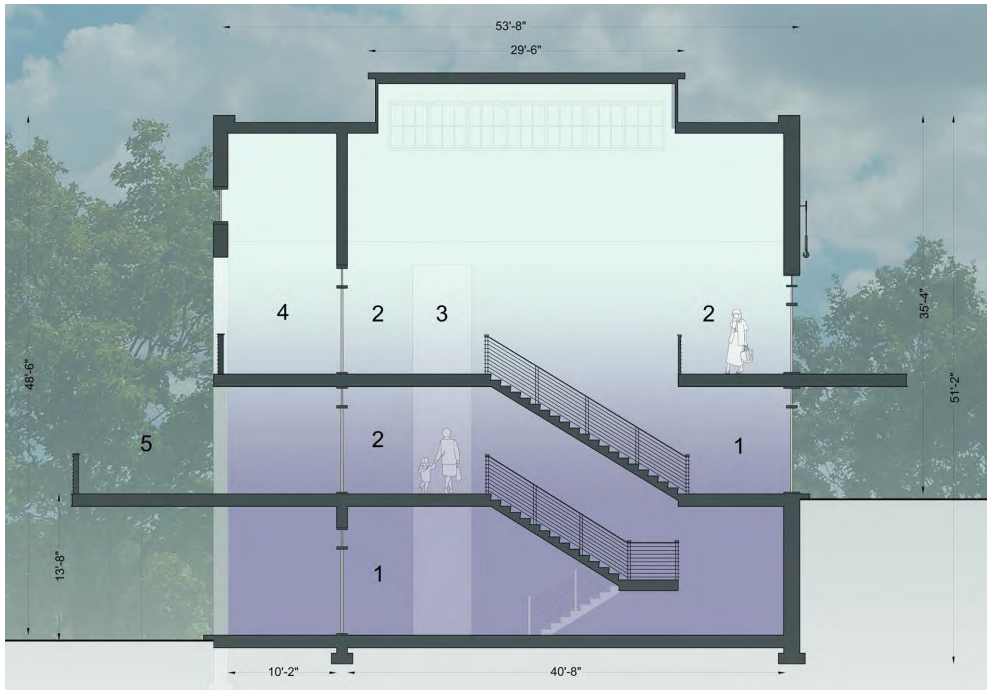
East Elevation

SCHEMATIC BUILDING ELEVATIONS

Main Level

Mezzanine Level

Lower Level



Building Section

SCHEMATIC BUILDING FLOOR PLANS AND SECTION

SITE DEVELOPMENT CONCEPT PLAN

The Hudson River Discovery Center will be an educational hub providing opportunities for the community and visitors to become active participants in programs that enhance knowledge and appreciation of this unique waterfront site. The site plan extends the functions of the Hudson River Discovery Center from the building through the landscape to the River's edge. The design of the 8-acre site will respect and reflect local ecology and culture, and will maximize access for people with varying degrees of mobility.

A series of small parking lots to the east of the building's entrance will serve the building tenants and visitors. Rain gardens and bioswales located adjacent to the parking areas will provide stormwater management functions. A winding path will run parallel to the parking area to convey users toward the building, with smaller paths branching off to distribute visitors throughout the park. The existing driveway west of the building will be preserved to allow access for temporary vendors, food trucks, boat launching and the Cortlandt Community Rowing Association. A plaza at the south facing building entrance will be programable space and will accommodate outdoor dining. A stairway will wrap around the east side of the plaza and bring visitors up to the deck level of the building.

Site features adjacent to the building will enhance programming ability by creating designated outdoor spaces for performances and demonstrations. An amphitheater will sit east of the building and can serve as a space for concerts and lectures. A demonstration garden will be located east of the amphitheater. This garden can attract a variety of tenants as the space can be used for outreach and educational purposes.

The existing parking area southwest of the building will be preserved. The airplane hangars will be refurbished to better serve the Cortlandt Community Rowing Association. Critical to accommodating the rowing association, the site design surrounding the boat storage will be largely open to allow for comfortable maneuvering of long sculls. Temporary food vendors can share the existing parking area during events.

The surface materials and vegetation used will be varried to accommodate many forms of recreation. Open lawn will encourage informal active recreation and an effort will be made to preserve significant trees. A variety of planting typologies will exist onsite to improve visual quality and enhance local ecology. Ecological shoreline restoration will improve water quality and

Design inspiration photos

Schematic Site Plan

mitigate the impact of storms. Tall grass meadows will benefit bird species. Wildflower meadows will offer striking views while benefitting pollinator species including honey bees and Monarch butterflies. The meadows can be fitted with windmills to allow for ecofriendly power generation onsite. Stormwater plantings will improve quality of stormwater runoff and provide additional nectar sources for pollinators. All plantings will provide educational opportunities for a variety of age groups.

To encourage a connection to the river, winding pathways will run parallel to the shoreline. Two lookout points will provide sweeping views of the Hudson's scenic landform. A pavilion at the at the water's edge will provide permanent seating and additional views.

Rendering: Birdseye View From Southeast

Rendering: Birdseye View From Northwest

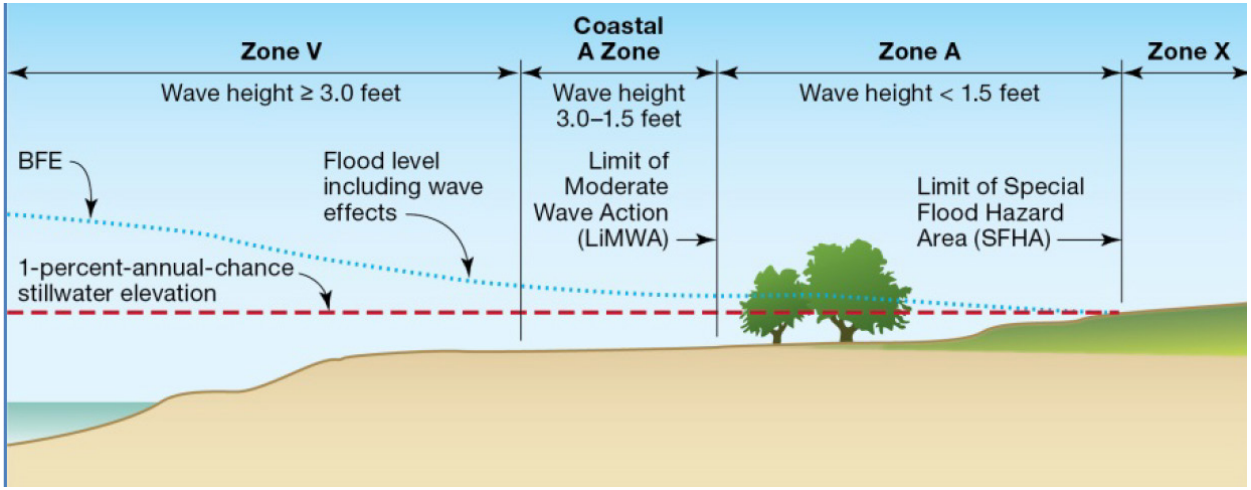


Figure 1: Flood Plain Limits by FEMA

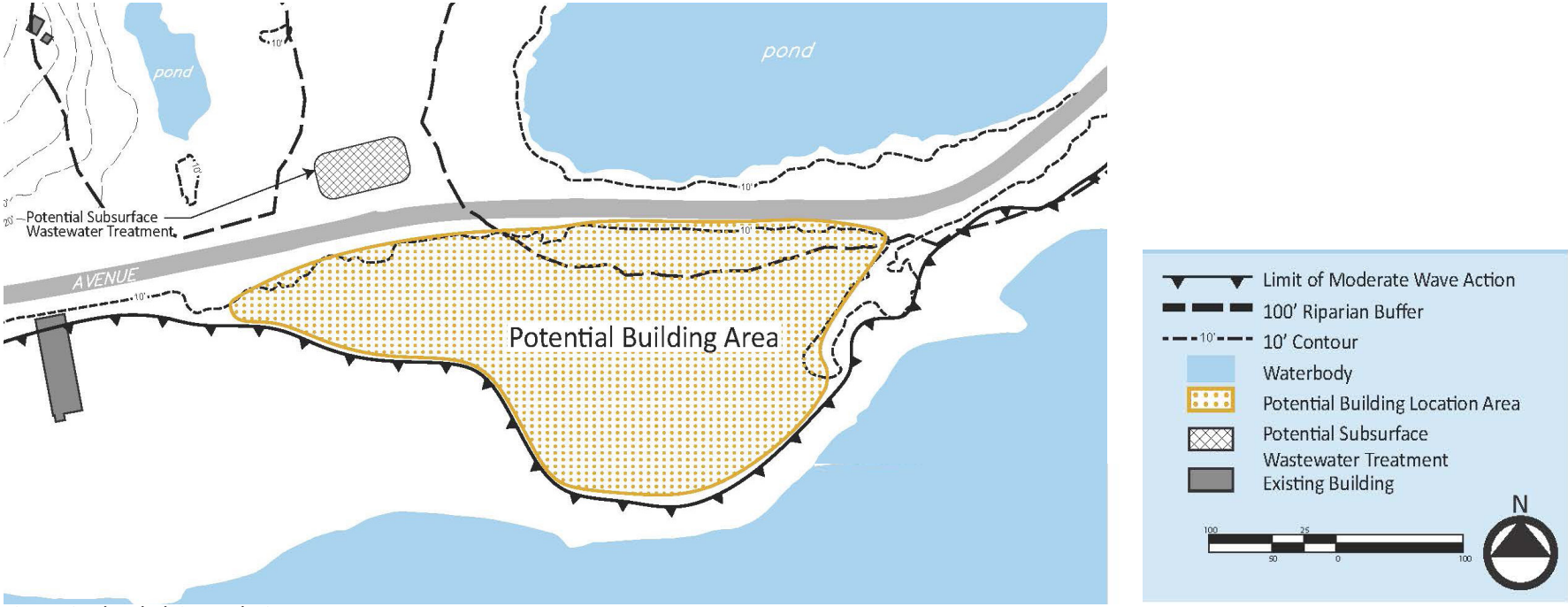


Figure 2: Flood Plain Analysis

SITE ANALYSIS

Flood Hazard Considerations

A review of the Preliminary FEMA Flood Insurance Rate Map (FIRM) dated December 2014 indicates that a large part of the Waterfront Park is located within the Zone AE (the 100-year floodplain) and much of the Park is located within the 'Limit of Moderate Wave Action' (LiMWA). It is recommended that the Discovery Center building be located outside of the LiMWA. As the Town's preferred location for the Discovery Center is South of Riverview Avenue, construction of a structure would occur within the AE Zone. Per requirements of Town Code, the lowest floor of the building, or level of flood proofing should be set at a minimum of two feet above the 'base flood elevation' (BFE). **Figure 1**, left, illustrates the typical relationship of the coastal flooding zones' designations and the BFE.

Construction of a structure within the AE Zone would require raising of the lowest floor of the building higher than the existing grade. The structure can be raised by means of pilings, columns (posts and piers), shear walls parallel to the flow of water, placement of fill or solid foundation perimeter walls with openings sufficient to facilitate the unimpeded movement of floodwaters. Based on the datum used for the December 2008 topographic survey provided to the consultant team, the lowest floor of the building should be set at Elevation 13.0 or higher. (Note: the datum used for the Preliminary FIRM is different than the datum used for the 2008 survey). **Figure 2** shows the potential building area south of Riverview Avenue, outside the LiMWA, but within the AE Zone.

Subsurface Wastewater Treatment System

Preliminary discussion with the Westchester County Department of Health (WCDOH) has indicated that subsurface treatment of wastewater may not be permitted within the floodplain. A potential location for a subsurface system has been identified to the north of Riverview Avenue (see **Figure 2**). Percolation tests must be completed to verify the suitability of the soil at this site to support the wastewater treatment system. In the event excessive percolation rates are observed, modifications to the existing soils may be feasible to allow installation of the system.

Water Utilities

It is anticipated that the existing water main within Riverview Avenue will have sufficient capacity to serve the building. All water service infrastructures located within the building, including meters, backflow prevention devices, and pumps must be located at least two feet above the BFE, or above elevation 13.

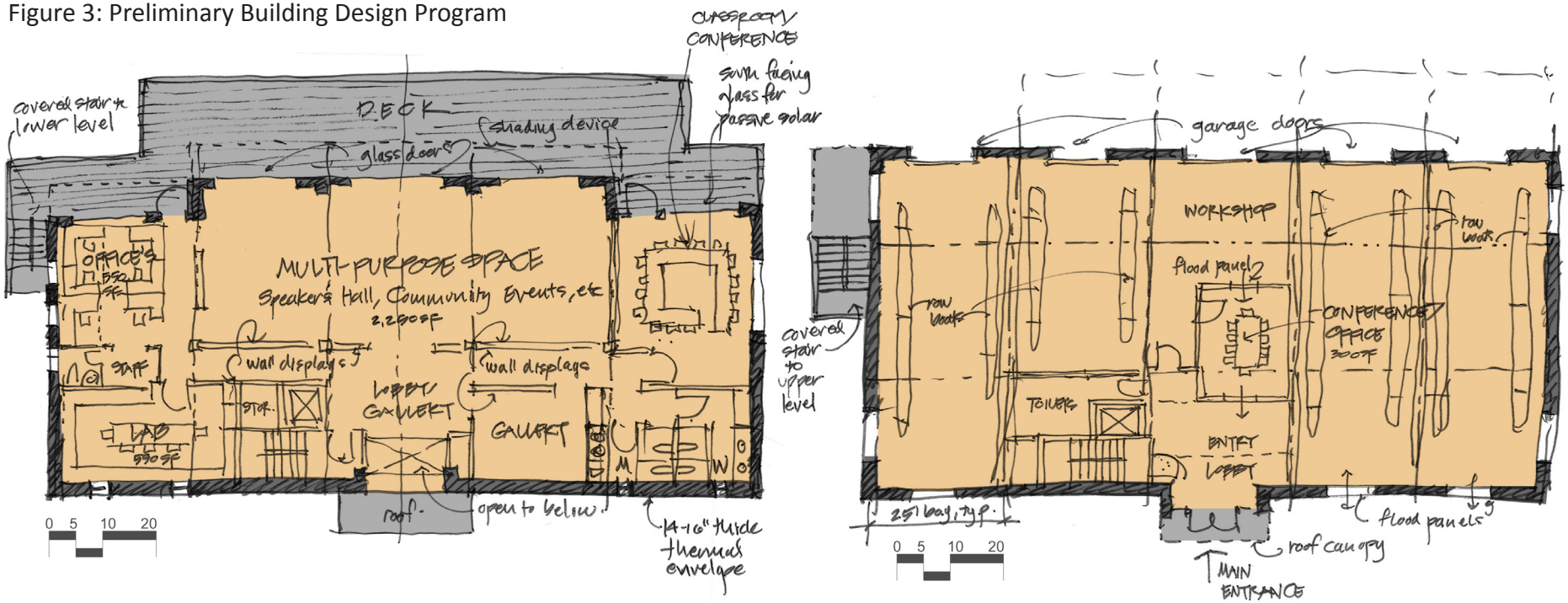
PRELIMINARY ARCHITECTURAL DESIGN STUDY

The preliminary design study was based on the goal of creating a destination for learning about the environment and history of the Hudson River at the Hamlet of Verplanck within the Town of Cortlandt. It was understood that the Discovery Center would 1) provide opportunities to inform visitors about the unique watershed area and Hudson River waterfront, and 2) provide a model of energy conservation and sustainable design. The facility would potentially provide a venue for seminars, speaking events, community gatherings, and educational programs for students K-12. Permanent and/or temporary exhibits may be shown in galleries or on display walls and basic laboratory space may provide facilities for conducting research about the River ecology and regional environment.

In anticipation of potential flooding at the site it will be necessary to raise the main level of the building and incorporate flood gates and other design strategies. The lower level may provide for storage for boats, or space for training and offices supporting the activities of the Cortlandt Community Rowing Association (CCRA) which currently stores equipment in the historic hanger building on the project site.

The preliminary design program (**Figure 3**) and accompanying Design Study showing concept floor plans and sketches were intended to be a starting point to stimulate discussion of ideas for design of the new facility. These studies are based on an information gathering process that began in Fall 2017, which included meetings or conversations with Cortlandt Town Planners, Town Engineer, Town Historian, CCRA, visits to the site, and research of similar facilities.

Figure 3: Preliminary Building Design Program



Upper Level

Function / Area	SF
Main Lobby / Gallery	400
Public Elevator & Stair	200
Gallery	400
Public Toilets	400
Multi-Purpose Space (150 person occupancy)	2250
Classroom / Conference Room (15 students)	700
Offices / Desk space - 3 full time, 3 seasonal	700
Staff Toilet & Lounge	100
Laboratory & Research Facilities	650
Circulation, Utilities, & Storage	600
Total Upper Level	6400

Lower Level

Function / Area	SF
Main Lobby	400
Public Elevator & Stair	200
Gallery	400
Public Toilets	300
Conference Room / Office	300
Training Room	800
Boat Storage	3700
Circulation, Utilities, & Storage	300
Total Lower Level	6400

PUBLIC OUTREACH

Discussions with Town staff, the Town Supervisor, Town Board, and the Citizen Steering Committee members provided insight and feedback that was critical to the process of formulating program options.

Discussions with Town Representatives and Citizen Steering Committee Members

The Consultant Team met regularly with Town staff, held three working-group sessions with the Citizen Steering Committee, and presented and discussed our research with the Town Supervisor and Town Board. On all of these occasions, individuals shared ideas about potential HRDC programming. Key takeaways were as follows:

Environmental education is too limiting – While environmental issues—including sustainability, resiliency, and river ecology—were recognized as important programming components, there was general consensus that the site offers many program opportunities beyond those traditionally offered as part of an environmental education center. There was also concern that environmental-themed facilities were "overdone" or saturated in the local market, with many not appearing to be successful and/or struggling to remain viable.

History as a key program element – Cortlandt Waterfront Park holds a unique place in Revolutionary War history that is already recognized and promoted through signage and information placards within the park. Many suggested recognizing the historic importance of the site through programming at the HRDC. In addition, some stakeholders advocated for providing educational programming that focuses on Verplanck's history as a center for commercial fishing, brickmaking, and ice making. Others felt historical connections could be promoted even more broadly, to include the Hudson River's role in the shipping industry, and as inspiration to artists. Finally, Town staff identified opportunity to marry the concepts of environment and history by providing educational experiences centering on the 17-year Storm King legal battle that launched the modern-day environmental movement in the United States.

Connections to the Hudson River – In addition to river education, Citizens Steering Committee members emphasized the importance of providing new and enhanced opportunities to directly engage with the Hudson River. Ideas included incorporating rowing facilities into the HRDC, offering kayak rentals, fishing instruction, and bringing ships to the public dock for viewing and/or embarking.

Leverage site's upland connection – The Verplanck Nature Preserve, Turtle Pond, and Clayhole are valuable natural amenities that could be incorporated into HRDC programming. Some Citizens Steering Committee members even suggested that the HRDC be located adjacent to the Nature Preserve, north of Riverview Avenue.

Offer unique and dynamic programming – Whatever the programming, stakeholders emphasized the importance of maintaining the interest of visitors through engaging content, and warned against static offerings in a traditional museum-like setting. Providing content that excites and inspires was viewed as essential in order to attract regional visitors and to facilitating repeat visitation from a more local audience.

Appeal to multiple user/visitor groups – Citing concerns about long-term sustainability and activity, the Citizens Steering Committee members stressed the need to provide programming that appeals to multiple user groups. For example, a focus on K-12 field trips would be too limiting.

Provide flexibility within the building – Provide flexible spaces within the facility to allow for "pop up" programming opportunities and to provide spaces that meet the needs of various potential user groups. It is expected that the HRDC would become a destination for local school groups as well as a public gathering space for educational outreach, public meetings, seminars, etc. In order to accommodate various group types and sizes, stakeholders agreed that the facility should provide a multi-purpose speakers hall with flexible partitions to "right size" the room.

Provide (small) kitchen facilities within the building – While the site does not have the sewer infrastructure for large catering events, and the scale of such events was considered oversized for the site, the event space would benefit from minimal kitchen facilities (e.g., sink, oven) to heat food prepared off-site, and to provide for cleanup.

It's more than just the building – Programming should not be confined to the HRDC's built structure, particularly given the outstanding natural setting and opportunities to educate and activate through outdoor programming experiences.

Activate the site through program – Many stressed the need to provide program and/or concessions that serve to create a constant and regular presence within and surrounding the HRDC building.

Create community gathering space – Create a location that can serve as a regular destination for local residents. The Citizens Steering Committee members stressed that the park is a neighborhood amenity that should be enhanced by integrating basic place-making offerings such as seating areas with views, or food concessions.

Targeted Outreach: Potential Partner Organizations

The Consultant Team engaged in initial outreach efforts to institutions and organizations identified as potential future partners for the HRDC. These discussions provided valuable information not only about potential partnering strategies (detailed below), but also offered insight into what potential partner organizations may seek in terms of facilities, enabling us to better shape concept program strategy. Key takeaways from discussions:

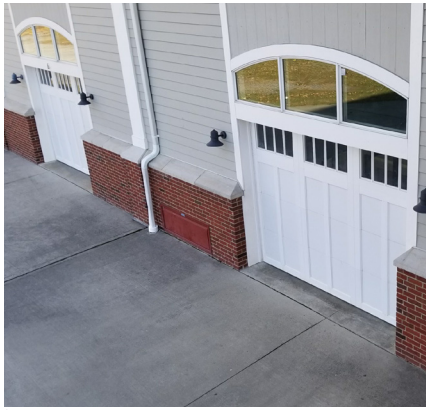
Seek revenue-generating program opportunities – Two program directors specifically emphasized the importance of including revenue-generating uses—such as renting space for private parties, or fee-based admission events—in order to supplement traditional funding sources such as grants, membership dues/donations, and institutional support, all of which can be unpredictable depending on economic conditions.

Everyone likes food – Several representatives asked about food offerings within or proximate to the concept HRDC building, noting that it is important not only to visitors but to on-site staff. Barbara Sacks, Executive Director of the Cornell Cooperative Extension (CCE) suggested a community garden or demonstration garden at the site.

Large event space – Three program representatives remarked that the size of the space allocated to a speakers' hall as part of concept design, at approximately 2,000 square feet or ~125-person occupancy, was undersized.

Research space too small – The concept sizing of research space, at approximately 1,000 square feet, was viewed as too small to draw interest from users with a primary research focus. At best, a space of this size could serve as a demonstration lab space for education purposes.





Precedent: Photos above of Hudson River Rowing Association in Poughkeepsie

PROGRAMS/PARTNERS/FINANCING

While program, partners, and financing strategies are addressed separately in the discussion below, they are inexorably linked. As **Figure 4** serves to illustrate, they are interrelated cogs which ultimately need to work together to ensure successful, sustainable operations. For example, the partnerships formed with HRDC "member" organizations will influence the nature of program offerings, while those partners and program will inform financing strategy and organizational structure. So as not to lose sight of these linkages, short- and long-term recommendations will be mindful of various permutations associated with other elements, and therefore often include "if-then" statements.

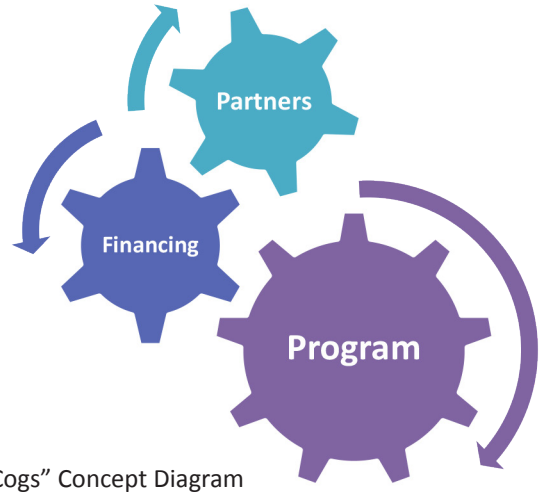


Figure 4: "Interrelated Cogs" Concept Diagram

Program: SWOT Assessment

The viability of program options depends in large part on specific locational attributes. A Strengths, Weaknesses, Opportunities and Threats (SWOT) Assessment helps "ground truth" desired program options based on site-specific conditions. The SWOT assessment worked to identify the potential viability of various program offerings by examining the locational attributes from a "marketing" perspective, considering potential visitor draw from: (1) the local area; (2) the Westchester County area; and (3) the broader Mid-Hudson Valley region. The assessment considered elements such as the physical conditions and attractiveness of the park; local way-finding signage; connections to pedestrian/ bicycle routes, hiking trails, transit and the local and regional road/highway networks in the area; and complimentary or competitive attractions within the local area and broader region.

The following discussion highlights key site strengths, weaknesses, opportunities, and threats, and describes how these attributes inform potential program offerings at HRDC.

Strengths

Incredible views of the Hudson River – Allows for establishing locations within and adjacent to the HRDC that can be used by local residents and visitors to congregate and appreciate views (e.g., programming for regular sunset watching, occasionally complimented by speakers).

Access to waterfront unencumbered by Metro-North rail lines – This creates program opportunities that include safe, immediate access to the shoreline (e.g., rowing club, kayaking) and for hands-on educational experiences including in-water (e.g., bringing groups on to the water).

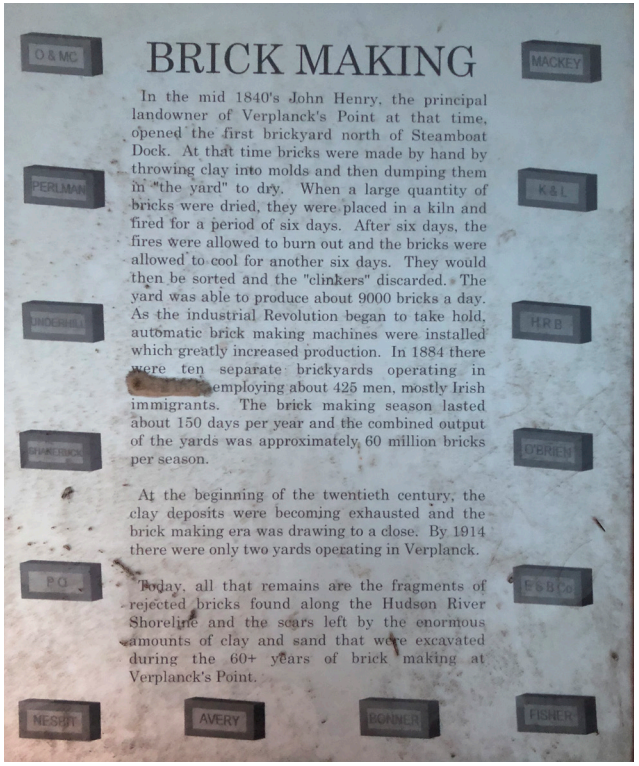
Rich history – Cortlandt Waterfront Park presents opportunities to provide educational programming that focuses on Verplanck's history as a center for commercial fishing, brickmaking, and ice making. In addition, the park is known for its Revolutionary War history, specifically the location of the strategic Kings Ferry Crossing between Stony Point and Verplanck's Point, which General George Washington's army used to cross the Hudson on its march to Yorktown, Virginia, in 1781. There is signage within the park that already speaks to this history and that draws visitors to the site.

Public boat launch and deep-water boat access – With a recently-constructed (2013) public boat launch accommodating boats up to 22 feet long, the site already is recognized as a point of river access/egress. In addition, given the depth of the water at this location, the park offers one of the few docking opportunities along the lower Hudson River for deep-water vessels. This provides opportunity to bring bigger ships to the site as part of educational programming, as well as potential visitation from river tour operators.

Current user base – People currently use the property for fishing, crewing, walking, swimming, and active and passive recreation.

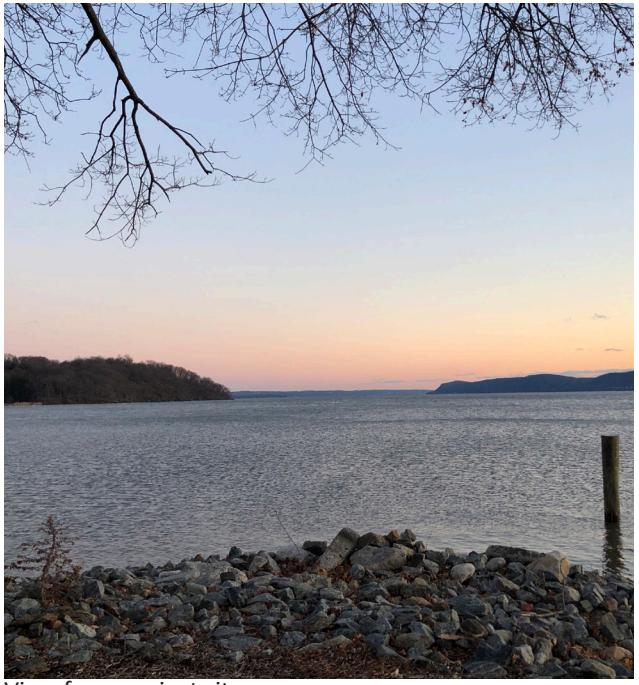
Close-knit community with local events – In addition to day-to-day activities, the site is recognized and utilized for a number of events including Eaglefest and the popular Town of Cortlandt Summer Concerts and Movies Series. These events would promote awareness of HRDC programming, with opportunities to co-sponsor future events.

Great schools – There are a number of outstanding local school districts that can serve as teaming partners in collaborating to develop program, and to provide a visitor population (i.e., students).



Interpretive sign near project site


Existing "Hangar" building used for CCRA storage



View from project site

Existing shoreline at project site

Weaknesses

Site is not sewered – While the site has ready access to water and electric utilities, it is not currently sewered. It is therefore limited in terms of the scale and type of uses and associated program that can be offered at this time. Large-attendance events need to be managed using portable toilets. While a strategy was developed as part of this project effort to address lack of sewer specific to the HRDC—and the envisioned scale of uses and program specific to the HRDC does not require sewer—the lack of sewer is still a limiting factor in terms of locating future proximate complimentary uses (e.g., stand-alone restaurant or hotel).

Portions of Cortlandt Waterfront Park are in the floodplain – As discussed elsewhere in this report, this was a major factor in formulating concept design for the HRDC.

Not close to Metro-North railroad stations – Cortlandt Waterfront Park is about an 11-minute drive to Cortlandt Station, and an approximate 8-minute drive to Peekskill Station. This is a limiting factor in terms of drawing regional visitors.

Difficult wayfinding from Route 9 - not a "pass by" location – This reduces the potential capture of pass-by visitation and marketing-by-sight from major thoroughfares. The site's one-way access from Riverview Avenue also presents a challenge in terms of wayfinding and ease of access.

Limited complimentary offerings in the immediate vicinity – The park's historic placards, views, and walking trails currently provide less than an hour's worth of activity, and Verplanck does not provide a critical mass of retail/food & beverage offerings to attract or retain visitors. Most visitors not living in the immediate area would be seeking a level of activity/programming as part of an HRDC visit to make the trip "worth their time" in terms of their investment traveling to the location.

Small local population – The population within walking distance or a short drive does not provide a visitor base large enough to sustain programming on a constant and regular basis. While their interest and involvement is critical, local residents are not a sufficiently large user base for most program options.

Opportunities

Linkages via water taxi – The park's location on the waterfront, with a working dock, creates opportunity for linkages to Peekskill and possibly other locations (e.g., Haverstraw, Charles Point) via water taxi. This would grow non-auto-dependent visitor base.

Redevelopment opportunities in Verplanck waterfront area – As part of an economic development initiative, the Town is evaluating potential redevelopment of underutilized properties in the Verplanck waterfront area. Some of the uses contemplated could be complimentary to HRDC programming and would move the waterfront toward a "critical mass" of offerings that draw visitors from a broader region.

Verplanck Nature Preserve and Clayhole Pond – These are within immediate proximity of the concept location for the HRDC and could be incorporated into educational programming.

Threats

Fiscal challenge presented by Indian Point's closure – The impending closure of Indian Point and the associated loss of Payment In Lieu of Taxes (PILOT) revenues reduces the attractiveness of property taxes as a financing option.

Peekskill development – Recent development along the waterfront in Peekskill immediately adjacency to the Peekskill Metro-North rail station, could be perceived as a threat in that it would compete with the HRDC for visitors. However creative cooperation and complimentary programming could make the proximity of the new Peekskill waterfront development and asset rather than a threat.

Overwhelming a sensitive site – Cortlandt Waterfront Park is within close proximity to single-family homes, and is a site appreciated in large part for its serenity. Introducing uses to the site that are high traffic generators, or that present other nuisances such as frequent noise, could erode the value of the site. In considering program options, it is important to identify uses with projected levels of intensity that would not create significant adverse environmental effects.

An interesting finding of the SWOT assessment is that one of the greatest site "strengths" is also one of the most challenging "weaknesses." Cortlandt Waterfront Park's location on the Hudson River, unencumbered by the Metro-North railroad tracks, is a tremendous asset because it allows for river views as well as a number of unique program opportunities (e.g., safe and easy transit between HRDC and the waterfront for boating or hands-on educational opportunities). However, it is also a weakness in terms of potential regional visitor draw relative to other locations, such as Ossining or Peekskill, which have immediate transit-oriented transportation options within walking distance of a destination.

Program: Case Study Analysis

The Consultant Team engaged in a case study analysis that explored facilities viewed as potentially comparable to the future HRDC. The purpose of this exploration was to gain a better understanding of the following:

- Facility size, program offerings and user group(s);
- Facility operations and staffing;
- Construction costs and sources of construction financing;
- Facility operational costs and financing operations;
- Operational and programming partnerships; and
- Lessons learned – i.e., what's worked or not worked from a programming, operating, and/or financing standpoint.

Table 1: Case Study Facilities

Facility Name	Location	Website
Adirondack Interpretive Center	Newcomb, NY	http://www.esf.edu/aic/
Adirondack Museum / Experience	Blue Hill, NY	https://www.theadkx.org/
The Wild Center	Tupper Lake, NY	https://www.wildcenter.org/
DIA Beacon	Beacon, NY	https://www.diaart.org
Foundry Dock	Cold Spring, NY	https://www.scenichudson.org/parks/foundrydockpark
Boscobel	Garrison, NY	https://www.boscobel.org/
Olana	Hudson, NY	http://www.olana.org/
Greenport Conservation Area	Greenport, NY	http://clctrust.org/discover/public-conservation-areas/greenport/
Norman Levy Park	Merrick, NY	https://www.toh.li/preserves-and-nature-areas/norman-j-levy-park
Hudson River Museum	Yonkers, NY	http://www.hrm.org/
Beczak Environmental Center	Yonkers, NY	https://www.centerfortheurbanriver.org/
Norrie Point Environmental Center	Staatsburg, NY	https://www.hrnerr.org/visit-norrie-point/
Beacon Institute's Center for Environmental Innovation and Education	Beacon, NY	https://www.bire.org
New Canaan Nature Center	New Canaan, CT	https://newcanaannature.org/
Sherwood Island Nature Center	Westport, CT	http://friendsofsherwoodisland.org/nature-center/
Rye Nature Center	Rye, NY	http://www.ryenaturecenter.org/
Sheldrake Environmental Center	Larchmont, NY	http://www.sheldrakecenter.org/
Teatown Reservation	Ossining, NY	https://www.teatown.org/
Greenburgh Nature Center	Scarsdale, NY	http://greenburghnaturecenter.org/
Albany Pine Bush Discovery Center	Albany, NY	http:// http://www.albanypinebush.org/discovery-center

From a programming perspective, the following were key takeaway points from the Consultant Team's case study analysis:

- Most facilities have a narrow focus, primarily relating to education on the natural environment and unique native habitats, as well as the protection and preservation of natural spaces, flora, fauna and biological processes;
- Many facilities provide opportunities for experiential learning based on engagement with nature;
- Many facilities offer public programs, events, speaker series, courses and other activities throughout the year to the public as well as school groups;
- Some facilities have artists in residence and workshops focusing on specific themes (e.g., fly-fishing workshops at the Adirondack Interpretive Center);
- Some facilities supplement primary funding sources by renting space for private events (e.g., weddings, private parties);
- Many facilities were formed through partnerships between groups and/or institutions based on local concerns and broader themes related to environmental conservation, sustainability and resilience. These include public and private educational intuitions such as universities, as well as government agencies, and even private entities with focuses on sustainability and environmental conservation.

Partners: Opportunities and Constraints

From both a technical and financial standpoint, the Town is not in a position to fully execute the types of program offerings anticipated for the HRDC – running the HRDC is not the Town's core competency. The facility therefore requires partner individuals and organizations who are subject matter experts, and who have experience hosting and financing program.

Given the contemplated size of the facility, combined with the breath of programming envisioned, not all partner organizations would be "tenant partners" with a regular space-lease presence in the facility. Rather, one or two anchor tenants may occupy office/administrative space within the building, from which they manage their organization's functions while supporting the day-to-day functioning of the HRDC. As currently envisioned, the Cortlandt Community Rowing Association would occupy and manage their activities within the lower level of the building in addition to the existing storage on the site at the hanger buildings. Other "non-tenant partners" would utilize flexible spaces within the main level of the building for events like conferences and speakers'

series but would not have a regular "tenant" presence. Other potential non-tenant partners, such as a kayak operator, may use the building for storage or have a small-footprint presence for administrative functions.

With this multi-partner model in mind, and with concept design schematics in hand, the Consultant Team initiated preliminary outreach to a short list of prospective anchor tenant partners—i.e., organizations with a vision/mission that is complimentary to the Town's goals for the site, and who may be interested in a tenant partnership. Our objective was to gauge potential interest in partnering (either as a tenant or non-tenant partner), and to understand the types of facilities, programming, and partnering relationships that might be attractive to the organizations. We conducted in-person or phone conversations with leadership representatives of the following organizations (listed alphabetically):

- Columbia University's Lamont-Doherty Earth Observatory
- Cornell Cooperative Extension
- Cortlandt Community Rowing Association
- National Maritime Historical Society
- Riverkeeper
- Scenic Hudson

Two of the six organizations—Cortlandt Community Rowing Association and the National Maritime Historical Society—indicated potential interest in locating operations at the future facility as a tenant partner. All organizations were enthusiastic about the HRDC in concept and expressed willingness to support the Town's efforts to advance beyond the planning stages. Further, all of the organizations indicated that they could envision using the facility's space to host events and/or programs. Collectively, the following are key takeaways from discussions:

- **For most, the site's location was imperfect.** Two organizations explained that the facility's location was not within their primary geography of interest, while another organization cited its distance from a Metro-North rail station as a reason for lack of interest in tenant partnering. The distance from a rail station was a concern in terms of both staff commuting and for visitation from clients, members, and public.
- **Tenant partners' (existing) staff would not be able to manage overall HRDC operations.** Several of those interviewed noted that existing staff would not have the time or expertise to manage overall operations. The organizations' focus was more singular relative to the programming vision for the HRDC, and they could not provide expertise necessary to oversee

operations. For example, one representative noted that as an advocacy organization they do not have the staffing/financials necessary to fulfill the environmental education role envisioned.

- **Organizations are wary of spreading themselves thin.** Three representatives cited concerns about having the staff and financing necessary to expand or relocate operations, with one of the three organizations citing recent capital investments and a reluctance to further dilute funds that are progressively hard to obtain. It's not uncommon for non-profit organizations to struggle year-to-year to maintain consistent sources of funding–one noted that a 2012 cut in local funding from Westchester County had enormous ramifications on their operations, as State and Federal funds were matching the County contribution.
- **There are many "non-tenant" partnering opportunities.** All representatives expressed interest in "non-tenant partnering," i.e., using the facility in some fashion to support their mission. For some, the immediate thought was utilizing the concept design's conference facilities. Others suggested they could offer free education services and/or technical support for program development. One organization noted that their interns would love to locate within the facility to support operations.
- **All had opinions on other organizations to contact.** During interviews, the Consultant Team asked whether there were other organizations who they felt may be interested in partnering or who may have insight on, or could lend support to, financing strategies. We identify these suggested entities as part of the appended "long list" of potential partners and resources.

Financing: Opportunities and Constraints

The Consultant Team worked to identify financing strategies that are achievable based on the physical, economic, and fiscal realities of the site, and that are consistent with the programming goals for the HRDC. The strategies identified and analyzed took into consideration the regulatory and utility constraints, site planning analysis, established physical parameters for the building, the complimentary uses proposed and the SWOT assessment to inform revenue-generating potential of program options. This analysis is also mindful of the economic and fiscal challenges created by the impending closure of Indian Point and ramp-down of PILOT revenues from Indian Point.

Similar to the concept of a "net zero" building from an energy perspective, The Consultant Team sought to identify strategies that could generate a net zero fiscal impact on the Town. This was an ambitious target but viewed as something we should strive toward in in light of the fiscal challenge presented by the impending closure of Indian Point. A countervailing influence, however, is the

Town's desire to play a major role in overseeing HRDC's management and programming. While the Town owns the property, which provides some degree of leverage over decision-making on the site, the costs associated with construction and successful operations are large, diminishing the Town's leverage without substantial contribution to the fundraising/financing of construction and ongoing operations.

The Consultant Team's first step was to explore the universe of potential financing mechanisms for construction and operations. **Table 2** identifies typical financing mechanisms for park programming and describes the advantages and disadvantages of each option.

Table 2: Financing Toolbox

Financing Source	Advantages	Disadvantages
Taxes	Preserves borrowing capacity; saves interest cost	Imposes additional fiscal burden on municipality/taxing jurisdiction; funds may not be sufficient; may not relate payment to benefits received
Special Assessments and Special Districts	Makes funds available immediately; matches payments and benefit	Requires legislative approval; may seriously impact assessed customers
User Charges - "Free vs Fee"	Reduces need for borrowing or reserves; cost is more effectively targeted to user base (as compared to taxes)	Impractical for large projects; may make rates erratic from year to year
Reserves	Eliminates need for borrowing; improves financial stability of system	Can be politically difficult; difficult to "protect" reserves for intended use; impractical for large projects
Negotiated Exactions or Impact Fees (hookups, systems development or capital fees)	Requires new customers to pay for impacts they place on system	Political problems (viewed as "anti-development"); ineffective where there is little or no growth; affects housing affordability
Grants	Source of "free" money	Reporting and administration may be burdensome; may specify funding objectives that are not in accordance with Town's priorities
Public-Private Ventures (including partnerships with other government agencies and nonprofits)	Total costs to local government are reduced; ongoing maintenance/security can be shared responsibility	Coordination can be complicated and time-consuming; local government does not fully control programming nor allocation of revenue streams; private actors may have less concerns related to local nuisances (e.g., noise, debris, overutilization)
Donations (from private individuals and/or corporations)	Reduces cost to local government	Requires board and/or fundraising effort; funding stream over time can be unreliable/inconsistent; funders may exert unwanted influence over programming
Use of Volunteers	Reduces costs; community-building	Level of support unreliable; untrained volunteers can send mixed messages (quality control issue)

Specific to the HRDC, there are several potentially viable financing mechanisms that could be used in combination to fund both construction and operational costs. These include the following:

-User fees for "special events" or private use of space – for example, renting indoor and outdoor space for small conferences/meetings or for private parties (e.g., wedding receptions). User fees associated with "partner" events—for example renting space for a lecture series within the HRDC facility—would likely only cover costs associated with the activities for which the fees are associated, and would not defray broader operating expenses (e.g., staff salary for an executive director). Based on conversation with potential partner organizations, one could expect minimal fees for space made available to non-tenant partners for renting spaces in the HRDC for events—typically hosting facilities provide space free of charge or for an amount intended to cover incremental cost for hosting (e.g., event set-up and janitorial cost). Similarly, revenues from potential on-site, non-tenant partners (e.g., kayak, food truck concessions) would be nominal and likely targeted to cover expenses specific to their operations.

Fees associated with renting space for private events could help to defray operating costs beyond those incurred for executing the event, but this strategy has negative externalities. Private events on public spaces (in this case, Cortlandt Waterfront Park) may not be well-received by local residents and other park visitors, and depending on the size of an event, vehicle traffic and noise also may create conflicts with local residents. There would also be insurance requirements associated with hosting private events that may make the combination of financial and social costs untenable.

Lease revenues from tenant partner(s) who occupy space in the building could defray broader operational expenses (e.g., staff salary for an executive director). Assuming below-market rent of $1.50 per square foot per month, renting 5,000 square feet of space could generate $90,000 in lease revenues annually. This could cover utilities and a portion of operation and maintenance costs, while still leaving available funds for HRDC staffing.

-Grants – Grant monies, such as those obtained from State Consolidated Funding Application (CFA) Grants, are a viable strategy for both construction and operational costs. We have appended to this report a listing of potentially applicable grant funding sources. For example, the Environmental Protection Fund Grant Program for Parks, Preservation and Heritage (EPF) offers up to $20 million in matching grants for the acquisition, planning, development, and improvement of parks, historic properties listed on the National or State Registers of Historic Places and heritage areas identified in approved plans for statutorily designated Heritage Areas. Funds are available

to municipalities or not-for-profits with an ownership interest. The maximum award is $500,000. As noted in the **Table 2**, while this can in some respects be considered "free money," there is a large time commitment associated with identifying and applying for grants.

-Public Private Partnerships (P3) – P3 arrangements can take many forms, including fee arrangements with program partners (e.g., kayak rental company), which could provide lease revenue and attract visitors to the site. Other options could include engagement with STEM companies interested in being more engaged with local projects (e.g., sustainable utility companies interested in providing educational opportunities for people to learn about sustainable energy production), or sponsors interested in supporting the center as part of their philanthropic giving.

-Donations from private individuals and corporations can support matching fund requirements from grants, or stand-alone construction and operating support.

-Use of volunteers can help defray operational expenses, but there would still be a staffing/time commitment from HRDC personnel to train and/or provide quality control.

Tax revenues (either to repay construction bonds or for staffing/operating costs) are not a prudent or politically viable option given the fiscal circumstances specific to Indian Point closure. As noted above, our objective was to identify strategies for construction and sustainable program operations that are revenue-neutral to the Town.

RECOMMENDATIONS

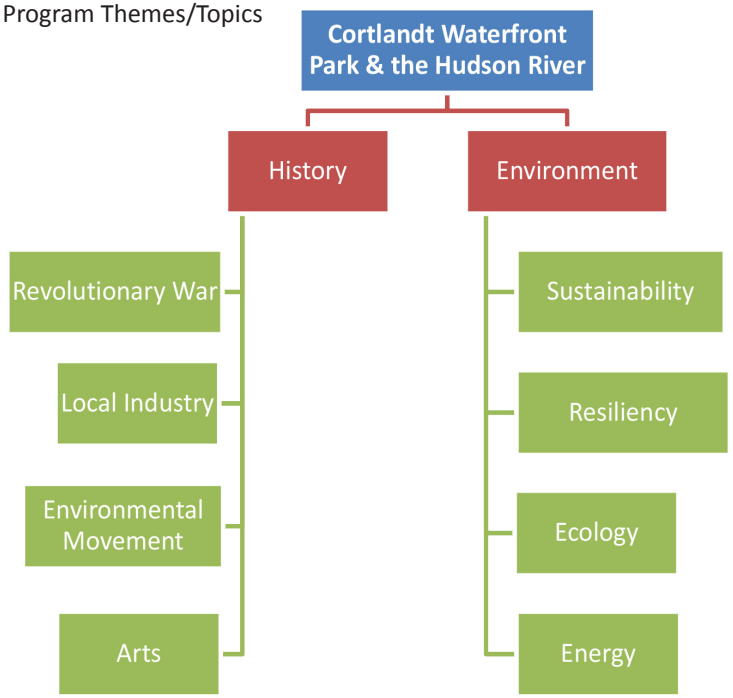
This section advances long-term recommendations aimed at fulfilling the Town's goals and objectives for HRDC's role at Cortlandt Waterfront Park, as well as more immediate "next step" action items.

Recommendations: Program

Over the course of the Consultant Team's work it became evident that the HRDC would serve as a vehicle to facilitate appreciation of the site itself—Cortlandt Waterfront Park and the Hudson River—and its role in our lives, past and present. The HRDC should communicate the uniqueness of place on the Hudson River, for which there is a rich history and abundance of program opportunities centered around two primary drivers—history and the environment. **Figure 5** below identifies potential program topic areas for the HRDC that would promote better understanding and appreciation of the location's history and its place in our environment.

The Consultant Team often grappled with the question, "Should one facility try to do so much?" For the following reasons, the answer, at least at this concept stage, is "yes."

Figure 5: Potential Program Themes/Topics



- Ultimately key HRDC partners, who have expertise and interest in promoting a subset of these elements, will work with the Town to shape the emphasis of the HRDC. Until partners are identified, the Town should remain open and receptive to a wide range of program opportunities.
- HRDC programming need not tackle all of these elements at once. With flexible space, and the need to keep content fresh and dynamic, rotating exhibits and "pop-up" content should be offered to compliment regular, more fixed program offerings and exhibits. As long as there is an identifiable unifying theme—in this case, the Hudson River—the facility will be understood and can be effectively marketed.
- Specific to sustainability and resiliency, the facility can "speak for itself," minimizing staffing requirements for programming those elements. With the incorporation of sustainable design practices, even to the point of a "net-zero" facility, the building will serve as its own demonstration platform. For example, signage providing information on sustainable site design strategies, building cut-outs enabling views of energy-efficient mechanical systems, and real-time displays of energy metering all can be employed to provide self-guided education to homeowners, planners, developers, architects, and other visitors.
- There are opportunities to engage in a variety of program elements with non-tenant partners. Organizations can bring a variety of programs to the site through conferences, lecture series, and educational programming for youth that utilize the site's outdoor spaces with minimal "inside" presence (e.g., for gathering/organizing activities hosted in the surrounding park).

The Consultant Team invested considerable time defining an appropriate size for the facility, as well as location within the park, interior space layout, and design. We concluded that a facility between approximately 10,000 and 18,000 square feet would be most appropriate for the site. The selected location takes advantage of the park's natural grade change, allowing for the space below flood elevation to be access riverside, minimizing height when viewed from landside (Riverview Avenue).

The Consultant Team recommends maintaining the interior layout flexibility contemplated within concept design, pending further discussion with prospective tenant partners. Partners will have specific desires for space, and the Town can work to modify and finalize design based on those partners' needs. However, it is important to be mindful that a partner will not necessarily be a tenant over the full lifetime of the facility, so any specific requirements for design should consider the long-term marketability of agreed-upon design. For example, discussions with the National Maritime Historical Society revealed their desire to include an approximately 5,000-square-foot climate-controlled library, were they to become a tenant partner. Such an allowance would

represent approximately one-half of the space above flood elevation, limiting program opportunities and compromising the marketability of space to future tenants who may not have the need for a library.

Given the Cortlandt Community Rowing Association's existing presence on the site, their expressed interest in partnering with the Town, and the fact that rowing meets program objectives for the facility, the concept design should retain allowance for rowing facilities (as floodable uses) in the space below flood elevation. In speaking with other prospective partners, the Town should promote the Rowing Association's interest in locating within the facility, as their presence would be an "attraction factor." That said, discussions with other prospective partners should allow for the accommodation of shared boat storage space within the facility, or possibly within the hangars if retrofitted to accommodate long boats.

The SWOT assessment described above provided a framework to develop potential uses, and assess their feasibility, but it also shapes strategy moving forward. By leveraging the site's strengths while also working to mitigate the site's weaknesses and threats, one can expand the universe of feasible program. This flexibility is important at this stage of the planning process, given that partners and specific financing strategy have not been finalized. Below are several suggestions for addressing site weaknesses and threats in order to make the site more appealing to HRDC potential partners and visitors, thereby growing program options.

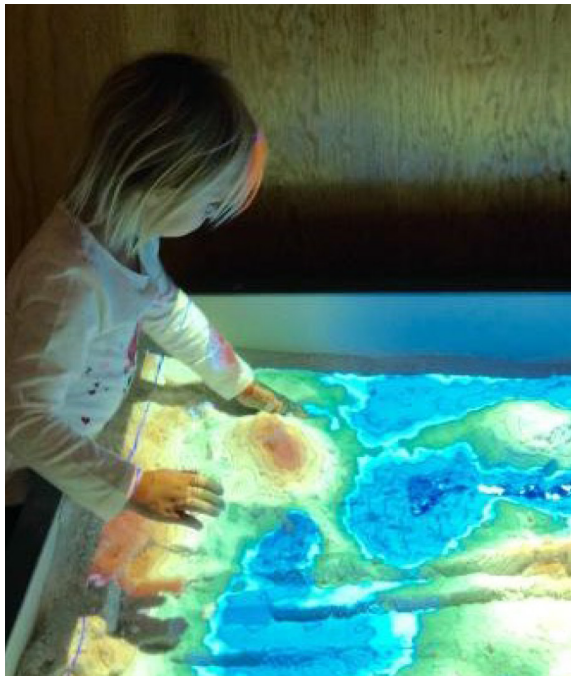
Develop a short-term and long-term strategy for site infrastructure. There are on-site systems such as a subsurface treatments system (i.e. septic) that AKRF's utilities analysis found to be a feasible option for the HRDC building. Longer term, the Town should continue to explore broader strategies for managing higher volumes of sanitary sewage within the waterfront area.

Incorporate flexible "floodable" space for rowing facilities and boat storage. The HRDC can incorporate these and other resilient strategies into educational programming. Indian Point also could be an interesting educational component of the HRDC, combining elements of site history and the environment.

On-site staff should serve as Cortlandt Waterfront Park stewards. Lease agreements with tenants should include responsibility for day-to-day site cleanup and advocate a "cleaner than you found it" mentality.

Leverage immediate access to the water dock/deep-water boat access. The Town should explore water taxi options to/from Peekskill and other locations, coordinate with private boat tour operators to raise awareness of the facility and discuss with Empire State Development opportunities to promote greater awareness and wayfinding with respect to riverfront destinations. A "landside" strategy should work to ensure that program stays relevant and exciting, in order to generate repeat visitation from locals and draw from a broader region as a unique destination.

Emphasize need for dynamic, cutting-edge programming. Explore partners and programs that are on the cutting edge of technology, and more specifically, technologies as applied to museum settings and education, both of which are rapidly incorporating alternative reality/virtual reality (AR/VR) into their programming. Many potential institutional partners have alternative AR/VR programs that could use the HRDC as a "living lab" to test applications to history and environmental education, and/or provide a media lab with scientists in residence who could interact with visitors.



Examples of potential "dynamic, cutting edge" exhibits.

Recommendations: Partners

The Consultant Team recommends two potential organizational structures for partnering: 1) an assemblage of partner organizations under the umbrella of a not-for-profit entity; and 2) full management of the HRDC by an existing institution.

1. Assemblage of partner organizations under the umbrella of a not-for-profit entity

This approach would require securing a collection of partners with the technical knowledge and financial resources necessary to help manage activity long-term, and whose missions/visions closely align with the Town's goals for the site. This combination of attributes—strong experience, strong finances and aligned vision—are most important for tenant partners. Without it, there will be a larger staffing and financing burden placed on the Town. However, all of these elements need not be found within all partner organizations. Smaller groups that do not have the wherewithal to manage a larger organization shouldn't be discounted, as their individual contributions to the whole are important. In addition, there is value in creating an environment for collaboration between organizations who may otherwise not interact; it creates an "incubator" environment where new ideas are born.

No one existing partner organization could provide for and manage all programming activities envisioned for the HRDC. The varied programming activities centered on both the environment and history present a mix appropriately unique to the site. The Town's goals are best achieved with a collection of partner organizations contributing their expertise, and in some cases their staff, to the site's mission, which is a mission different from any individual partner.

With this in mind, the Consultant Team's recommended organizational structure for the HRDC is an assemblage of partner organizations contributing to a not-for-profit entity formed specific to the HRDC. This allows for individual branding and fundraising separate from partner entities and recognizes that leadership would assume a role that differs from advancing the mission of any one partner. **Figure 6** on the next page illustrates conceptual composition of an oversight board for the HRDC.

We envision board members' roles and responsibilities as follows:

- **Executive Director –** Manages finances and lease agreements; ensures that partner programming (tenant and non-tenant) is consistent with HRDC mission; oversees scheduling and promotion; recruits new partnerships; manages timing and context of regular and "pop up" fixed exhibits; and works to ensure long-term interest and financial sustainability.
- **Town Board Member –** Based on Work Session discussion, we understand that the Town Board intends to play a major role in overseeing the management of the HRDC, which will be located on Town property, but does not anticipate a role in the daily operations and programming of the facility. The representative Town Board member would work with Town staff to develop parameters for and review partner lease agreements; facilitate communication between the HRDC and larger Town Board; and would work to ensure that the programming is consistent with the Town's broader goals for Cortlandt Waterfront Park.

Figure 6: HRDC Conceptual Composition of an Oversight Board for the HRDC.

- ***Cortlandt Parks & Planning –*** Representatives of Parks and Planning would ensure appropriate operations and maintenance of the facilities; provide event support; manage concessions leases/licensing; provide technical support and strategies for grant writing and fundraising; bring to the HRDC board community concerns; and work with the board to address any community concerns.
- **Local School Districts –** School and student involvement—not just as student visitors but as contributors—is critical to success. Representatives of school boards or other selected school staff would work to integrate HRDC programming into school curricula; schedule classroom visits; and advocate for involving students and their ideas in the evolution of program offerings.
- **Tenant Partners –** Representatives of tenant partners would develop and oversee program; contribute to fundraising efforts; coordinate with partners and HRDC leadership on content of exhibit materials; promote HRDC through their activities; and provide lease revenue for tenanted space.
- **Non-Tenant Partners –** (e.g., concessionaires, kayak rental, regular users of facilities) Active non-tenant partner representatives would coordinate with HRDC leadership on event scheduling; ensure seamless involvement and coordination among partners; contribute to regular and "pop up" exhibit content; and manage lease arrangements and fee revenues to the HRDC.

2. Full management of the HRDC by an existing institution.

The second option for structuring the organization is full management of operations and associated financing responsibilities by an existing institution that would value the waterfront location for research and/or education purposes. This is a model that has proven itself feasible at a number of facilities examined as part of our case study research (e.g., Center for the Urban River at Beczack, managed by Sarah Lawrence College, or the Beacon Institute for Rivers and Estuaries, managed by Clarkson University). This organizational structure does not preclude the managing organization from involving other partners to supplement program offerings.

This approach would be more limiting in terms of the Town's ability to shape program but should still be considered depending on the extent of alignment between the Town's goals and prospective tenant partners. As discussed below, the financing of the HRDC will be challenging under any circumstances; by ceding control of facility operations, the Town lessens potential financial burden associated with construction and/or operations.

If the Town were successful in securing an existing institution interested in full management, we

recommend advancing the "HRDC Board" participants identified under option 1, above, as an advisory board. While these various stakeholders may not have a "voting interest" in an advisory capacity, the managing institution would still find value in their participation in HRDC operational decision-making.

Recommendations: Financing

The Town's position of influence over the HRDC's program—and the HRDC's likelihood for success—will be highly dependent upon the Town's resource commitments, short- and long-term. Even as the site's property owner, given the scale of costs associated with construction and operations of the HRDC as contemplated, those contributing most to its realization and sustained operations will have the greatest influence over program. The Town's desire to ensure active and inclusive programming demands their participation long-term.

Form not-for-profit entity prior to HRDC construction financing. Many grants that could support construction are from foundations that give to 501(3)c only. This also will facilitate charitable (tax-deductible) contributions from donors. The Town could then work to generate matching fund requirements through grants.

Leverage "net zero" concept. The sustainable and resilient design concept elements of the building open up sources of funding from government entities such as New York State Energy Research & Development Authority (NYSERDA). Academic institutions may also have interest in contributing technical skills and possibly construction funding to such an endeavor—it could be practicum/hands-on opportunity for a school program. Architects and local contractors alsy may be interested in providing labor/technical expertise if they benefit by learning green design/building techniques and/or marketing their involvement.

Seek out/prioritize partners who align with Town goals. Alignment with partners reduces the operational financial burden on the Town in terms of staffing and programming, because partners are meeting those needs. Lease terms for partners could account for the level of staff and expertise they bring to table that may achieve broader HRDC goals.

Seek out revenue-generating cost offsets. There are for-profit partners who could bring program that advances the Town's goals while providing revenues that promote long-term viability. Examples include concessionaires or kayak tour/rental operators. In addition to providing revenue, staff associated with these uses are a regular presence at the park, thereby serving as informal park stewards (answer questions about the park, take responsibility for park cleanup and security).

Incorporate ongoing funding research into partnering effort. The best financing strategy, including finding an appropriate balance of funding tools, ultimately depends on the HRDC's partners and program. For example, if a major academic institution expresses interest, and their vision for the site is aligned with that of the Town, there may be opportunity for that organization to assume control over operational financing and programming. In addition, partners will have independent sources and strategies for funding.

Anticipate and plan for sustained resource commitment. As well-aligned as partners may be, given the Town's desired involvement there will always be a baseline cost for the Town associated with the HRDC's operations, including contributing to maintenance, oversight and lease management. Construction financing also will be a large effort for the Town. And while strategies exist to operate the facility without generating new fiscal line items, the Town's desired role, and the Town's desire to see a viable, dynamic, inclusive facility at the site, will require continued person-hour investments over its lifetime, which indirectly impact the Town's fiscal position.

Existing shoreline at project site

NEXT STEPS

Program

While the above recommendations are longer-term actions that the Town should consider as planning for the HRDC advances, there are immediate steps that can be taken to meet the goals of the Verplanck Waterfront Master Plan, and that align with the vision for the HRDC. The following recommended "next steps" would add value to the site for residents and visitors and, at the same time, make the site more marketable to prospective HRDC tenants.

Retrofit airplane hangars for Cortlandt Community Rowing Association use. The Town should work to secure design and construction funding, through grant funding and/or a cost-sharing agreement with the Rowing Association, to rehabilitate and retrofit the park's two airplane hangars, for use as boat storage for the Cortlandt Community Rowing Association. Longer (quadruple scull) rowing boats would not to be an ideal fit for the concept HRDC building's storage space but could be accommodated within the hangars. A preliminary cost estimate for rehabilitation and fit-out is $800,000.

Construct a food truck "incubator" space. Permit and construct a food truck-sized building, without wheels, for more regular food/beverage offerings. The space could be leased to operators on a short-term basis (e.g., six months), with first opportunity provided to local food vendors and local entrepreneurs interested in expanding business or trying out the food truck concept. Short-term leases could be extended for successful vendors, with allowances for "pop up" seasonal or special-event offerings. Lease rates could be sliding scale based on operator (i.e., discounts for local vendors) and/or for locally-procured food supplies. Preliminary cost for estimate for construction of the facility is $60,000.

Consider bringing a kayak operator to the site. The site is well-suited for offering kayak tours, rentals and lessons. This would not require any new infrastructure and would advance the primary goals of the HRDC: strengthen connections between the community and the Hudson River; activate the public realm; and provide amenities for the local population and attract visitors from throughout the region. Further, guided tours could focus on the site's Revolutionary War history and/or river ecology. Combined with the enhanced rowing program, the site would gain recognition as a destination for in-water recreation.

Initiate site design/landscaping improvements. There are a number of site design/landscape measures—such as construction of an amphitheater, or a demonstration garden—that would have stand-alone utility, and that would serve to compliment the HRDC building once constructed.

Partners

Develop and send to a broad audience of organizations a Request for Expressions of Interest (RFEI). The RFEI would solicit information on organizations' potential interest and request a letter of support from interested organizations for possible inclusion in funding applications. Specifically, suggested content is as follows:

- One page "cover letter" specifying the reason for the request and providing background statement on the mission/vision of the HRDC, supplemented with site and concept design visuals from this report.
- Description of the various means by which an organization can be involved as a partner.
- Request to provide a brief letter of support indicating potential interest in partnering with the Town. The request should emphasize the wide-ranging nature of partnering opportunities, and that a letter would not be viewed as a binding partnership commitment; rather an expression of interest in moving forward with the Town to provide technical support for their initiative, and/or discuss potential partnership opportunities.
- Request to fill out a brief electronic (online) survey – this request should be made to all recipients irrespective of their interest in partnering. Recommended survey content would include:
  - Yes/No questions with option to elaborate through written comments, such that it can take a respondent 2 minutes or 2 hours depending on their level of interest and willingness to elaborate.
  - For those not interested in partnering, targeted set of questions that get at the factors leading to this decision, including whether they may be interested under different circumstances

and whether they know of other organizations who may be a good fit for the HRDC.
- For those expressing interest in partnering, targeted questions that get at the nature/ level of their partnership interest. For example:
  - Would they be interested in tenanting the facility?
  - What types of program offerings would they like to bring to the site?
  - What type of equipment/space requirements would they have?
  - Are there other organizations they would be interested in collaboration?

- Depending on Town staff's time and resources for this effort, RFEI's could be individually-tailored, and certain respondents could be engaged for follow-up one-on-one or group meetings.

The above-described outreach effort would help not just serve to identify potential partners; it would market the Town's initiative, broaden knowledge of resources, and letters of support received from organizations could be appended to HRDC-related grant applications and other fundraising initiatives.

Financing

For reasons described above, seeking building construction funds is not a prudent "next step." However, the Town should work to secure funding through grants for recommended site improvements that would complement and support the Master Plan Vision of a future building. Such public space improvements will can generate substantial stand-alone value. Specific examples include the following:

- **Retrofit/rehabilitate hangars for Rowing Association –** This would provide better facilities for a potential future HRDC partner, enhance existing river-dependent activity at the site, and would make the site more marketable to other potential partners.
- **Food trucks –** A food truck "incubator" space (described above) would generate more regular activity at the site, provide a desired neighborhood amenity, bring people to the waterfront, and would make the site more marketable to potential partners.
- **Amphitheater design and construction –** An outdoor amphitheater would provide a space that compliments existing events and would support event programming at a future HRDC.

PRELIMINARY COST ESTIMATE

It should be noted that the estimate included in this report is conceptual and the actual project construction costs will be contingent on numerous decisions to be made during subsequent planning and design phases. The preliminary cost estimate included here in this report is intended to be used as a tool, to inform and to assist the upcoming effort toward the realization of the HRDC at the Cortlandt Waterfront Park.

Table 3 (below) presents a rough cost estimate for a proposed 15,000-square-foot building on the project site. It is based on a conservative unit price of $450 per square foot. Premiums associated with site specific complexities such as a pile foundation, flood sensors for the elevator, flood control measures are factored in at an additional $50 per square foot. Lump sum amounts have been allocated for site development specifically related to the building, interior furnishings, construction of the terrace and installation of a solar photo voltaic system.

Table 4 (on the opposite page) identifies the rough development costs for the overall project, both the building and site work, as illustrated this report (see section II: Master Plan Vision). The building construction estimate from Table 3 is shown as a single line item in recognition of the potential for development of the site plan, or individual elements of the site plan, separate from the building design and construction.

Table 3: Preliminary Building Construction Cost Estimate

Item	Unit	Price	Quantity		Amount
General Construction	SF	$ 450.00	15,000		$ 6,750,000.00
Premium for Pile Foundation	SF	$ 50.00	6,500		$ 325,000.00
Site Development Costs (Includes: Demolition, Erosion Control, Earthwork/Excavation, Stormwater Drainage System, Water Distribution System, Sanitary Sewer System, Utilities, Miscellaneous Items)	LS				$ 800,000.00
Terrace Construction	SF	$ 60.00	3,000		$ 180,000.00
Solar PhotoVoltaic System	LS				$ 100,000.00
Interior Furnishings	LS				$ 500,000.00
			Subtotal		**$ 8,655,000.00**

Table 4: Preliminary *Comprehensive* Project Construction Cost Estimate

Description	Unit	Price	Quantity	Amount	
Vehicular circulation					
Asphalt, pavers, painted lines, curbs	SF	$ 6.50	35,000	$ 227,500.00	$ 227,500.00
Pedestrian circulation (paths, trails, plaza paving)					
Mulch Path	SF	$ 3.50	3,000	$ 10,500.00	
Asphalt Path	SF	$ 5.00	8,000	$ 40,000.00	
Unit Pavers	SF	$ 15.00	10,000	$ 150,000.00	
Stone Dust/ gravel Path	SF	$ 2.00	1,500	$ 3,000.00	
Ramp	SF	$ 50.00	300	$ 15,000.00	$ 218,500.00
Site ammenities					
Pedestrian Site Lighting	EA	$ 10,000.00	15	$ 150,000.00	
Site Furnishings (Benches, Trash Receptables, etc.)	LS	$ 75,000.00	1	$ 75,000.00	$ 225,000.00
Site Vegetation					
Wildflower Meadow	SF	$ 2.00	42,500	$ 85,000.00	
Grass Meadow	SF	$ 1.50	30,000	$ 45,000.00	
Ecological Shoreline	SF	$ 3.50	25,000	$ 87,500.00	
Misc Planting (lawn, shrubs, trees, etc.)	AC	$ 50,000.00	5	$ 250,000.00	
Topsoil	LS	$ 75,000.00	1	$ 75,000.00	$ 542,500.00
Sustainability and Stewardship Demonstration Elements					
Bioswale	SF	$ 7.50	5,500	$ 41,250.00	
Demonstration Garden	SF	$ 12.50	2,500	$ 31,250.00	
Windmill	Ea	$ 30,000.00	3	$ 90,000.00	$ 162,500.00
Structured Site Features					
Amphitheater	LS	$ 150,000.00	1	$ 150,000.00	
Pavilion	EA	$ 35,000.00	1	$ 35,000.00	
Lookout Point	EA	$ 25,000.00	2	$ 50,000.00	$ 235,000.00
Rehabilitation of Airplane Hangar Buidings for CCRA Storage	LS	$ 500,000.00	1	$ 500,000.00	$ 500,000.00
15000 SF HRDC Building	LS	$ 8,655,000.00	1	$ 8,655,000.00	$ 8,655,000.00

Subtotal	**$ 10,766,000.00**
10% Design Contingency	$ 1,076,600.00
10% Construction Contingency	$ 1,184,260.00
Total	**$ 13,026,860.00**