Recommendations for Immediate Use of the Hackensack Water Works on Van Buskirk Island

12/2012

Van Buskirk Island County Park
New Milford Plant of the Hackensack Water Company County Historic Site
New Milford Avenue, Elm Street, and Madison Avenue

Boroughs of Oradell and New Milford
County of Bergen, New Jersey

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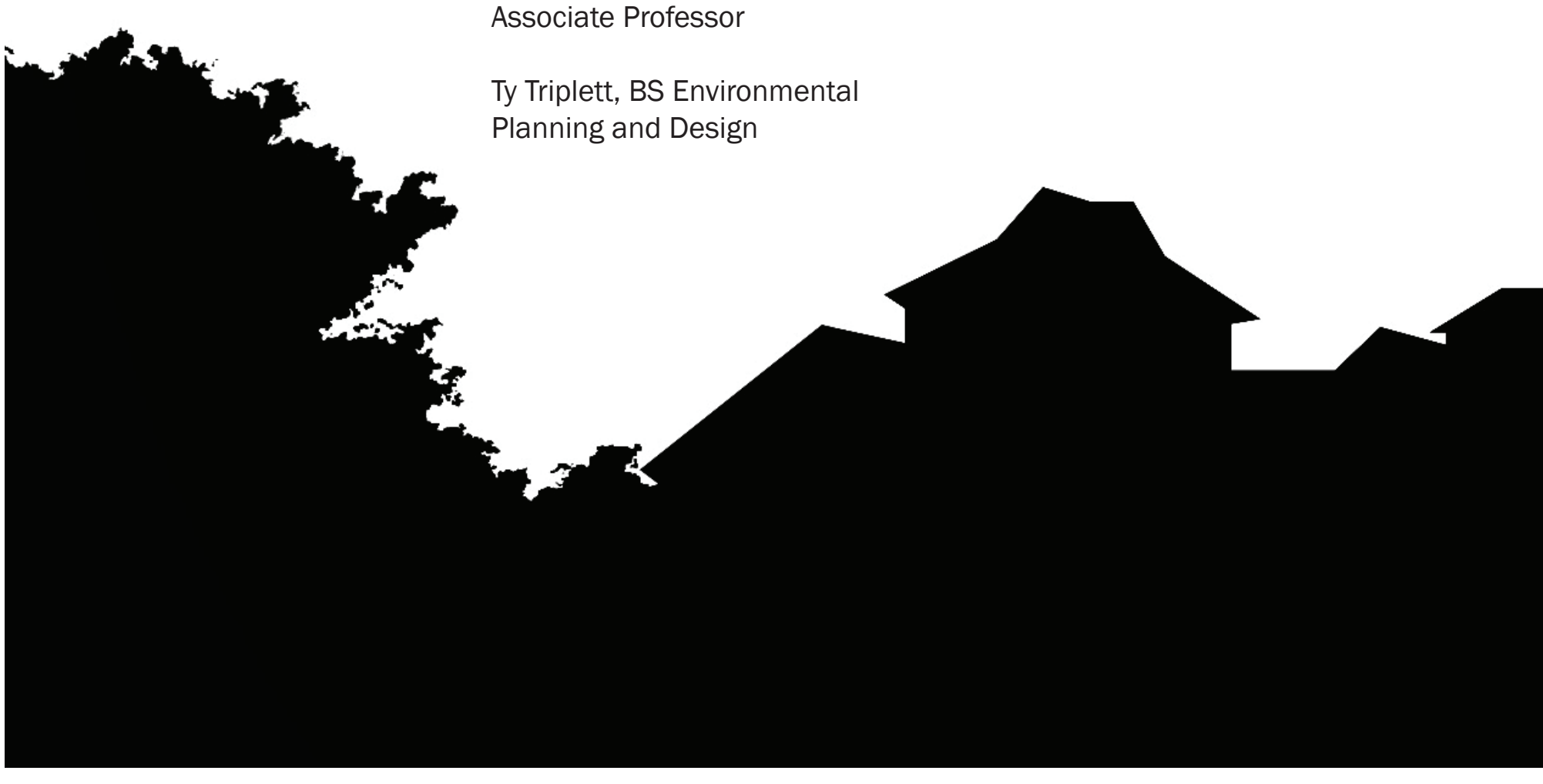


Executive Summary

The following pages contain the suggestions to aide in public access and understanding of the Water Works on Van Buskirk Island. Progress in building stabilization efforts will open the opportunity to provide safe access to larger portion of the site. Very limited investments in adjusting fence lines, reuse of exisiting surfaces for pathways, and a sytem of interprative panels will provide a highly valuable educational experience for Bergen County residents and other visitors.

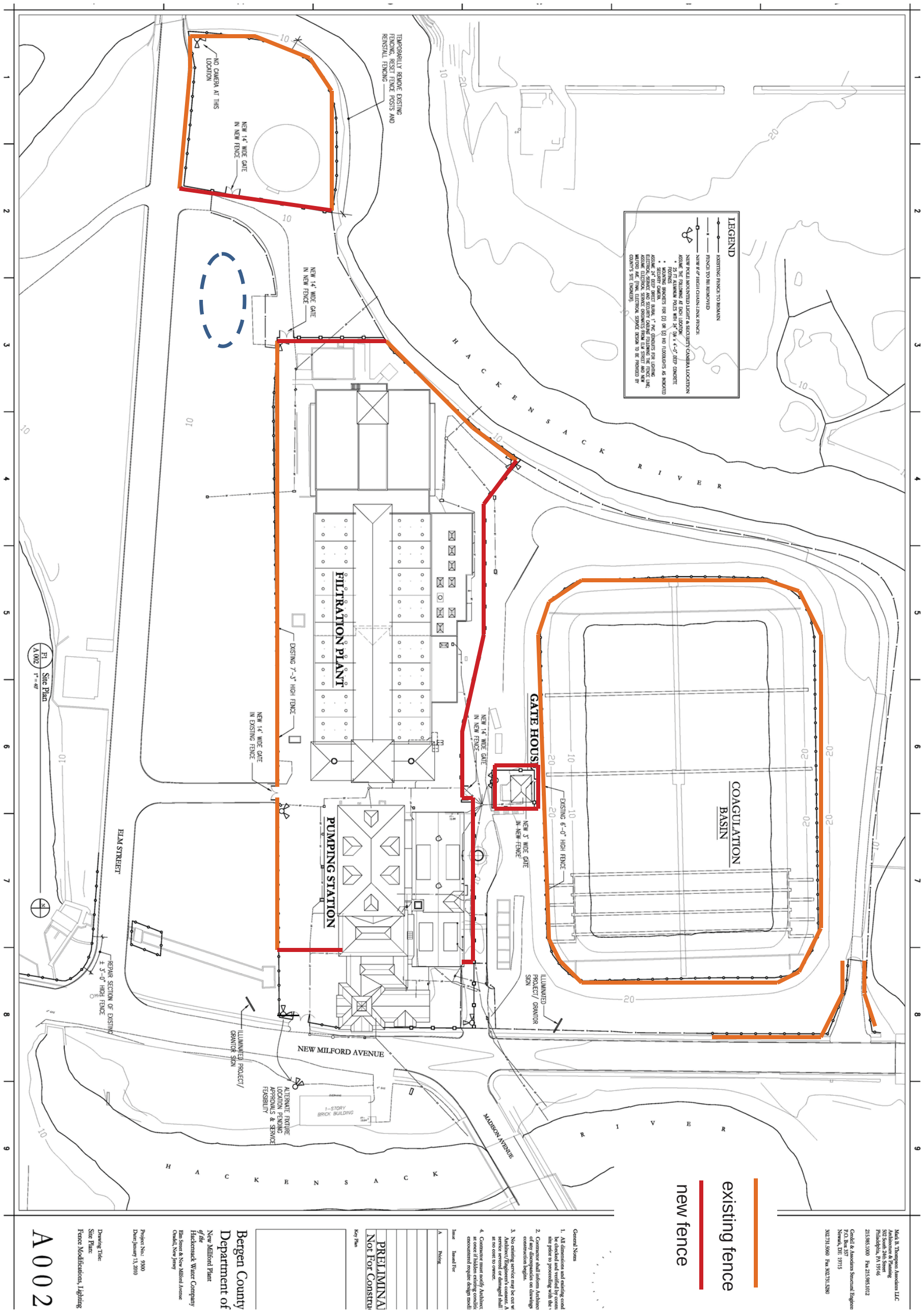
The work done on securing and stabilizing the buildings has left a larger portion of the site available for safe public use. The fencing diagram previously submitted in December 2011 has been revised to reflect a reduction in the areas of restricted access. In addition, fencing was moved to facilitate circulation and reduced in areas to maintain safety, while allowing for maximum open space.

A successful future for Van Buskirk Island is closely connected to community use. We believe it is imperative to begin fostering that connection to the site and its history at this stage. To encourage exploration of the site a simple path system is suggested to guide visitors through the site and to key elements contained within the landscape. At these key elements, interpretive signage has been developed to allow for a greater understanding of the site.

A dog run is proposed as an initial use for a portion of lawn along Elm St. The benefit of being a year-round attraction and that users often make several visits a week make this a simple and cost effective solution to begin conveying that Van Buskirk Island is accessible. Additionally, to address the needs that park users have, a collection of benches, tables, waste bins, and bike racks is suggested.

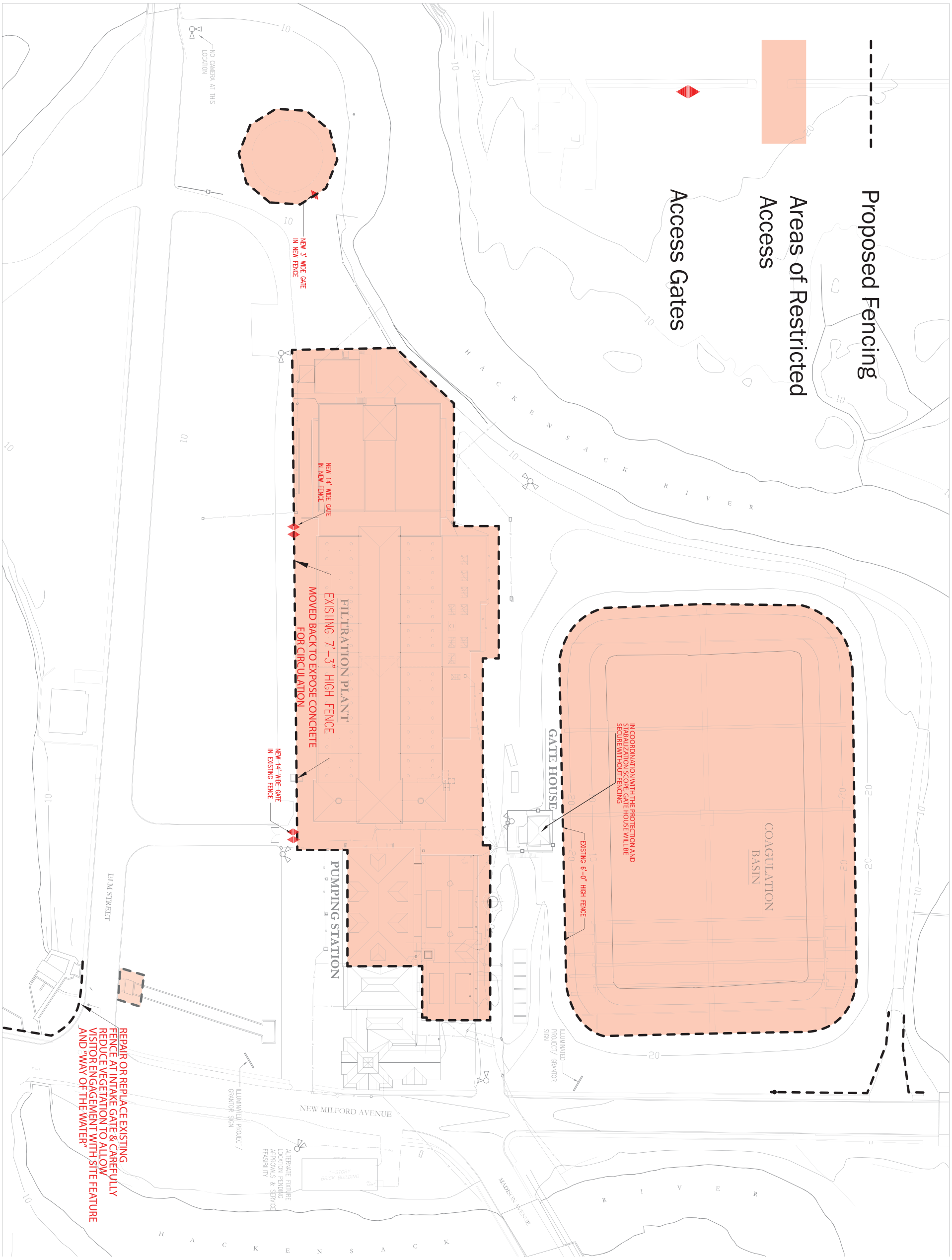
Fencing Diagram - Presented 12/2011

These two diagrams show the developments in the layout for fencing. Building stabilization efforts allow a larger portion of the area surround the Pumping House and Gate House to be accessible. In other areas fencing was reduced to open access or slightly moved to allow for public accessibility to hardscape.



Revised Fencing Diagram - 12/2012

Total new fencing for restricted zones is approximately 2877 linear feet
(310’ @ Waste Water Clarifier, 133’ @ Gate House, 1174’ @ Filtration Building, 1260’ @ Coagulation Basin, 473’ of existing fence is repurposed along west side of Filtration Building)
Requires two 3’ gates & 14’ gates



Signage

With the potential for allowing access to the property with limited access to the buildings, the project is confronted with need for way finding or interpretive panels. Education about the site and its features are crutial at this phase, to ensure public support and foster a future use that is well connected to the needs of the community.

At this time we recognize the need for 13 panels that belong to one of three categories; Ecology, History, and “The Way of the Water”. A colored title bar allows for easy identification.

The Way of the Water

The Way of the Water walks visitors on the path of water purification through the Water Works. The set of panels allows visitors to understand the function and history of the buildings and landscape objects. The Way of the Water has 6 panels.

1. Waste Gates and Intake Screens
2. Intake Canal
3. Pumping and Boiler House
4. Gate House & Coagulation Basin
5. Filtration Building
6. Pumping and Boiler House

History

At this time, three items of historical value were selected as warranting an interpretive panel. The stories of these items help to convey the sequence of events or the historic signifigance of actions or items that shaped the Water Works. There are 3 historic panels.

1. J & H Van Buskirk Mill
2. Former Workers Housing
3. Old No. 7

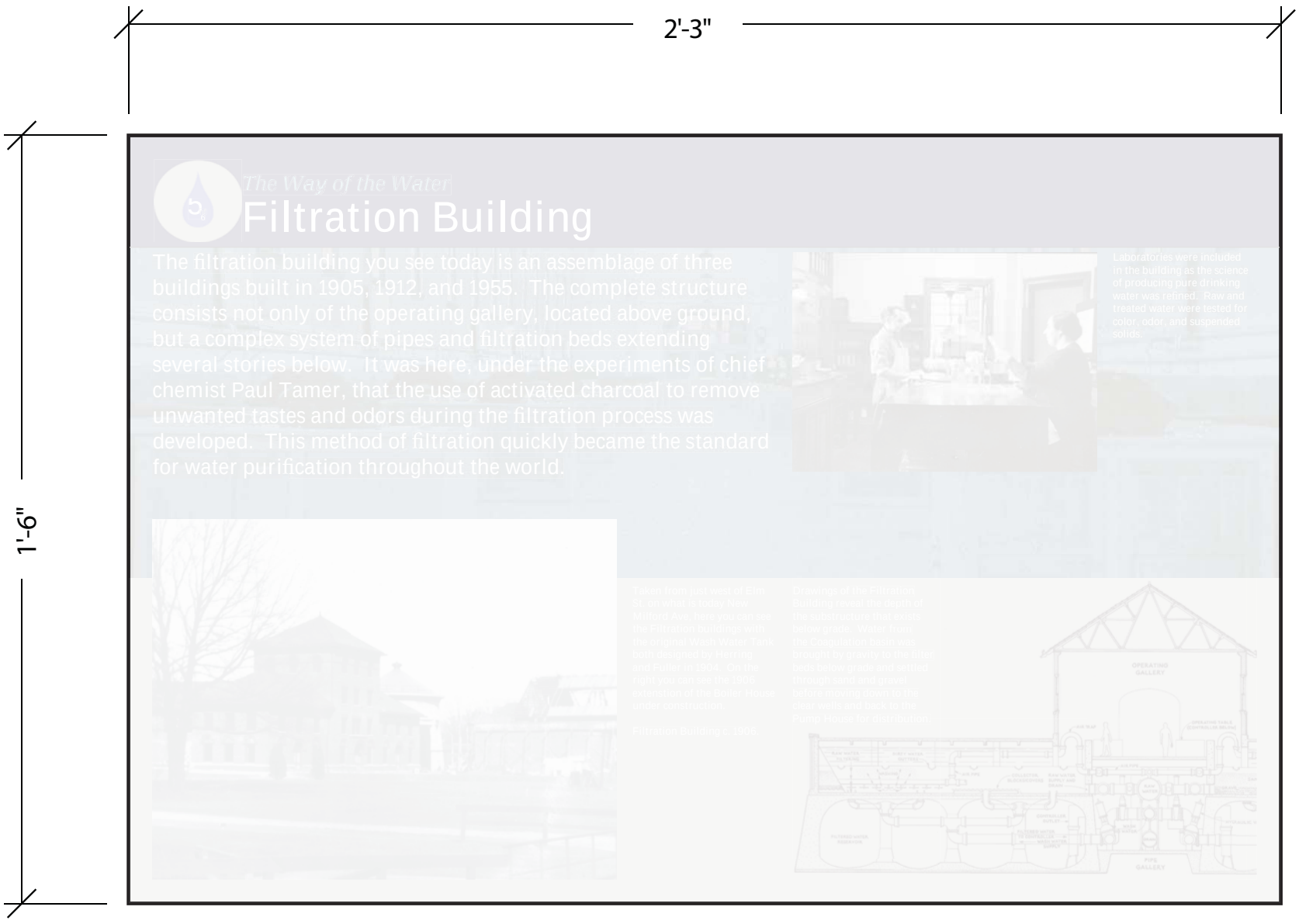
Ecology

The unique ecology of Van Buskirk Island and the surrounding region may not be immediately apparent to some visitors. The research from the ecological and hydrologic inventories has been summarized for visitors to experience and understand the ecological process of Van Buskirk Island. There are 4 ecological panels.

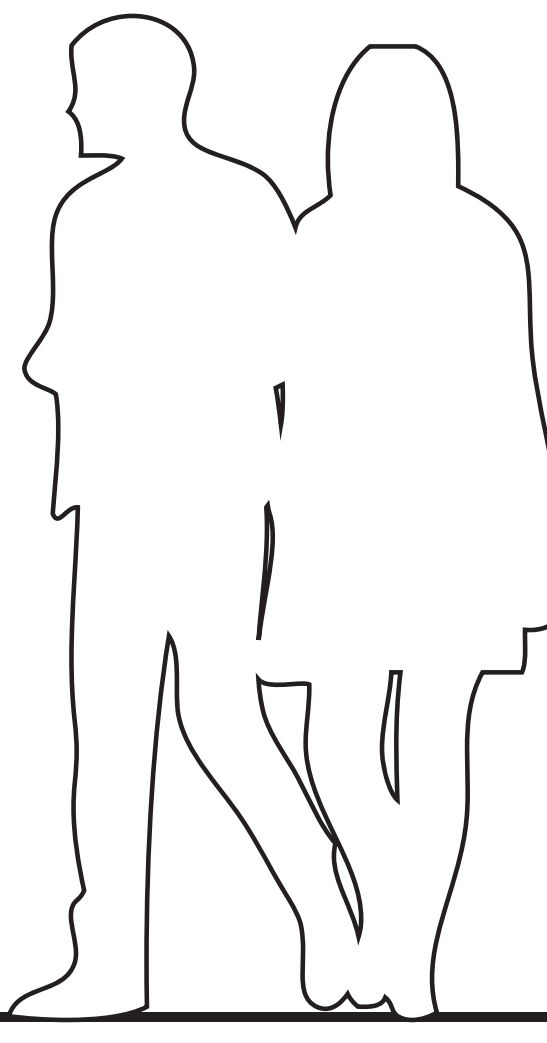
1. Ecology & Industry
2. Local Flora
3. Local Fauna
4. Floodplain

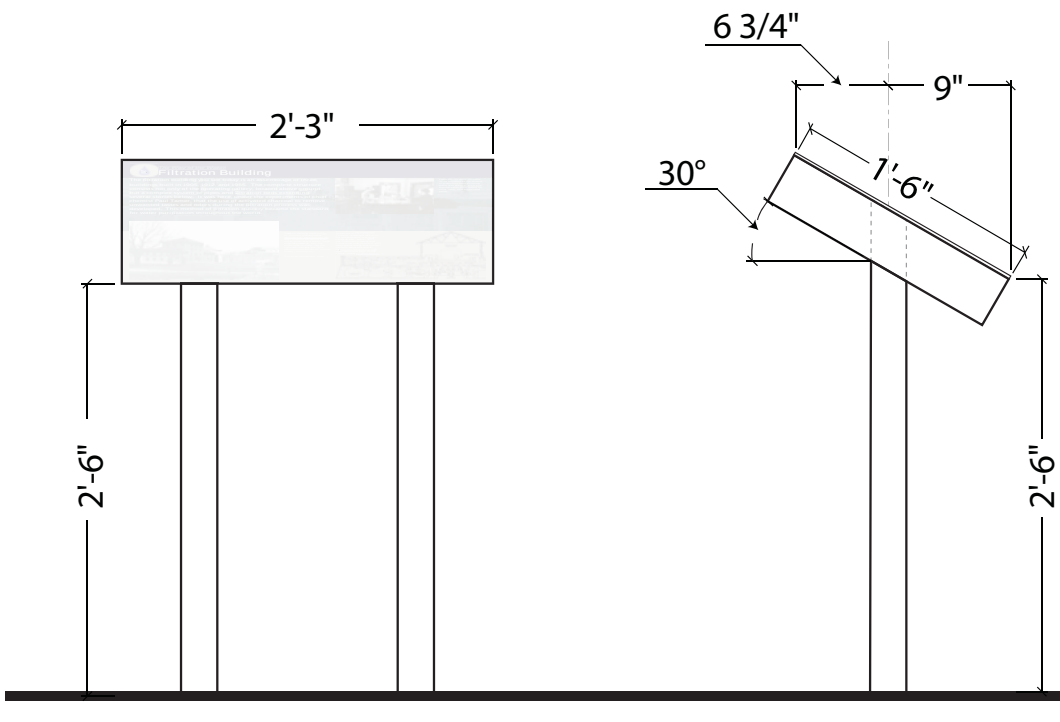
The information contained in the panels is based on research documented in the Cultural Landscape Report, submitted to Bergen County 2/2012.

Signage Schematic Drawings



Signage Dimensions
1" = .5’





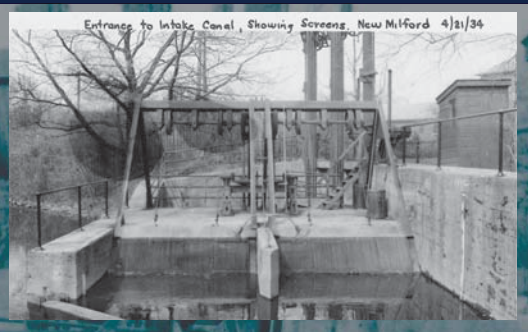
Signage Elevation
1" = 1'-0"

Signage Profile Elevation
1”= 1'-0"

The Way of the Water

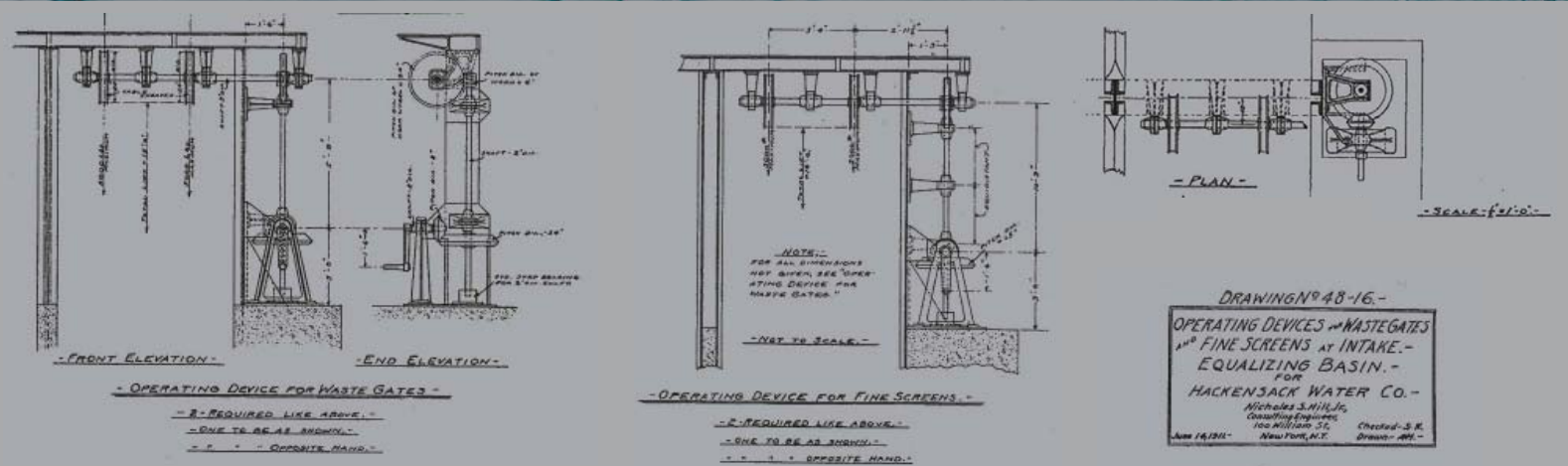
Waste Gates and Intake Screens

Installed in 1911 and designed by New York engineer Nicholas Hill, the Waste Gates and Intake Screen regulated the flow of water and filtered the largest of debris from the Hackensack River. The portion of the river contained above the waste gates was a manmade feature called the intake basin. This was the first step in transforming raw water from the Hackensack River to clean, potable water for the growing region.



The fine screens at the bottom of the picture filtered debris before water made its way through the Intake Canal to the Pump House. The first and most rudimentary step in the Way of the Water was crucial in filtering the raw resource of water from the Hackensack River, by preventing large debris from making its way into the purification process and threatening the operation of the large engines that powered the Water Works.

Nicholas Hill designed the Waste Gates and Intake Screens in 1911 and later went on to become president of the water company in 1936. His drawings, shown at right, illustrate a system relying on a series of shafts, cranks, and worm wheels to manually manipulate the gates and screens.

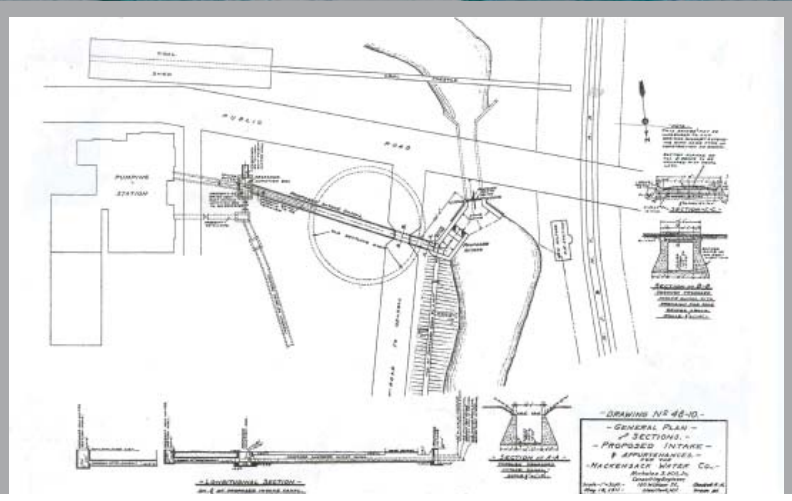


The Way of the Water

Intake Canal

The Intake Canal was constructed in 1911 to replace the 1880's settling basin that fed water to the original 1882 pump house. The concrete canal was open to the elements and was a visible representation of the local ecological connection to the industry of water purification.

Modifications to the Water Works were an ongoing process for much of the early 20th century as output was constantly increased to meet demand. The two pictures on the left show the Intake Canal under construction in 1911 and the finished canal in 1912. The new waterway was another improvement in the overall process of water purification at the Water Works



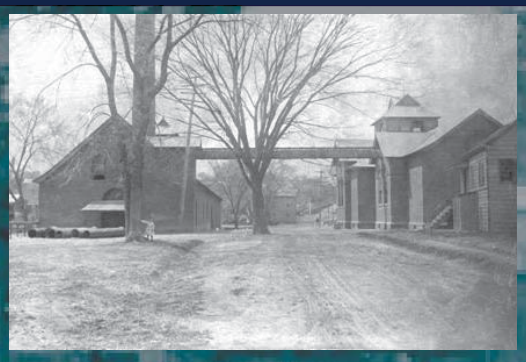
The plan at left shows the proposed changes designed by Nicholas Hill in 1911. The 10' wide canal was made of concrete and passed through what was the old settling basin, shown as the dashed circle. The juction box, located to the right of the Pumping Station replaced existing brick infrastructure. If you look carefully, you can still see the tops of the concrete walls that have since been filled with soil.

This image from 1935 shows the intake canal looking west to the Waste Grates and Intake Screens. Over the two decades since its installation the manicured, landscape plants on either side have begun to grow in. The original decorative, wrought iron fence that surrounded the Intake Canal can be seen where, what is today, Elm Street crosses the canal.

The Way of the Water

Pumping & Boiler House

The Pumping & Boiler House is a collection of six buildings constructed from 1882 – 1911 in the Industrial Romanesque style. Here steam driven pump engines drew water from the Waste Grates, through the Intake Canal, and pumped it to the Coagulation Basin. It was eventually drawn back in after filtration to be delivered to users. Here, beneath the concrete, lies a complicated network of pipes that transported water throughout the Water Works and to customers.



An early photo shows a view looking west on what is now New Milford Avenue. The coal storage and original boiler house are shown at left and Pumping House on right. A pipe fed steam over the road to the Pumping Station. Centered between the buildings in the distance is the original J & H Van Buskirk Mill.

At left and below you can see the plan and elevations prepared for the Historic American Engineering Record in 1997. It shows the succession of building development from 1882 through 1911. You are standing where this map indicates "Raw Water Intake".

INTAKE
RAW WATER
SETTLED WATER
FILTERED WATER
DELIVERY

The Way of the Water is simplified in the diagram to the left. Raw water entered the Pumping Station via the Intake Canal and was then delivered to the Coagulation Basin. After settling, water was gravity fed to the Filtration Buildings before being drawn back to the Pump House for delivery.

The Way of the Water

Gate House and Coagulation Basin

The Gate House and Coagulation Basin were constructed in 1905, with additional renovations to the basin in 1936. Coagulation was the process of purifying drinking water through the addition of clarifying agents. The clarifying agents, added in the Gate House, aggregated suspended particles allowing snow-like flakes to settle on the basin floor as clean water moved by gravity to the Filtration Building. The 1936 improvements to the basin included the addition of large paddles, known as flocculators, that improved mixing of water and clarifying agent.

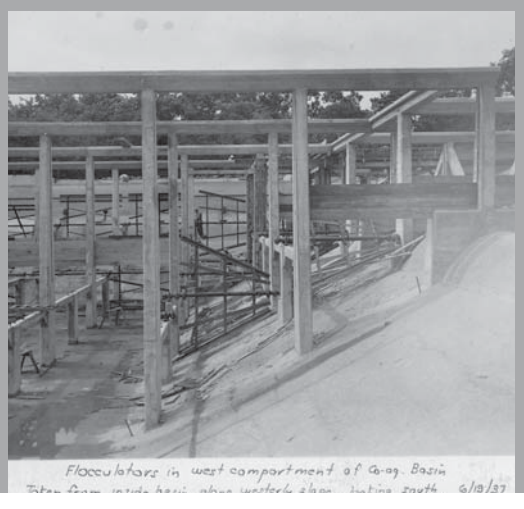
Today the flocculators lie in silence on the south end of the coagulation basin. The large division wall that seperates the west and east portions of the basin can be seen in the rear. The small machinery house for the floculation paddles is perched on top. The baffles with wooden planks can be seen on either side of the flocculators. These walls slowed water movement through the basin allowing for the precipitating flakes, the floc, to settle to the bottom of the basin.

c. 2010

The basin required regular cleaning to remove the accumulated sediments that built up on the floor. For years this was done by hand, pushing the sludge to drains where it was pumped out. By the 1970's a tractor was lowered into the basin to handle the bulk of the labor. Tractor driver Jesse Jones shown at left climbing up the east embankment of the basin

The Gate House, shown at left, houses the mixing chambers where treatment chemicals were added to the raw water prior to entering the basin. The mechanics contained within the Gate House were also designed to control raw and settled water flow and bypass the basin during cleaning.

The same paddles shown in the 2010 photo above can be seen at right being installed in the 1930's renovations to the coagulation basin. The baffle walls are still a skeleton framework prior to the installation of the wooden planks



The Way of the Water

Filtration Building

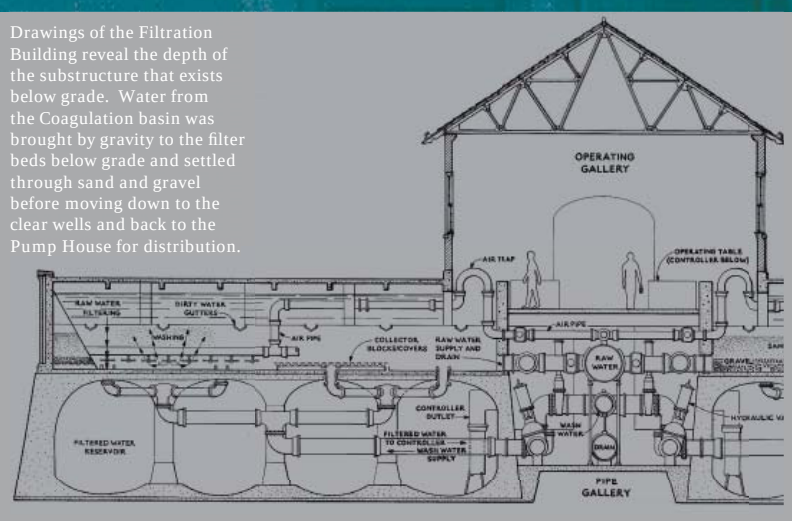
The filtration building you see today is an assemblage of three buildings built in 1905, 1912, and 1955. The complete structure consists not only of the operating gallery, located above ground, but a complex system of pipes and filtration beds extending several stories below. It was here, under the experiments of chief chemist Paul Tamer, that the use of activated charcoal to remove unwanted tastes and odors during the filtration process was developed. This method of filtration quickly became the standard for water purification throughout the world.

Laboratories were included in the building as the science of producing pure drinking water was refined. Raw and treated water were tested for color, odor, and suspended solids.

Taken from just west of Elm St. on what is today New Milford Ave, here you can see the Filtration buildings with the original Wash Water Tank both designed by Herring and Fuller in 1904. On the right you can see the 1906 extenstion of the Boiler House under construction.

Filtration Building c. 1906.

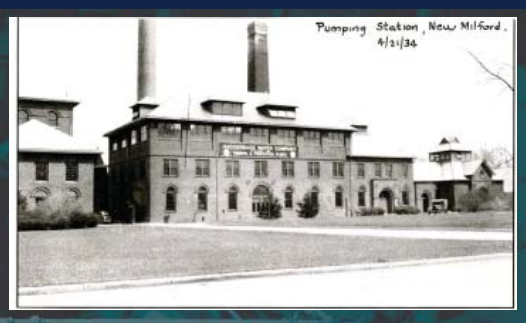
Drawings of the Filtration Building reveal the depth of the substructure that exists below grade. Water from the Coagulation basin was brought by gravity to the filter beds below grade and settled through sand and gravel before moving down to the clear wells and back to the Pump House for distribution.



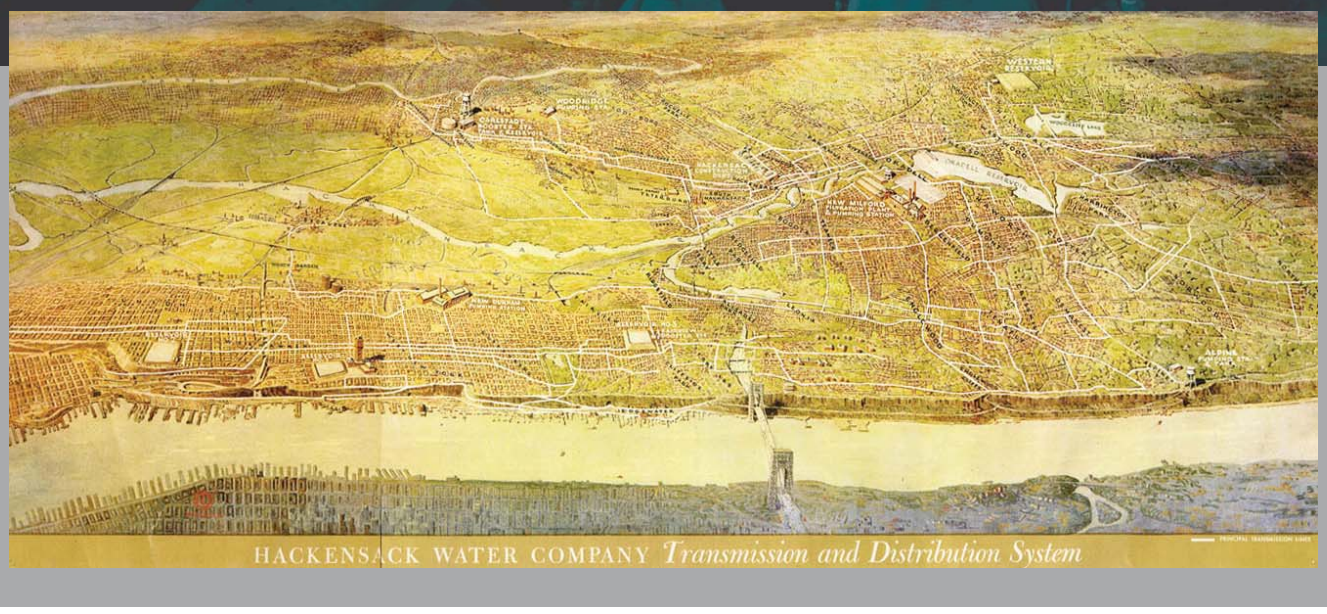
The Way of the Water

Pumping & Boiler House

After settling in the subgrade filter beds located under the visible portionof the filtration building, finished water was fed through pipes to the suction wells located directly below. From here water was drawn by pumps up from the wells and directed out for delivery. The collection of pumps responsible for the steady supply of clean drinking water consisted of a No. 11 Worthington pump (1941), No. 7 Allis-Chalmers Verticle Triple Expansion (VTE) pumping engine (1911), No. 10 Worthington pump (1941), and the two Nos. 13 & 14 DeLaval electric pumps (1956,1959) The jewel of the Water Works' collection was the Allis-Chalmers VTE pumping engine, "Old No. 7".



Although showing signs of its age, the Pumping and Boiler House remain nearly unchanged since this photo in 1934. The pumping station marked the final step of the Way of the Water at the Water Works on Van buskirk Island. From here water was delivered to customers over a time span of 108 years.



The white lines in this map from the mid 20th century show the principal transmission lines of delivery laced throughout the region. Post-war growth from returning soldiers and the blistering pace of suburban expansion put a continuous demand on the Water Works and the natural resources of the Hackensack River. By 1950, the Water Works was connected to 1,200 miles of water mains and pumped 47,000,000 gallons of water a day from the Hackensack River.

Old No. 7

Capable of pumping 20 million gallons of water a day, No. 7 stands nearly 50' tall and occupies nearly one third of the 1911 pumping station's interior. Though it was placed out of commission in the early 1960's by the addition of the DeLaval electric pumps, the preservation of this historic piece of American engineering is owed largely to the foresight efforts of supervisor Gus Carlson and dedicated employees. The company's preference was to remove the machinery, but the prohibitory costs of dismantling and removing the large steam engine meant that it remained. From the 1960's through the plant's closing on May 31st, 1990, Old No. 7, though decommisioned, was devotedly cared for by Water Co. employees.

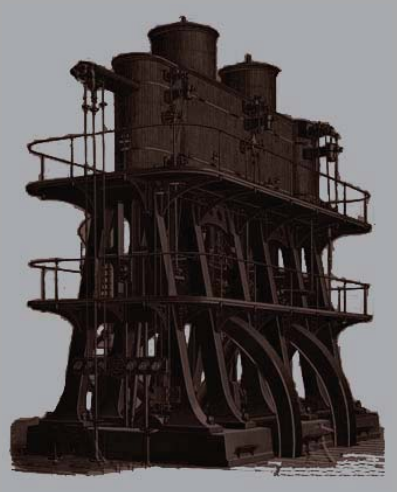
Old No. 7 circa 2010

"I can remember witnessing three of the old Allis-Chalmers steam engines at New Milford working in harmony to pump out the water...there was a melodious type of rumble through the plant that always reminded me of Jules Verne's 'Twenty Thousand Leagues Under the Sea' and Captain Nemo when you looked at those pumps. That's what I would think when I was just a kid looking at them. It was just unbelievable."

-Ted Hoffman

1. No. 7 Allis-Chalmers VTE Pumping Engine, 1911
2. No. 3 Allis-Chalmers pump, 1915
3. No. 10 DeLaval pump, 1929
4. No. 4 DeLaval pump, 1937
5. No. 1 Worthing pump, 1941
6. No. 12 Worthing pump, 1941
7. No. 1 & 2 Worthing pump, 1948
8. No. 13 DeLaval electrical pump, 1956
9. No. 13 DeLaval electrical pump, 1959

The drawing of the Pump House shows the location of the various pumps and piping in the complex web of water that flowed through the buildings and landscape.



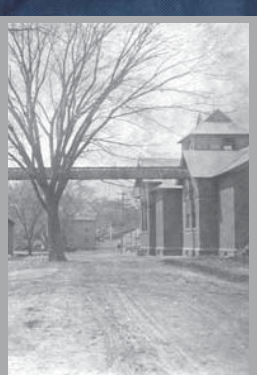
The No. 7 Vertical Triple Expansion Pumping Engine was built and installed by the Allis-Chalmers Manufacturing Company in 1911. Each flywheel on the massive steam engine weighed 21 tons and could rotate at 22 rpm, displacing 607 gallons at each revolution. The overall daily output for Old No. 7 was 20 millions gallons per day. The monumental engine represents the pinnicle of American steam engineering in the early 20th century.

J & H Van Buskirk Mill

This is the site of the original J & H Van Buskirk Grist Mill. It was located at the head of the navigable waters of the Hackensack River and at the northern most point of tidal influence. Before the arrival of the railroad, Schooner ships made travels from New York City up the Hackensack River in the commercial exchange of merchandise that provided vital goods and economic revenue to the area. Jacob Van Buskirk operated two ships of his own the "Kate Lawrence" and the "General Grant". The mill and adjacent land was purchased by the Reorganized Hackensack Water Company in 1881 for $50,000.

The property was purchased by Jacob and John Van Buskirk on August 10, 1837 for $5,500. Before the Revolution, the original mill on site functioned as a saw mill and then was converted to a tannery and bleaching mill. Jacob then converted it again to a grist mill, that produced ground rye, buckwheat, wheat, and feed. It ran continuously for 45 years before it was inherited by Jacob's sons, Jacob Jr. and Henry. This late 19th century photo shows the grist mill with delivery wagons.

The properties containing mills along the Hackensack River became ideal candidates for purchase as the Water Company expanded. The Veldran Mill was purchased in 1901 and became the site of the Oradell Dam when the need for a reservoir became apparent to offset seasonal fluctuations in water quantity and quality. The property was originally owned by John and Luke Van Buskirk, then traded hands several times, before it was purchased by William Veldran from Albert Ackerman in 1863.

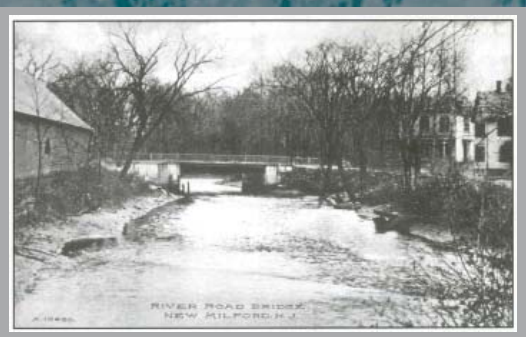


At left, in the distance the J & H Van Buskirk Mill can be seen down Landing Rd, just to the right of the Elm tree.

At right is the map of the property conveyed to the Hackensack Water Company by Jacob Jr. and Henry Van Buskirk. The red line marks the property outline, and the mill is rendered in yellow, located just left of Landing Road. Even by 1881 significant changes to the flow of the Hackensack River had been made. Mill races were cut to feed water to the water wheel, which turned the millstone to grind grains.

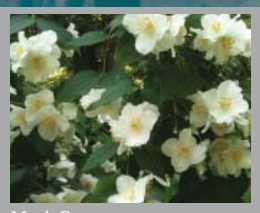
Worker's Housing

The working hours required to produce pure drinking water often extended far beyond the normal daily work schedule. The complicated network of pipes, pumps, and machines were so heavily interconnected that small problems left unchecked had the potential for serious repercussions. Shown in the photo at right of the 1902 flood, the superintendent's house was always been located in close proximity to the facility. A decade later, the house was moved to the southern portion of Van Buskirk Island and additional housing for workers was built. Today, remnants of that landscape remain despite years of natural reclamation. Look carefully, and you can see Pachysandra, Mock Orange, and Doublefile Viburnum that still tell the story of the gardens around the former homes.



Circa the early 1900's, the picture at left shows where the current Madison Avenue bridge crosses the Hackensack River. On the left is the 1886 addition to the boiler house and on right is the newly placed housing for employees of the Pumping Station.

The aerial at right, from 1976, shows the location of the workers housing. The complex that housed the onsite crew was demolished in the 1980's.



Mock Orange
(Philadelphus sp.)

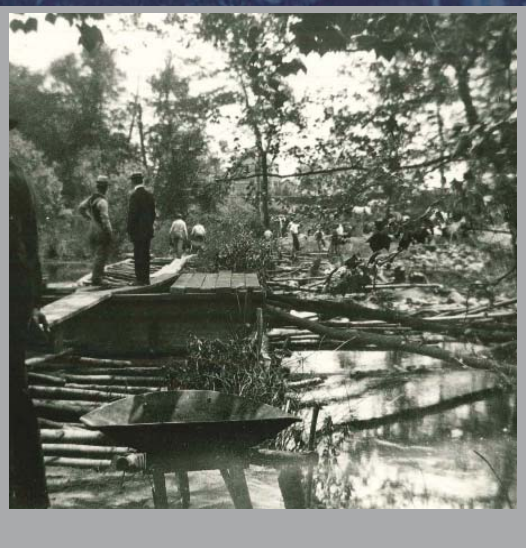
Doublefile Viburnum
(Viburnum plicatum)

Pachysandra
(Pachysandra terminalis)

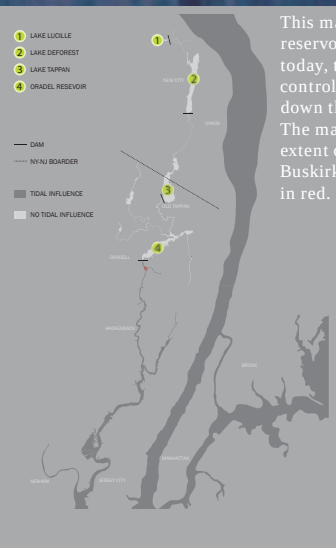
Ecology and Industry

Ecology and Industry have shaped each other in the development of the landscape of Van Buskirk Island. While the location of the Water Works was chosen for the abundance of natural resources and the previously installed infrastructure of the original Van Buskirk Grist Mill, the unique ecology we see today is a result of the changes industry has made on the land. The weir located at the island's northern tip originally controlled water flow to the intake basin before being drawn through the Waste Gates. Today the area provides hunting ground for the Black-Crowned Night Heron (*Nycticorax nycticorax*), who can be seen waiting to ambush unsuspecting fish blocked by the weir.

The intake basin on the west side of Van Buskirk Island may seem like a natural leg the in the Hackensack River, but it is a manmade extension first built to service the J & H Van Buskirk grist mill. In this image you can see the intake basin being modified to be the temporary coagulation basin before the 1905 coagulation basin, located top left, under went extensive renovations.



In 1901 the Water Company purchased Veldran's Mill, located about a half of a mile north of Van Buskirk Island. A dam was built with a water storage capacity of 1.4 billion gallons of water, enough to supply 35 million gallons daily to the Water Works. This constant supply was now available with no fluctuation due to rainfall or seasonality in water flows. The picture at left shows the beginning of construction in the early 20th century.

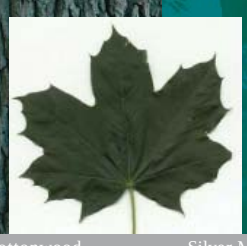


This map shows the four reservoirs and dams in place today, that engineer and control the flows of water down the Hackensack River. The map also shows the extent of tidal influence. Van Buskirk Island is highlighted in red.

The restricted flows down the Hackensack River allowed for salts to build up in the soils of the tidal estuaries downstream. This coupled with dredging for crops, controlling mosquitoes, and rapidly growing industry completely changed the natural habitat of the Meadowlands. This area was once a thriving ecosystem of swamps and bogs dominated by Atlantic White Cedar (*Chamaecyparis thyoides*), similar to the picture at left. The last surviving Atlantic White Cedar died in 1939 as a direct result of restricted fresh water flow caused by the Oradell Dam.

Local Flora

The vegetative character of Van Buskirk Island is dominated by many native species. The riparian edge of the Hackensack River contains River Birch, American Elm, and American Linden. The areas of deciduous forest, like the one you are standing in now, host large stands of Sycamore and Tulip Poplar. Like most natural habitats, there are non-native invasives. The Norway Maple, a highly invasive tree, and Japanese Stiltgrass, an equally invasive and destructive grass, both have found home on portions of the island and compete with native species to occupy space.

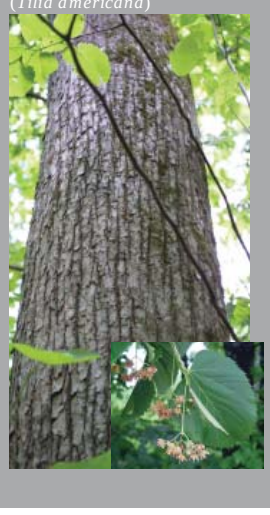


The greyish ridge-and-furrow bark and the wider than long maple leaf are identifying characteristics of the Norway Maple (*Acer platanoides*). Japanese Stiltgrass (*Microstegium vimineum*) is recognized by its low carpet of lance-shaped leaves. Both species seed themselves easily and have few natural predetors to deter spreading.

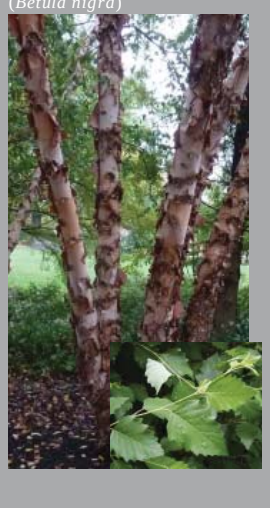
See what species you can find...

Sycamore (*Platanus occidentalis*)

American Linden (*Tilia americana*)

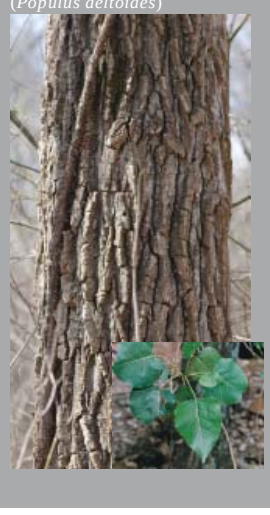


River birch (*Betula nigra*)



American Elm (*Ulmus americana*)

Eastern Cottonwood (*Populus deltoides*)



Silver Maple (*Acer* saccharinum)

American Beech (*Fagus grandifolia*)

Local Fauna

Heavy flows, high oxygen levels and a course sandy bottom in the intake basin provides good living conditions for fish and other aquatic wildlife. Many fish are stranded behind the dams at the northern tip of Van Buskirk Island, making great foraging ground for birds such as the Black-Crowned Night Heron (*Nycticorax nycticorax*). Other wildlife on the island includes the Eastern Painted Turtle (*Chrysemys p. picta*) and the Little Brown Bat (*Myotis lucifungus*).

Mummichog
(*Fundulus heteroclitus*)

Their name comes from the Native American word meaning "going in crowds". They are native to the coastal and brackish waters of the Northeast. These little fish have incredible tolerance to survive in polluted waters. Because of their presence in large numbers, shore birds and birds of prey, like the Black-Crowned Night heron, have food to forage in disturbed or polluted areas as we work to restore native habitats and species.

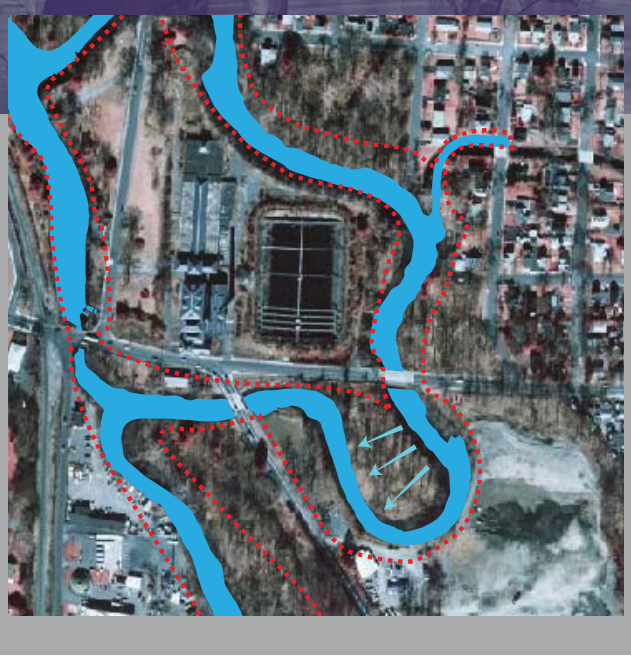
The Black-Crowned Night Heron is a medium-sized heron found in most parts of the world. They hunt by waiting at the waters edge at night or early morning searching for fish, crustaceans, frogs, insects, or even small birds. Listen for its harsh, raven-like call. *"CWAARK!"*

The Eastern Painted Turtle is a cold-blooded reptile ranging from southeast Canada down to Georgia. They thrive in the upper Hackensack River with its soft, river beds and primarily fresh water. They scavenge their food from the river floor or skim the water's surface, eating larvae, bugs, and the occasional dead fish.

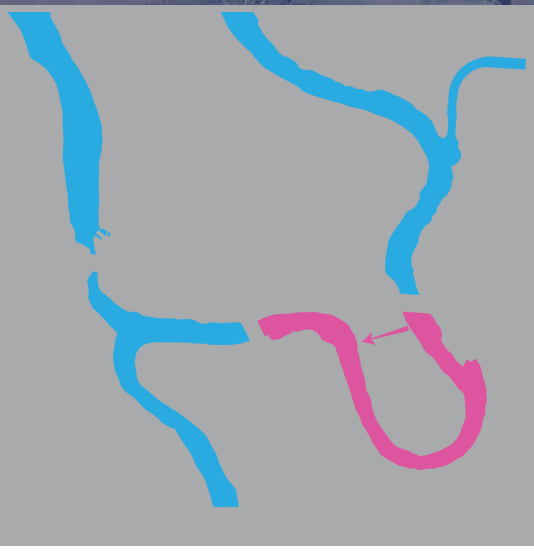
The Little Brown Bat can be seen taking to the sky at dusk from the months of March-September. These small nocturnal creatures roost in the trees, buildings, and chimneys in and around Van Buskirk Island. At night they hunt by echolocating their prey in midflight, catching them with their sharp teeth or scooping them up with their wings. Voracious eaters, Little Brown Bats have been known to eat up to 600 moquitos in one hour.

Floodplain

The portion of Van Buskirk Island you see across the Hackensack River has been untouched by development for nearly 100 years, as documented by the forest coverage on the aerial photo at right from 1930. At elevations of only 6' above sea-level, this area frequently withstands heavy flooding and can be considered part of Van Buskirk Island's floodplain and riparian zone. Riparian zones are unique and rich habitats at the interface where aquatic and terrestrial communities converge. Ecologically, these buffers zones are often rich with species diversity and abundance and they play a vital role in water quality and overall river health.



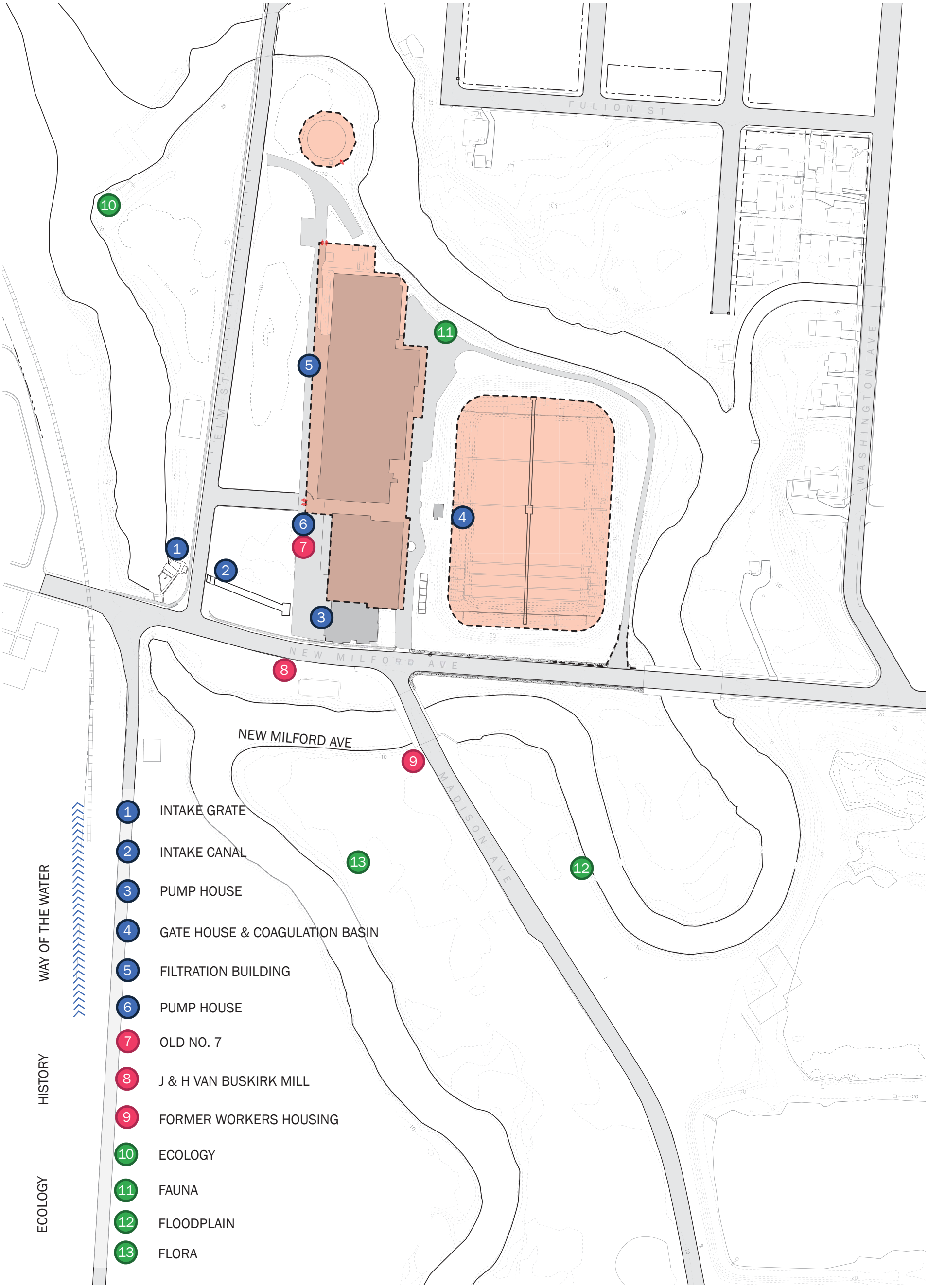
The overlay at left shows the floodplain of Van Buskirk Island as a red dashed line. Note that the undeveloped portion of land contained within the oxbow leg of the river at bottom right is contained within the floodplain. When water levels rise, water moves in sheets across the low lying surface of the land, taking the path of least resistance.



An oxbow is a U-shaped curve in a river that is often so narrow there is only a small neck of land between the two parts of the river. Oxbows are common hydrologic features in many rivers and aide in slowing the speed of water which reduces scouring, or loss of soil. After years, the narrow neck between the two portions can be breached, as the arrow at left shows and the result is a oxbow lake as the river takes a new course.

Signage Locations

The signage located throughout the Water Works is placed to guide visitors through three different ways of understanding the Water Works; The Way of the Water, Ecology, and History panels. Each is placed in proximity to the object, building, or area they described and are tools for site interpretation.

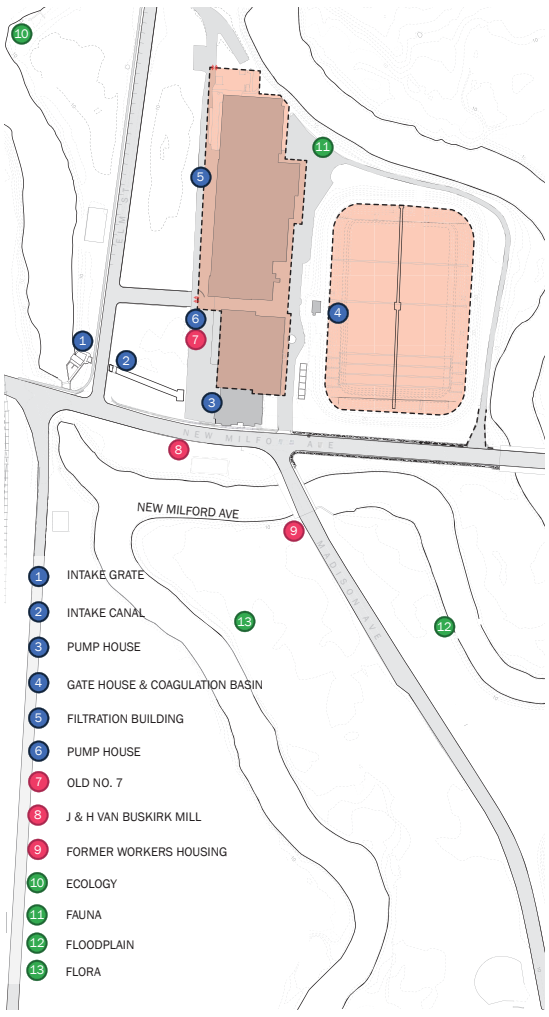


This sequence of images shows a temporary installation of interpretive signage at the proposed key elements along the path system. The photographs were taken on December 19th, 2012.

1

2

3


NEW MILFORD AVE
NEW MILFORD AVE
1 INTAKE GRATE
2 INTAKE CANAL
3 PUMP HOUSE
4 GATE HOUSE & COAGULATION BASIN
5 FILTRATION BUILDING
6 PUMP HOUSE
7 OLD NO. 7
8 J & H VAN BUSKIRK MILL
9 FORMER WORKERS HOUSING
10 ECOLOGY
11 FAUNA
12 FLOODPLAIN
13 FLORA


4


5


6

7

Old No. 7

Capable of pumping 20 million gallons of water a day, No. 7 stands nearly 50' tall and occupies nearly one third of the 1911 pumping station's interior. Though it was placed out of commission in the early 1960's by the addition of the DeLaval electric pumps, the preservation of this historic piece of American engineering is owed largely to the foresight efforts of supervisor Gus Carlson and dedicated employees. The company's preference was to remove the machinery, but the prohibitory costs of dismantling and removing the large steam engine meant that it remained. From the 1960's through the plant's closing on May 31st, 1990, Old No. 7, though decommisioned, was devotedly cared for by Water Co. employees.

"I can remember witnessing three of the old Allis-Chalmers steam engines at New Milford working in harmony to pump out the water...there was a melodious type of rumble through the plant that always reminded me of Jules Verne's "Twenty Thousand Leagues Under the Sea" and Captain Nemo when you looked at those pumps. That's what I would think when I was just a kid looking at them. It sets just unbelievable."

Ted Hoffman

Old No. 7 circa 2010

8

J & H Van Buskirk Mill

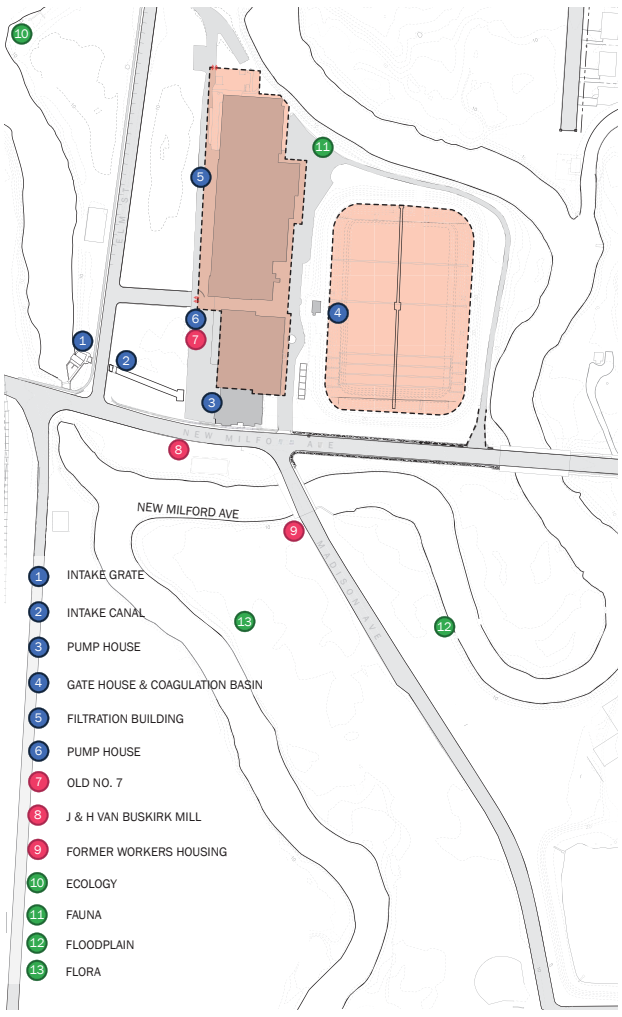
This is the site of the original J & H Van Buskirk Grist Mill. It was located at the head of the navigable waters of the Hackensack River and at the northern most point of tidal influence. Before the arrival of the railroad, Schooner ships made travels from New York City up the Hackensack River in the commercial exchange of merchandise that provided vital goods and economic revenue to the area. Jacob Van Buskirk operated two ships of his own the "Kate Lawrence" and the "General Grant". The mill and adjacent land was purchased by the Reorganized Hackensack Water Company in 1881 for $50,000.

9

Worker's Housing

The working hours required to produce pure drinking water often extended far beyond the normal daily work schedule. The complicated network of pipes, pumps, and machines were so heavily interconnected that small problems left unchecked had the potential for serious repercussions. Shown in the photo at right of the 1902 flood, the superintendent's house was always been located in close proximity to the facility. A decade later, the house was moved to the southern portion of Van Buskirk Island and additional housing for workers was built. Today, remnants of that landscape remain despite years of natural reclamation. Look carefully, and you can see Pachysandra, Mock Orange, and Doublefile Viburnum that still tell the story of the gardens around the former homes.

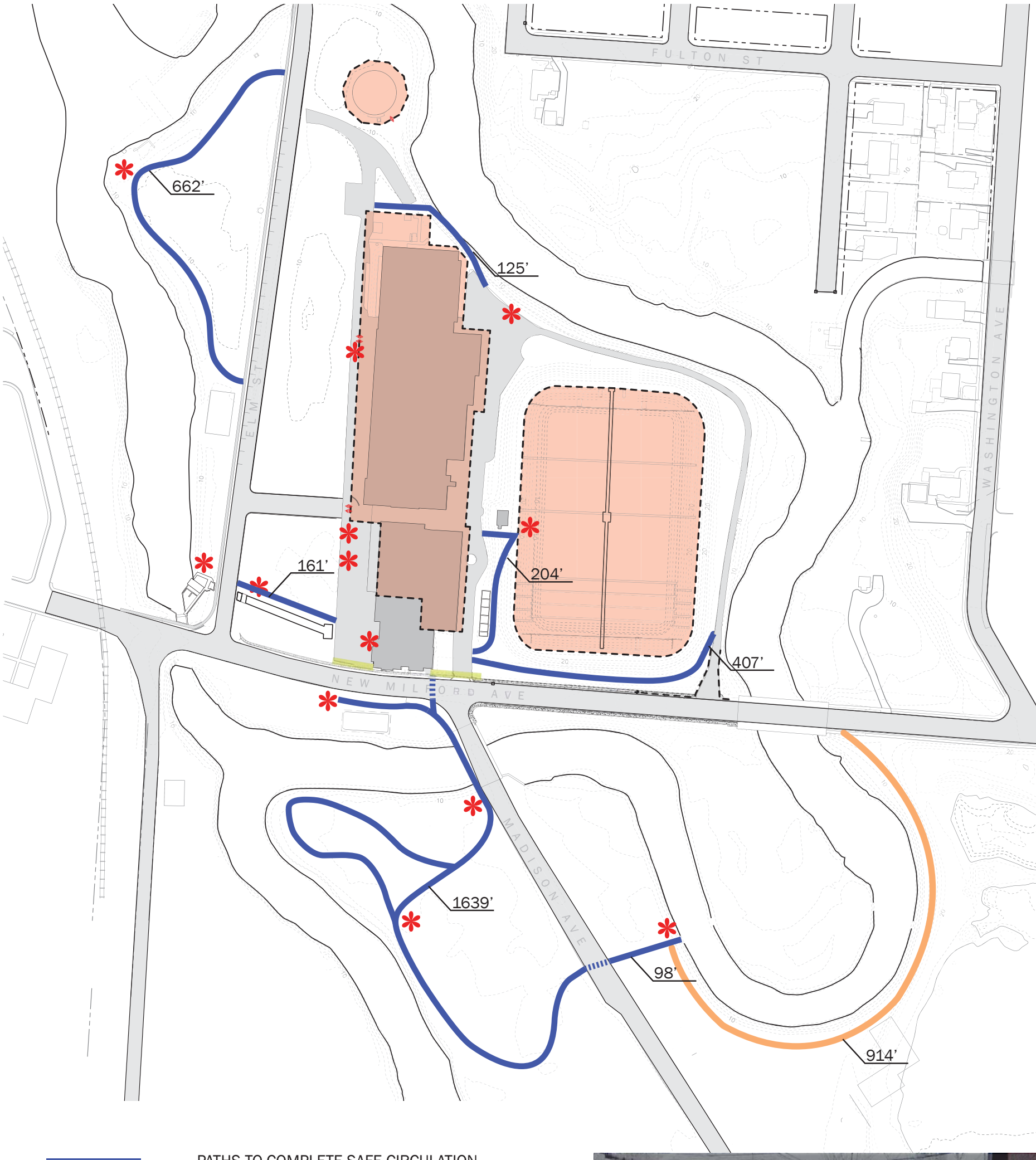
Circa the early 1900's, the picture at left shows where the current Madison Avenue bridge crosses the Hackensack River. On the left is the 1903 addition to the boiler house and on right is the newly placed housing for employees of the Pumping Station



Photograph of panel #12, Floodplain, unavailable due to restricted access.

Path System

Building on existing infrastructure, this a total of 3,296 linear feet of paths required to provide safe access for visitors to explore the Way of the Water, Historical, and Ecological experiences throughout the site. Additionally the steps at the Gate House will need to be made servicable.



PATHS TO COMPLETE SAFE CIRCULATION
RECOMMENDED MATERIAL: COMPACTED STONE DUST

PATHS POSSIBLY EXISTING

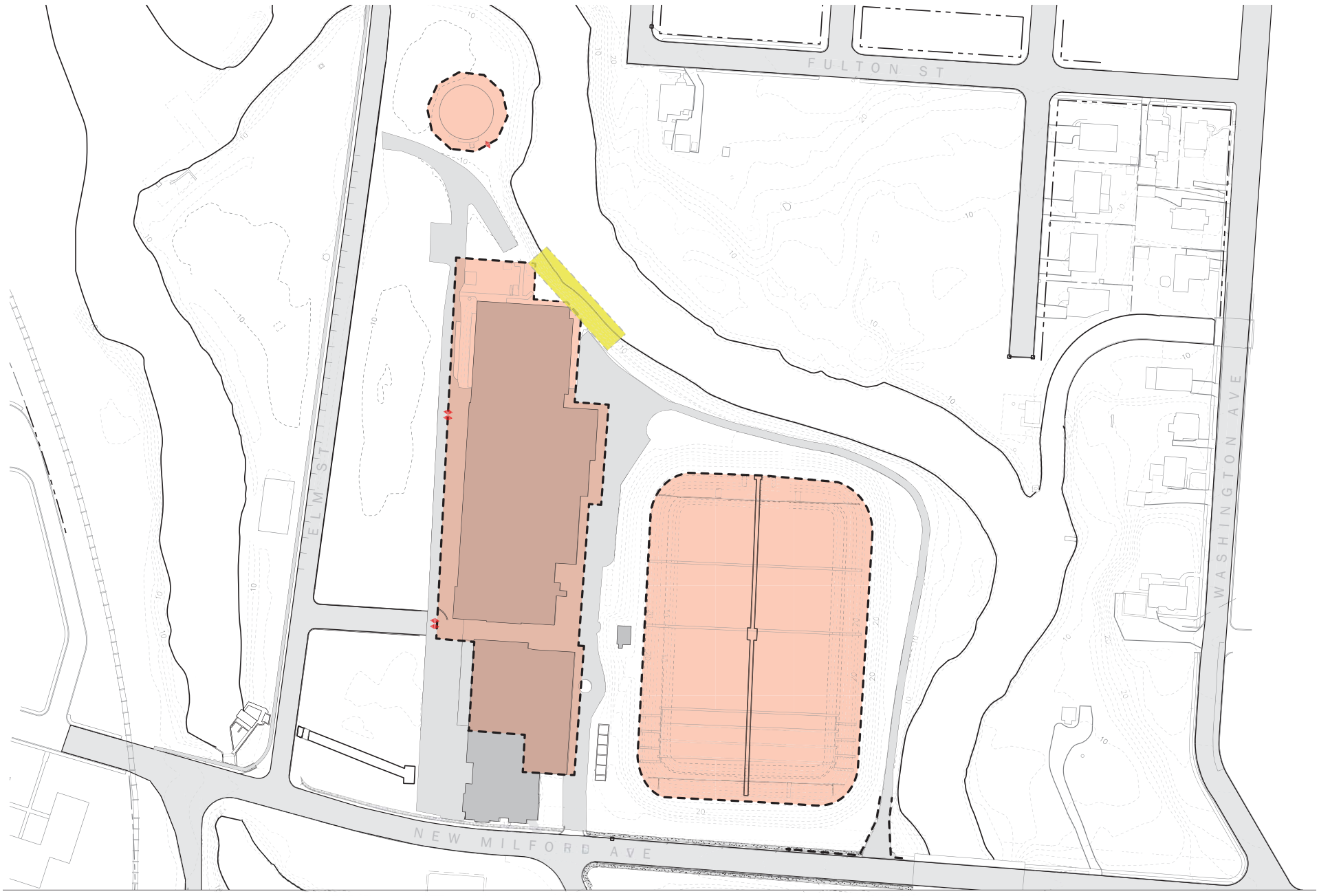
SIGNAGE LOCATIONS

AREAS OF CONCERN - SEAMLESS TRANSITION
NEEDED FROM SIDEWALK TO W.W. PROPERTY
TO ENGAGE PUBLIC TO USE SITE

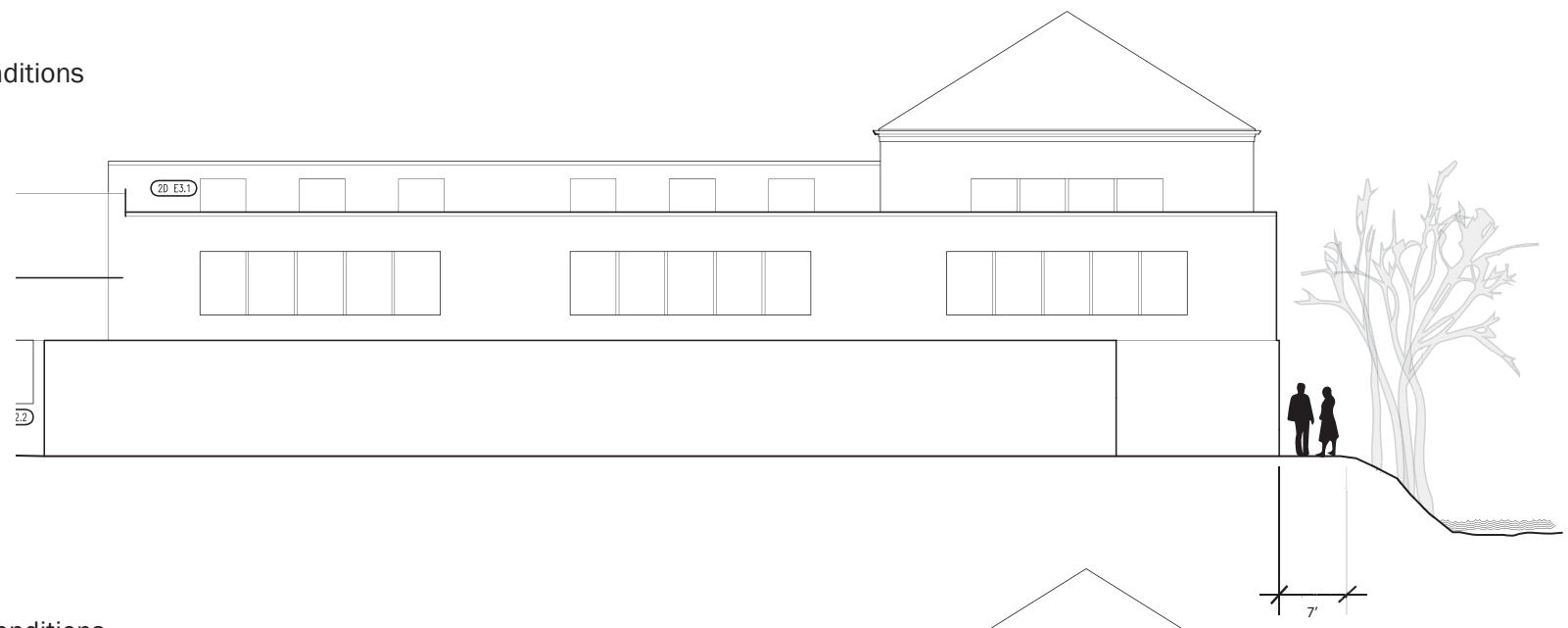
Gate House stairs: 20 risers and 2 landings

Filling the Gap

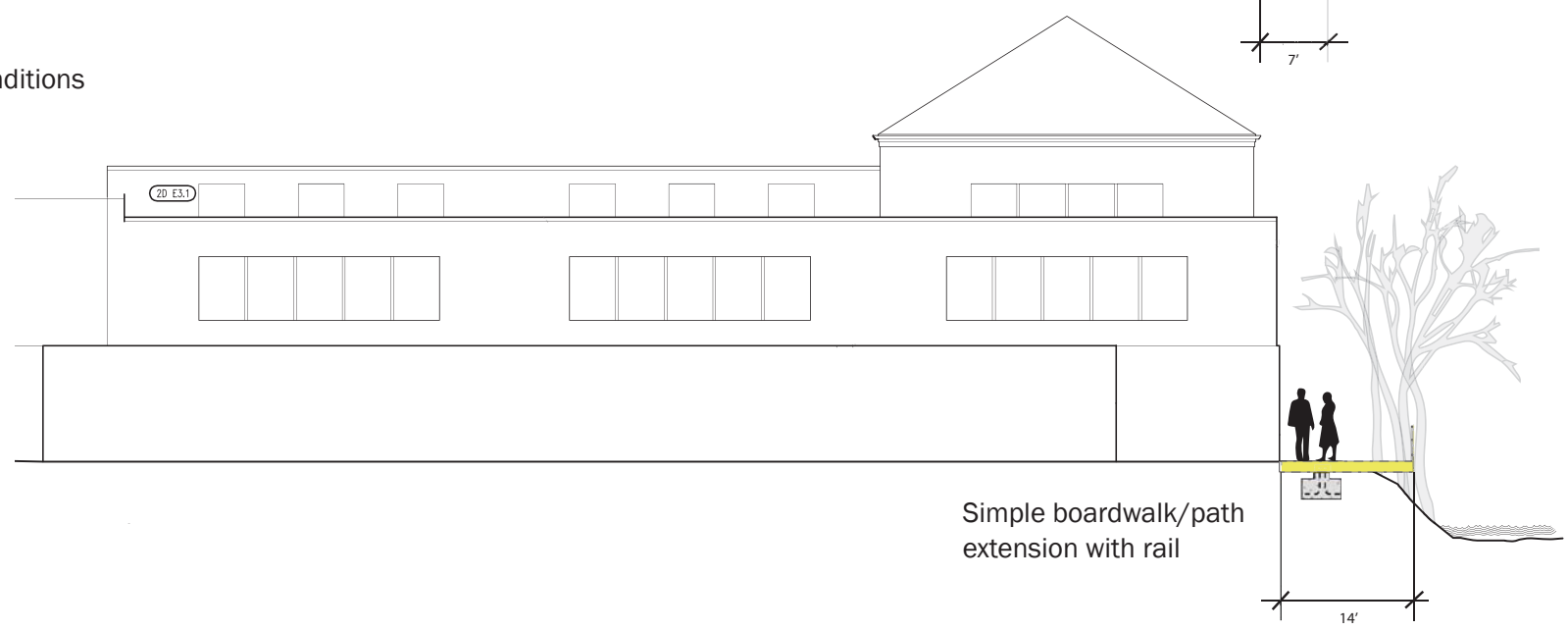
The need for a full circulation loop around the buildings and site will help ensure ease of use and deter unwanted activities. A possible solution could be a short cantileaver path to bridge this gap.



Existing Conditions



Proposed Conditions

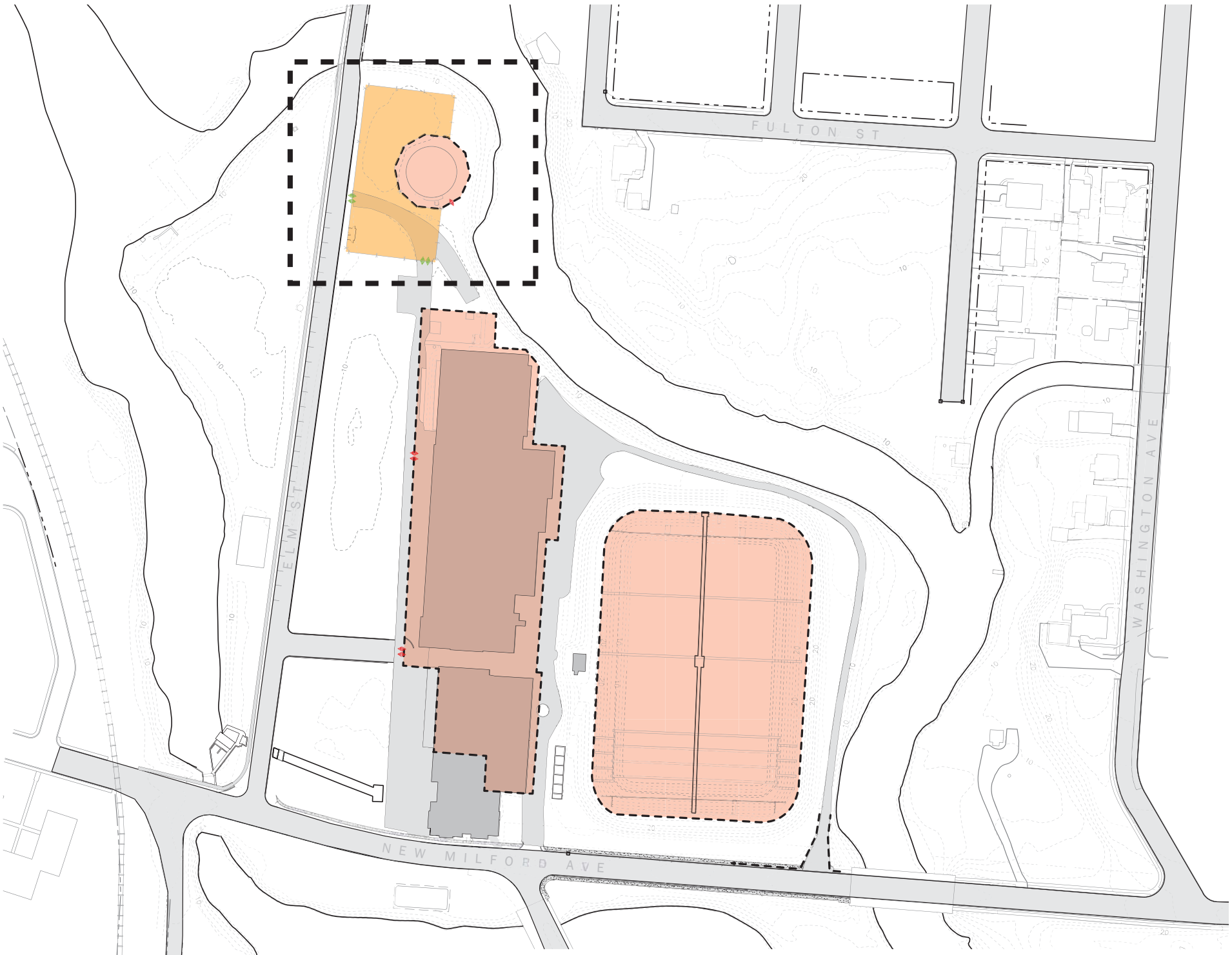


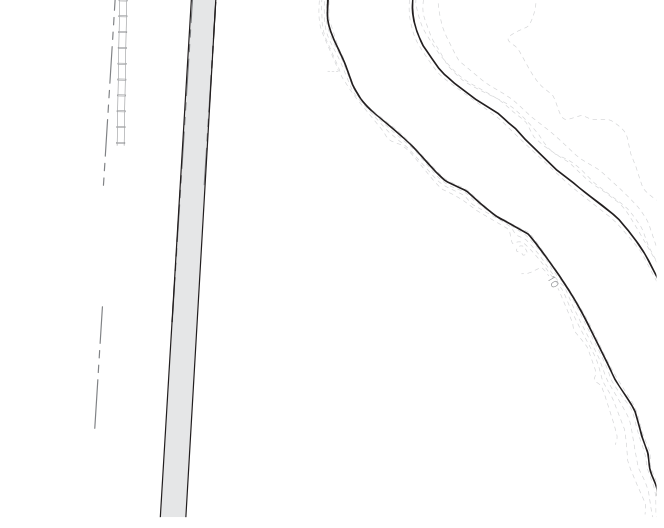
Simple boardwalk/path extension with rail

Dog Run Option A

Immediate use of the site in the early phases of the project will help garner public attention and deter unwanted activities that often come with unused buildings. A dog run is a simple, effective, and full-year use that can be implemented with minimal cost.

* Dog Run shares fencing with Waste Water Clarifier; Area is 20,750 sq ft.
* Fencing required is 614 linear ft. with three 3’ gates for double gated entry tioin 14’ gates for vehicular access

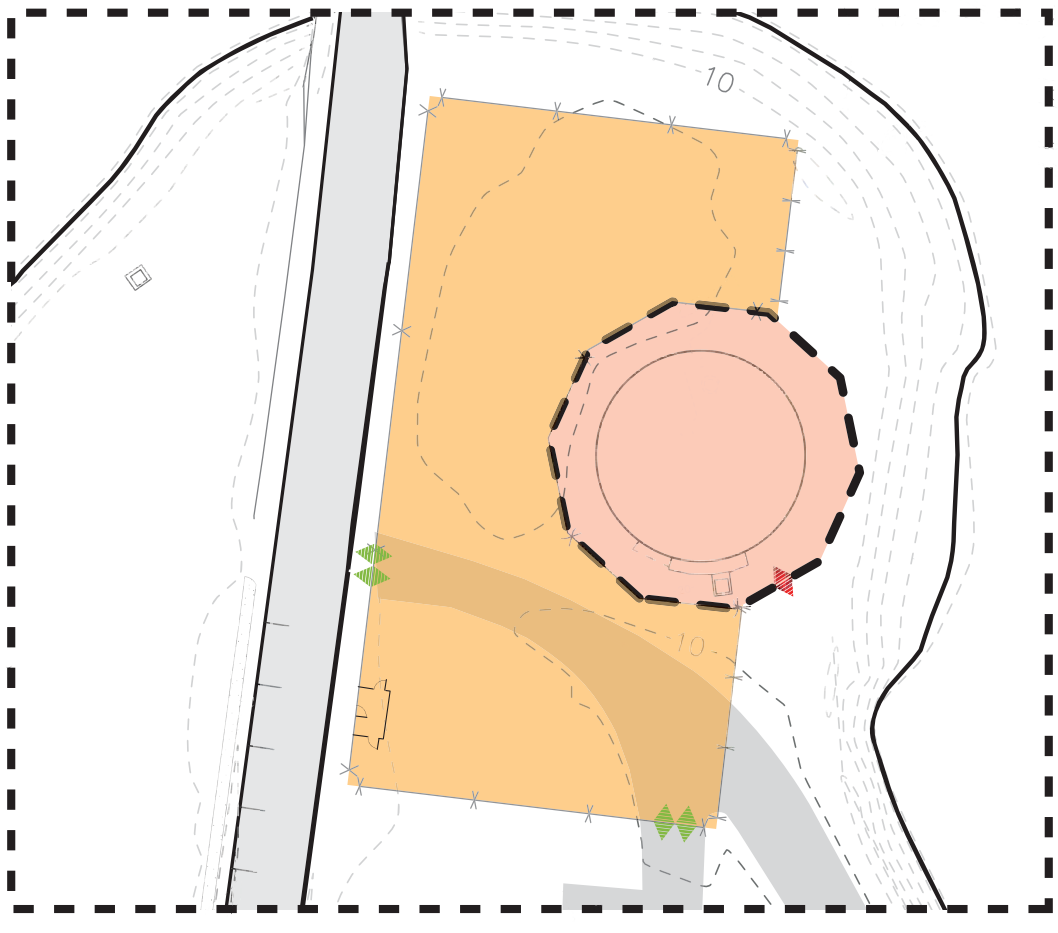




DOG RUN

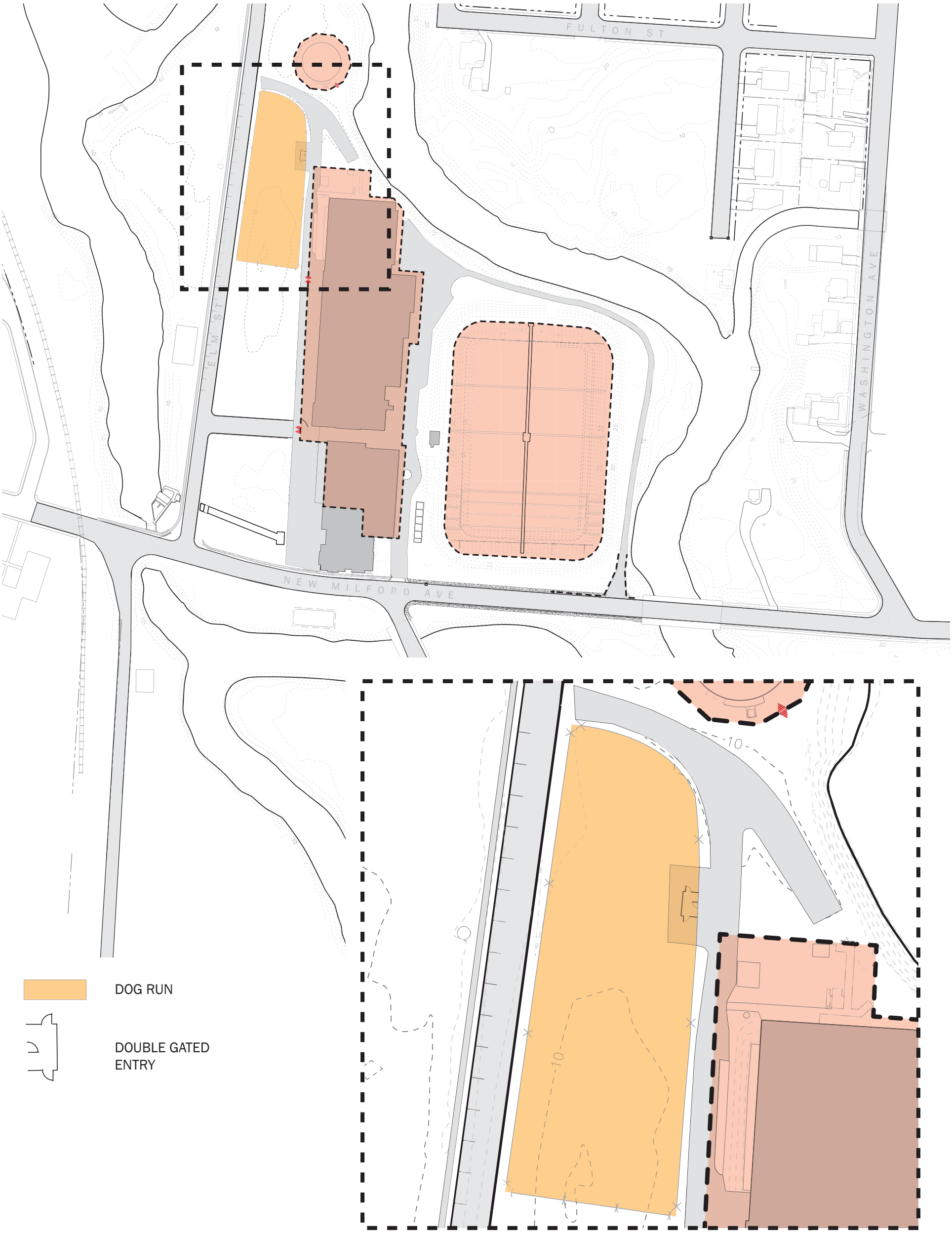
DOUBLE GATED ENTRY

OPTIONAL 14’ VEHICLE GATE



Dog Run Option B

Area is 28,253 sq ft.
Fencing required is 764 ft. with three 3’ gates for double gated entry



Suggested Amenities

The suggested amenities will serve as an invitation for the community to begin use of the site. These amenities are not permanent design solutions, but a simple and cost effective means of changing the public perception that the Water Works is “off limits”.

* Whether dog run option A or B are chosen, both should include two trash, two recylcing, and two doggie bags.