

## ABSTRACT

Title of Document:

**WATERFRONT REGENERATION:**

Mediating Boundaries of Abandonment

Along the Hudson River

Allison R. Palmadesso, Master of  
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Directed By:

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The edge between city + water has become a divide. This thesis addresses this edge that has been thickened by abandoned industry and challenges the way we design for our changing waterfronts through a design approach relying on specificity of place. The design proposal shows how the water/city divide can become a connective threshold, how industrial landscapes can be reclaimed, and how this place-specific investigation can be an example to learn from through Westchester County's Hudson River Waterfront, the City of Yonkers, and the abandoned Glenwood Power Plant. This method has resulted with the integration of building into landscape so that it acts as part of a new infrastructure which cleans water, supports urban agriculture, and provides recreational and training opportunities for the surrounding community. Flows have been repurposed to knit connections in all axes, and begin to heal water's edge.

**WATERFRONT REGENERATION:**  
Mediating Boundaries of Abandonment  
Along the Hudson River

By

Allison R. Palmadesso

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University of Maryland, College Park, in partial fulfillment  
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## **Dedication**

To my mother for her unconditional love + support throughout this year, and to my dog, Scout, who showed me the joys of water's edge at a young age.

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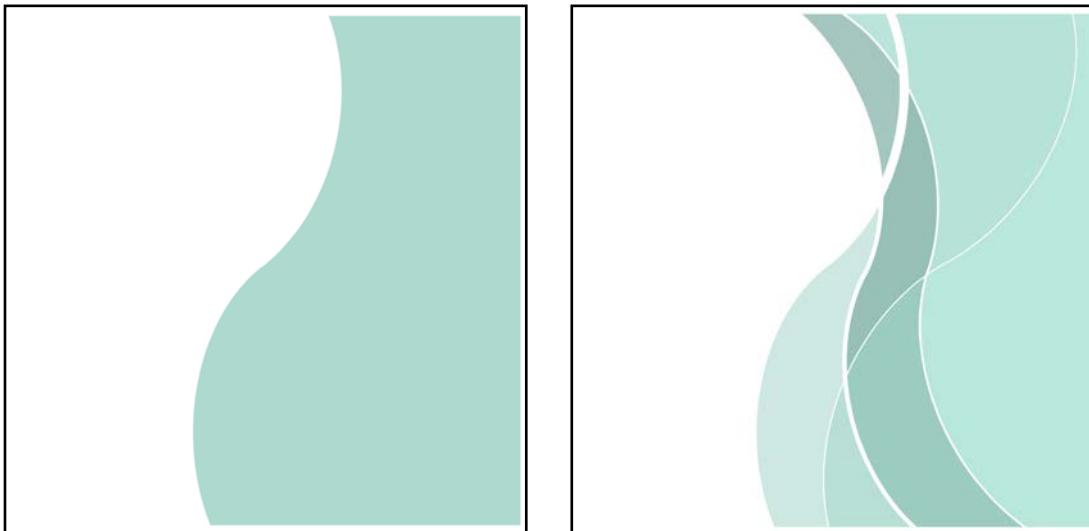
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# Chapter 1: Introduction

## Boundaries + Edge

"I feel I the boundaries  
s o m e w h e r e b e t w e e n  
science + art, art + architecture,  
public + private, east + west"  
-Maya Lin

A boundary is defined as "something that indicates or fixes a limit or extent."<sup>1</sup> It is finite and absolute. Likewise an edge is defined as "the line or part where an object or area begins or ends."<sup>2</sup> This thesis questions whether boundaries and edges have to be so finite, rather asking if they can be



**Figure 1: Boundary vs. Threshold Diagram**  
Credit: Author

conceptualized as malleable thresholds of the in between. Boundaries exist

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<sup>1</sup> "Boundary." Merriam-Webster. January 1, 2014. Accessed November 5, 2014. <http://www.merriam-webster.com/dictionary/boundary>.

<sup>2</sup> "Edge." Merriam-Webster. January 1, 2014. Accessed November 5, 2014. <http://www.merriam-webster.com/dictionary/edge>.

in the hypothetical, theoretical, and the physical world. Architecturally there are boundaries between inside + outside, your property + their property, and building + ground. At the urban scale there are boundaries that make up city limits, public + private domain, zoning, demographics, and many more. Finally at the regional level, there are boundaries delineating states, roadways, and waterways.

The boundary of this thesis is that between land and water - How does this boundary change at various scales? Can the boundary between land and water become more of a transition? Are there physical and psychological boundaries between land and water? What subsequent boundaries contribute to the divide between land and water?

### **Water + Waterfront**

Water has been a resource for development dating back to early settlements around the world. It was a source of defense, agricultural production, trade, transportation, and industry. Therefore it comes as no surprise that most major cities were founded on water, garnering a “close and integrated water-city relation.”<sup>3</sup> In earlier settlements, visiting a port meant “becoming acquainted with a microcosm that seemed to include all

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<sup>3</sup> Butuner, Bas. "Waterfront Revitalization as a Challenging Urban Issue in Istanbul." ISoCaRP Congress. January 1, 2006. Accessed September 10, 2014. [http://www.isocarp.net/data/case\\_studies/792.pdf](http://www.isocarp.net/data/case_studies/792.pdf).

nationalities, cultures, ethnic groups; a visit to a port city was an introduction to the world.”<sup>4</sup>

The rise of the Industrial Revolution in the 19th century brought great change to waterscapes. Industries occupied the waterfront, often separating land uses from water uses. The early 20th century began to relocate industries to outer city zones, leaving deserted gaps on those same edges. Then, in the second half of the 20th century, “revitalization of waterfronts emerged as one of the most important issues of urban design and planning principles.”<sup>5</sup> Cities like Baltimore, San Francisco, and Boston led the way in the 1960s, and iconic developments in Sydney and Bilbao followed suit. These developments succeeded in re-linking city centers with the water’s edge. However, this trend is critiqued for its lack of consideration of place. Aquariums, commercial, and recreation centers aren’t always the best solutions to re-link a city with its water-focused past.

In the chapter titled “Waterfront Theories,” waterfront literature will be explained and compared to provide a foundation of thinking for this thesis. These sources begin to answer the questions posed by this thesis. How can we design for the contemporary waterfront? How can we incorporate water into design? How can we thoughtfully determine appropriate programming for waterfronts? How can we re-link city with water?

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<sup>4</sup> Ibid.

<sup>5</sup> Ibid.

This thesis will approach waterfront redevelopment by recognizing the importance of the specificity of place. There is not a single formula for successful waterfront design. Weaving together history, the needs of the community, city, region, and body of water will make for a site-specific design solution. These thematic problems are shared across many waterfronts and therefore some aspect of the approach and solutions can be applied.

### **Site Definitions + Scales**

The selected site has numerous boundaries and edges – including physical, political, social, economic, and environmental dividers. These boundaries exist to various degrees at every scale. The scales examined for this thesis are as follows:

- **Region** – Westchester County’s Hudson River Waterfront
- **City** – Yonkers, NY
- **Site** – Glenwood Power Plant + Context
- **Building** – Glenwood Power Plant

The selected land-water edge is the Hudson River and its eastern banks in Westchester County. The site is the abandoned Glenwood Power Plant in the urban context of Yonkers, New York. The site’s history and existing conditions will create a basis for solutions that could provide more general lessons for waterfront revitalization. The Hudson River has a rich history, a vast width, and tidal properties that are all characteristics to be celebrated in the incorporation of water into design. Furthermore, the site’s numerous boundaries that prevent land-water connections can be seen as opportunities to be amended.



There is a divide between city and water made by Metro North's Hudson Line railroad running parallel to the Hudson River's eastern banks. The boundary is thickened by a string of derelict factories and various abandoned buildings between rail and water's edge along the waterfront. This divide is analogous at the scale of the site, as the Metro North railroad tracks disconnect the power plant from its surrounding context, a context which includes Trevor Park, JFK Marina, Glenwood Metro Station, the Hudson River Museum, Riverside High School, and a residential neighborhood.

However, the site's limitations can also be seen as design opportunities. The marina, park, and museum are city-owned and are all part of a public trust. The dividing railroad has a Glenwood stop on axis with the power plant. The community is active and passionate about a proposed outcome for the building. Its location is hard to access: it is an underserved community, and it is separated from the downtown waterfront  $\frac{3}{4}$  mile to the south by a strip of industrial sites and brownfields in similar condition to the power plant - abandoned. Lastly, the Hudson River is a victim of pollution and presently has minimal recreational activity. These can all be seen as opportunities throughout this thesis – to heal a waterfront, address the needs of community and city, think and design at several scales, and to creatively arrive at solutions that incorporate adjacent sites and improve connectivity for the entire community.

## **Organization**

Various histories will be layered throughout this thesis to reveal meaningful overlaps in time across topics. The history of waterfronts, transportation, the Hudson River, Westchester, Yonkers, Glenwood Power Plant, and community will be analyzed to expose possible answers to our questions. I believe that specificity of site and a researched narrative is what makes for successful waterfront design, and this thesis strives to succeed through this methodology.

## **Personal Connection**

I've been drawn to this site over the years almost by osmosis. Growing up in Yorktown Heights, NY the easiest means of getting into New York City has always been the Metro North Hudson Line train. I would drive fifteen minutes to the Croton Harmon station, get dropped off, and board the train southbound for the city. My seat was always on the river side, and I would look out on the Hudson River and wonder about various things over the years. I was always fascinated by how close the tracks were to the water – it seemed there were just a few rocks separating the train from the Hudson River's banks. Then, as the train moved south, I noticed that the edge between rail and water began to populate with deteriorating buildings and abandoned factories. I began to question why Westchester County didn't have better access to its waterfront. Sure there were a few restaurants here and there, but you had to navigate over trains and amidst crumbling buildings to

reach his or her destination. The crown jewel of this parade of historical buildings is the Glenwood Power Plant. Though I only learned its name just recently, I was always astounded by its sheer size and majesty along the water.

My feelings while riding into Manhattan really characterize the problem I've identified for this thesis. The Hudson River is a sublime natural asset to the region, but it's as if you can look but you can't touch it. I could press my nose up against the window, but couldn't imagine a way to access the water or these buildings. This thesis has grown from an urge to reclaim this edge for the region, and to design the reuse of one of the many buildings left behind.

## Chapter 2: Waterfront Theory

A survey of waterfront theory is helpful in identifying the global climate of waterfront revitalization. Various thinkers have different takes on how to better one's waterfront, and it has helped inform my own stance on the matter.

### Riverscapes – Designing Urban Embankments

By Christoph Holzer, Tobias Hundt, Carolin Luke, Oliver G. Hamm (2008)

Riverscapes defines itself as a “sourcebook for planning and building riverside developments.” Its focus is on studying opportunities for the revitalization of the Rhine River in Germany through inspiration from completed projects throughout Europe. The book identifies seven typologies of successful waterfront design:

1. Promenade and public squares
2. Urban quarters and buildings
3. Parks and landscapes
4. New accesses
5. Water adventures
6. Conversion and vitalization
7. Flood protection

Riverscapes describes what design features make for successful typologies and lists precedents for each. It also identifies the precedents by scales (Region, City, and Project), which relates to the various scales of intervention in this thesis. After winning the David M. Schwarz Traveling Fellowship this past Spring 2014, I had the chance to use this text as a guide

while visiting revitalized waterfronts throughout Germany, the Netherlands, and France. Please reference “Chapter 9: Precedent Analysis” for these experiences. A brief summary of these aforementioned typologies is helpful for future program explorations:

1. Promenade and public squares
  - Linearity is main characteristic of riverfront promenades
  - Public squares are “oases of tranquility within the linear progression of a promenade”
  - Public squares fulfill feeder function to connect city with water
2. Urban quarters and buildings
  - Proximity to city center and good connections are important
  - Orientation of buildings to river is important to urban morphology
3. Parks and landscapes
  - Green spaces play a vital role in “providing a natural balance for densely populated and developed riversides”
4. New accesses
  - How people experience the water is dependent on forms to gain access to it
  - Promenades, urban quarters, and parks create access
  - New access should “provide intuitive routes to the water:
5. Water adventures
  - River exposure includes “urge for direct contact with water”
  - Water can be used for sitting, swimming, or boating
6. Conversion and vitalization
  - Relocation of industries leaving deteriorating wastelands equals great redevelopment potential
7. Flood protection
  - High tides are only going to increase in frequency and severity
  - Flooding causes physical, financial, and emotional damage
  - Opportunity to improve the aesthetic of flood protection structures

The introductory chapters of Riverscapes align with the waterfront problems identified in this thesis. “Moving Towards a Conception of Regional

Space,” by Thomas Sieverts, discusses waterfront problems at the regional level. Some poignant quotes from this chapter and how they apply to thesis are as follows:

“Outside of city centers, the relationship of the urban districts, cities and smaller communities to the Rhine is problematic: many (literally) **turn their back on the water**, and wide areas are occupied by industrial development and have been **rendered inaccessible**.”<sup>6</sup>

Likewise, the communities that populate the eastern banks of the Hudson River turn their backs on the river. Industry and rail lines have rendered it inaccessible.

“Although the Rhine ‘ignores’ **community boundaries** and flooding or high traffic volume affect all who reside along its banks, there is an utter lack of **a joint perspective for action** which could guide the cities and communities in their relationship to and interaction with the river.”<sup>7</sup>

Rivers don’t follow the same boundaries as municipalities. This unique quality should make for a joint perspective on the Hudson River rather than a fragmented one.

“The aim is to formulate the **complex impact** made by the Rhine on the region as a design assignment, to interpret the high **density of overlapping functions** – such as shipping, industry, living and recreation – as a positive, enriching factor and to design its banks as a showcase for the region.”<sup>8</sup>

The phrase “high density of overlapping functions” applies to the many scales of this thesis. How can all of these uses be copasetic?

---

<sup>6</sup> Holzer, Christoph, Tobias Hundt, Carolin Luke, and Oliver Hamm. "Moving Towards a Conception of Regional Space." In *Riverscapes: Designing Urban Embankments*, 18-21. Basel: Birkhäuser, 2008.

<sup>7</sup> Ibid, 18.

<sup>8</sup> Ibid, 18.

“The region is well placed to win the battle, provided it develops a **unified attitude towards its river** and reinforces the positive qualities of its ‘**spine**’.”<sup>9</sup>

“The Rhine forms **the natural axis of gravity** for the entire area.”<sup>10</sup>

Can the Hudson River acts as a spine to promote east-west connections across the wide breadth of its waters? Can the waterfront be reconceived to join things rather than separate them?

“It should embody the quality of life in the region and render it experiential. Rivers are particularly suitable **embodiments of regional qualities** because they **symbolize connectivity**.”<sup>11</sup>

“The desired outcome...propels the spatial development of the region forward with the Rhine as a ‘**negotiation partner**’.”<sup>12</sup>

The Hudson River is the one commonality throughout the entire region, it should embody that identity as a unifier. The Hudson River itself should be conceptualized as a stakeholder in design.

A second introductory chapter titled “The Appeal of Riverscapes” discusses the significance of riverfronts, encroachment on their edges over time, and the current rediscovery of the waterfront. The following quotes were most applicable to this thesis:

“Water has always been and continues to be **the foundation of all social development**. Alongside drinking water, water provided communities with fertile soil, with the opportunity to

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<sup>9</sup> Ibid, 19.

<sup>10</sup> Ibid, 19.

<sup>11</sup> Ibid, 19.

<sup>12</sup> Ibid, 21.

build roads, with energy to power hammers and mills, and with a means to dispose of their effluent.”<sup>13</sup>

“Rivers also set out **defining lines for growth** on the state level. Settlements generally evolved in a particular area along the watercourse. These **natural lines** then frequently evolved to become national borders – but **also lines of connection linking** countries, peoples and cities.”<sup>14</sup>

This quote relates to this thesis’ understanding of boundaries. How can natural lines meet defined lines? How can urban growth mimic the natural lines of the waterfront?

“Over the history of urban development, this relationship has consequently undergone a continuous process of change which has seen communities in turn **embracing and rejecting their riverside heritage.**”<sup>15</sup>

“With the advent of industrialization, there was a **growing disconnect between Riverscapes and the social consciousness**, despite their increasing economic relevance. This withdrawal was tied to the **receding accessibility of riverbanks**: harbor installations, railroad tracks and highways were created, industry developed along the rivers, which **served as an important artery** for the supply and disposal of goods.”<sup>16</sup>

How can this receding movement from waterfront be reversed? Industrial remnants and railways can be seen as opportunities for re-use and transit-oriented development to return community to the water.

“By domesticating meandering meadows to create straightened and concentrated river courses flanked by technical installations as a safeguard from danger, **waterfront locations were turned into a hard** and apparently predictable and controllable infrastructure by diminishing appeal, accelerated by the advent of industrial pollution.”<sup>17</sup>

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<sup>13</sup> Holzer, Christoph, Tobias Hundt, Carolin Luke, and Oliver Hamm. "The Appeal of Riverscapes." In *Riverscapes: Designing Urban Embankments*, 22-25. Basel: Birkhäuser, 2008.

<sup>14</sup> Ibid, 22.

<sup>15</sup> Ibid, 22.

<sup>16</sup> Ibid, 22.

<sup>17</sup> Ibid, 23.



The boundary between land and water must be softer. More natural thresholds between the two will make for successful personal connections to the water.

“The cities shut themselves off, **turning their backs to the river**. This rendered Riverscapes of no interest for other uses or actually made them inaccessible over an extended period.”<sup>18</sup>

“Even today Riverscapes are partially identified by the ‘pathetic emblems of hard labor’ which emerged in the industrial and post-industrial age. The river’s scenic attractions are frequently relegated to the background, whereas the **industrial function it was called upon to perform continues to define its image**.”<sup>19</sup>

Can Yonkers redefine its image by creatively recycling its industrial functions?

“**Whole regions are rediscovering the inherent value in their rivers**. They are becoming aware of its role as a unifying and **common thread**, and are using it as an ace card in their bid to attract residents, jobs and businesses in the face of fierce international competition.”<sup>20</sup>

“The **river and its banks are becoming a brand**, a location factor, image enhancer, a landscape feature of cultural and historical significance and are taking on the erstwhile role of harbors as showcases and gateways to the world.”<sup>21</sup>

Westchester County has begun to plan for this new regional identity, but how can we design places for this new “brand”?

“The need for the **quality regeneration and restructuring** of riverscapes is consequently born out of social, economic and also ecological factors.”<sup>22</sup>

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<sup>18</sup> Ibid, 23.

<sup>19</sup> Ibid, 23.

<sup>20</sup> Ibid, 24.

<sup>21</sup> Ibid, 24.

<sup>22</sup> Ibid, 25.

The site, city, and region of this thesis embodies these three needs for regeneration. Socially, there is a need for safety, education, and public access to waterfront. Economically, there is a need for new jobs, revenue, and development investment. Ecologically, the Hudson River is riddled with pollution and brownfields that need remediation.

“The establishment of new points of access to the riverbank and facilities [allow] **communities to experience the element of water.**”<sup>23</sup>

“Once we succeed in making the **water’s edge accessible to all**, in cultivating it and making spaces available both for building and leisure use as well as landscape development, then **our riverbanks can prove their credentials as the region’s showcase** and as the driving force behind urban and regional development of outstanding merit.”<sup>24</sup>

Riverscapes succeeds in cataloging successful precedents for urban design and identifying the underlying motives of waterfront redevelopment.

The word cloud below highlights the words used most often in the selected quotes. Words like

riverscapes,  
communities, industrial,  
river, region, and lines  
stand out the most in  
their relevance to this  
thesis.



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<sup>23</sup> Ibid., 25.

<sup>24</sup> Ibid., 25.

## Waterfront Regeneration: Experiences in City-Building

By Harry Smith and Maria Ferrari (2012)

Waterfront Regeneration: Experiences in City-Building is a text that highlights key issues for waterfront revitalization and discusses relevant case studies around the North Sea.

The book's introduction, "Sustainable Waterfront Regeneration Around the North Sea in a Global Context," provides key insights about the history and current international state of waterfront redevelopment. The spread of waterfront regeneration began globally in the 1960's, from its origins in North American cities like Baltimore, San Francisco, and Boston. These changes were "driven by obsolescence and abandonment of vast industrial areas," and the waterfronts became "an essential paradigm of the post-industrial city."<sup>25</sup> The introduction cites Bruttomesso when defining three types of activity that waterfronts normally require:

1. Recomposition: giving a common unitary sense to the different parts, both physical and functional, of the waterfront
2. Regeneration: revitalizing urban areas which can be of considerable size and often centrally located
3. Recovery: the restructuring and restoration of existing buildings and structures<sup>26</sup>

The chapter goes on to critique a "globalization of waterfront themes," where successful cases have set precedent and typologies and forms have

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<sup>25</sup> Smith, Harry, and Maria Ferrari. "Sustainable Waterfront Regeneration Around the North Sea in a Global Context." In *Waterfront Regeneration: Experiences in City-Building*, 3-16. London: Routledge, 2012.

<sup>26</sup> Ibid., 3.

been copied worldwide. This point coincides with the thesis' approach that waterfront development should be about specificity of place, rather than a global model.

Shaw's three generations of post-industrial waterfront provide a good timeline for reference:

1. 1960's: Early North American experiences creating retail and festival marketplaces (Baltimore, San Francisco)
2. 1980's: Europe up-scaling first generation projects, public-private partnership models, and use of private investment (London Docklands, Rotterdam, Barcelona)
3. First two generations become mainstream development practice and used in cities small and large (Liverpool, Berlin's Wasserstadt, Shanghai)<sup>27</sup>

The chapter also explains Shaw's argument for a fourth generation that emerged in the 2000's. Shaw believes:

"Ideas in planning and architecture go through a 30 year cycle from radical and experimental visions (first stage), through broader application of the ideas (second stage), then consolidation and standardization of the ideas (third stage), with radical review and new visions in the fourth stage (or first of new cycle)."<sup>28</sup>

Due to the worldwide recession in the 1990's as an important factor, Shaw believes that cities are in a fourth generation of rethinking the use of resources, and have conceptualized the waterfront as a resource.

This chapter sets the book up to discuss case studies of the fourth generation and their links between "globalization and local determinants." It

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<sup>27</sup> Ibid., 4.

<sup>28</sup> Ibid., 4.

also holds that while several stakeholders are involved the development process, there has been “lack of opportunity for involving local communities and the wider public in the city, both in the process and in benefiting from the resulting places developed.”<sup>29</sup> The reader is asked why this is, and what caused the origins of physical and institutional legacy in the waterfront context. This observation relates directly to the goal of involving the locality of place and community needs in this thesis.

The chapter goes on to explain a generalized timeline of the waterfront overtime. It explains that the first urban civilizations in the Eurasian continent arose from river valleys. Rivers were a resource for agriculture as well as transport for trade and travel. Then later, civilization began connecting with seas and oceans. Water then took on new roles; it became a food source, routes for trade and travel, conquest and colonization, and eventually for leisure. It is fascinating to see how water’s role has changed and continues to change over time.

The text identifies Robertson’s theory for three waves of globalization in which technological change facilitated waterfront growth:

1. 1500-1800: worldwide expansion of Europe’s mercantilism (made possible by new sailing technology)
2. 1800’s: imperialist expansion, worldwide trading system from colonies to imperial power (steam-powered technology)

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<sup>29</sup> Ibid., 4.

3. 1945-now: financial expansion, development of infrastructures and transport connections (new information and communication technologies).<sup>30</sup>

Since World War II, “rising internationalization in production patterns took place and emerging processes of de-industrialization began to affect urban spaces.”<sup>31</sup> The adoption of new technologies for operation meant that industries could work with fewer employees on smaller areas of land, thereby “releasing urban areas for other technologies...wider use of road transport left large railway marshaling yards empty.”<sup>32</sup> In the 1980’s onward, urban development has shifted from social objective to primarily economic objectives. Developments are replacing the negative iconography of declining industrial areas with attractive new investments in these areas. Yonkers is doing exactly that with its waterfront during its Renaissance of previously industrial riverbanks.

The 1980’s also displayed a growth in unemployment, pollution and contamination of rivers and watercourses, and abandoned and decaying buildings. Mega projects took place during this time, including well-known examples like Barcelona’s Olympic Marina, New York’s Battery Park, or Sydney’s Darling Harbor.

“The overall aim of these transformations [is to create] a new identity for these cities away from previous industrial activities and responding to the needs of global ‘place’ competition.”<sup>33</sup>

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<sup>30</sup> Ibid., 5.

<sup>31</sup> Ibid., 6.

<sup>32</sup> Ibid., 7.

<sup>33</sup> Ibid., 7.

Surely, the objectives of these cities pertain to the current goals set out by the City of Yonkers. However, rather than globally, I think Yonkers is in a regional 'place' competition, striving to establish itself as a premiere city within Westchester County.

“At the city level there has been an increase in the conception of urban places as spaces for consumption and not for production.”<sup>34</sup>

Yonkers's waterfront used to primarily produce power, carpets, sugar, and transport goods. Current proposals are making the waterfront a place for consumption of retail and living space.

Regeneration responds to a number of global needs:

- Good connectivity: physical proximity isn't a priority but accessibility is
- Image: either nostalgic (restructuring of historical uses – commercialization of memories) or technological (hyper-technological buildings with starchitect designers)
- Branding: creation of theme areas with enough strength to generate urban concentration processes<sup>35</sup>

This thesis sets out to address Yonkers's struggle with connectivity to waterfront. Its image will be largely nostalgic, with a strong branding identity calling on its industrial heritage and strong community.

“The places that have emerged – in social and cultural terms – have been hotly debated. Key issues include: how are these places created; who is involved in their creation; who benefits from the new waterfront; what should the state's involvement be. Should all cities follow the development model based on attracting increasingly footloose investment; and what makes some waterfront more socially and culturally attractive?”<sup>36</sup>

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<sup>34</sup> Ibid., 8.

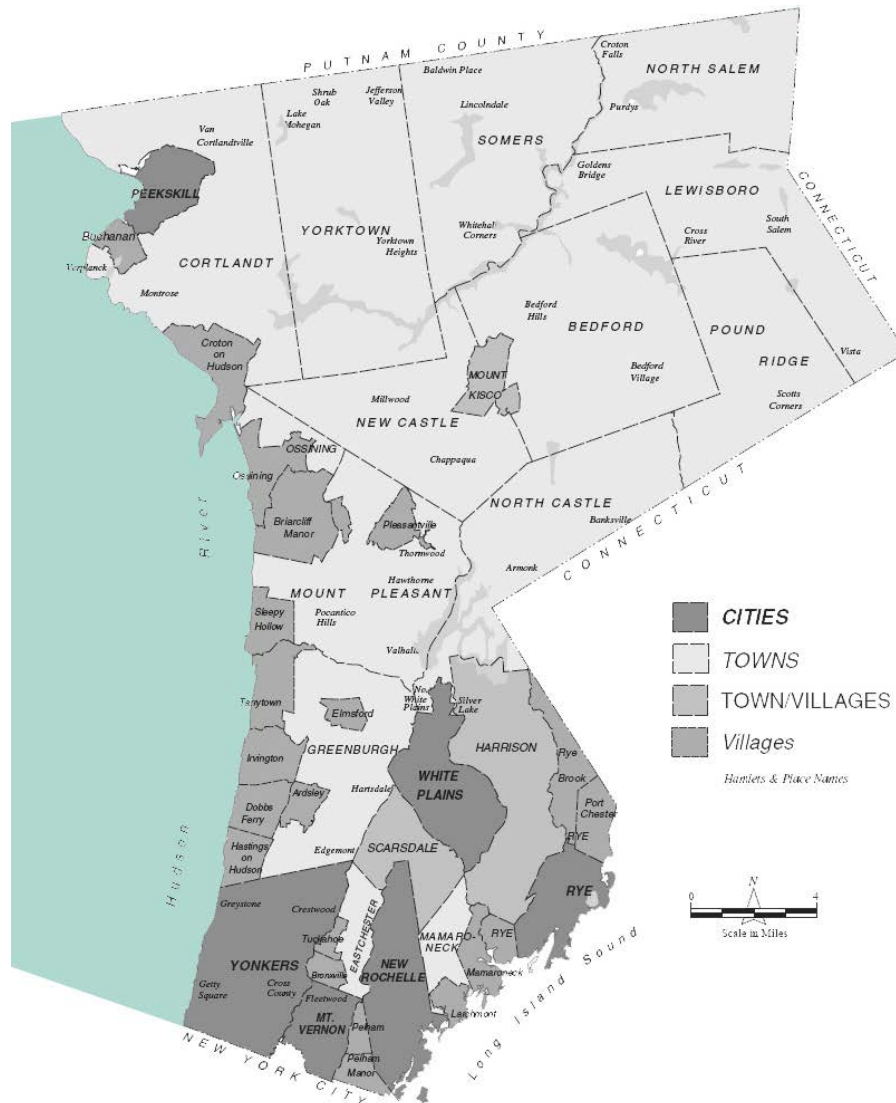
<sup>35</sup> Ibid., 9.

<sup>36</sup> Ibid., 10.

This document will aim to answer these questions as they pertain to the Hudson River, Yonkers's and Westchester's waterfront, and the Glenwood Power Plant. Waterfront Regeneration was an informative text that provided various waterfront theory for the current context of waterfront development.



## Chapter 3: REGION – Westchester County’s Hudson River Waterfront



**Figure 3: Map of Westchester County**  
 Credit: Edited by Author, Source Image by Westchestergov.com

Westchester County is a beautiful region of New York just north of New York City. Historically it has been known to be an escape from the “concrete jungle” of Manhattan, and an oasis of views looking out onto the majestic Hudson River. An examination of the region then and now can help identify instances of divide that have made the riverfront largely inaccessible.

## Hudson River

“The Hudson River is not typical. Its cliffs, and hills, its mile-wide glitter opposite Manhattan, its Catskills and Adirondacks looming into cloud forms at evening, the strange sight of its bright freighters moving swiftly and surely so far from the ocean, its cliff-scaling roads and tall bridges, its inland sea some fifteen miles long and an average three miles wide – all are parts of a river different from those to the north and south of it.”  
- John Reed<sup>37</sup>

### Description

The Hudson River is a 315 miles in length, flowing south from Henderson Lake in upstate New York, past the capital in Albany, “eventually forms a boundary between the states of New Jersey and New York”, then empties into Upper New York Bay just south of Manhattan as it opens up to the greater Atlantic Ocean.<sup>38</sup> The

lower half of the river is a **tidal estuary**, which causes an “intricate push of water against

the tides, which twice daily reverse the flow of the river for many miles and slow it and raise its level as far north as Troy (170 miles from its mouth),”<sup>39</sup>

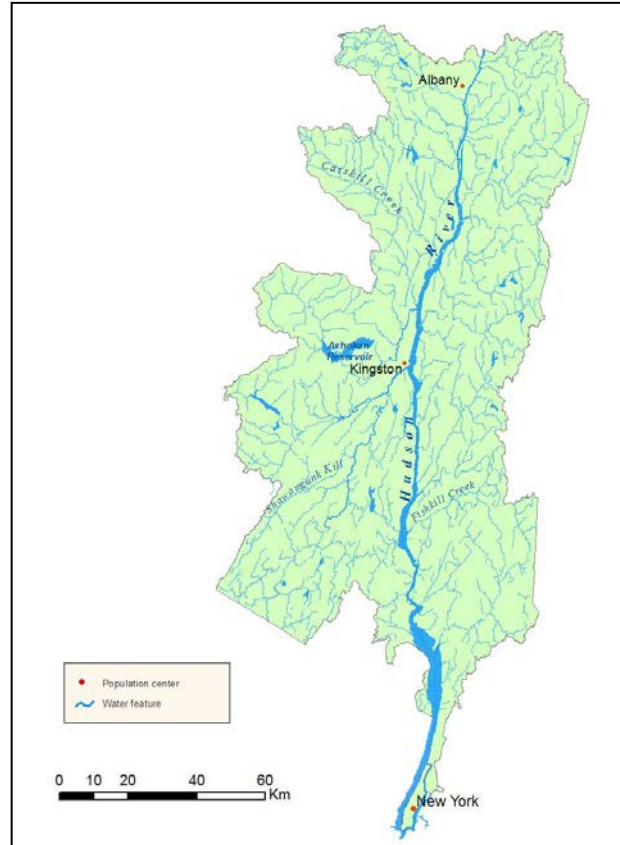


Figure 4: Map of Hudson River Watershed  
Credit: NYS Dept. of Environmental Conservation

<sup>37</sup> Reed, John. *The Hudson River Valley*. New York: C.N. Potter, 1960. 7-33.

<sup>38</sup> "Hudson River." Wikipedia. January 1, 2014. Accessed December 13, 2014. [http://en.wikipedia.org/wiki/Hudson\\_River](http://en.wikipedia.org/wiki/Hudson_River).

<sup>39</sup> Reed, John, 9.

The Hudson River was formed as many as 26,000 years ago with the North American glaciation, in which the Hudson Fjord was formed. A **fjord** is defined as “valleys eroded well below sea level by glaciers, and then filled by the sea after the glaciers melt. They are deepest upstream of their mouths, where the erosive power of the glacier was greatest.”<sup>40</sup> Therefore, this glaciation carved out not only the Hudson River but also the Hudson River Valley.

## **History**

The Hudson River and its Lower Hudson region has taken on several identities over time. Analysis of the colonial, industrial, and twentieth century era reveals insights as to how these identities took shape. The region’s history begins to explain man’s complex relationship with waterfront over time.

### **Colonial (1600’s + 1700’s)**

Up until the 1600’s the Native American Lenape tribe inhabited both banks of the river. They called it Muhheakantuck, meaning “river that flows two ways.”<sup>41</sup> One wonders if the tribe harnessed the character of the two-way river in a special way. In 1609, Henry Hudson explored the river for the Dutch East India Company, calling it the “North River.” The river was of strategic importance as a “gateway to the American interior,” and led to years of

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<sup>40</sup> "The Hudson as Fjord." NYS Dept. of Environmental Conservation. January 1, 2014. Accessed October 7, 2014. <http://www.dec.ny.gov/lands/66611.html>.

<sup>41</sup> "Hudson River."

competition between the English and the Dutch over control of the river and colony.<sup>42</sup>



**Figure 5: Half Moon Arrives on Hudson**  
Credit: Eric Weiss



**Figure 6: Hudson River School Painting**  
Credit: Thomas Cole

The Hudson River and Hudson River Valley has inspired awe and art since its genesis. The Mohawks called the Hudson “Oioque”, meaning “the beautiful river,” and in the 1700’s the river valley and its inhabitants inspired Washington Irving, America’s first acclaimed author, to write “Legend of Sleepy Hollow” and “Rip Van Winkle.”<sup>43</sup> In the 1800’s, the river inspired the Hudson River School of landscape painting, American pastoral style, and concepts of environmental conservation. Surely, the colonial year brought on great change for the region, and the upcoming Industrial Revolution continued to shape the Hudson River Valley.

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<sup>42</sup> Ibid.

<sup>43</sup> Ibid.

## Industrial Revolution (1800's)

The Hudson River's timeline is ornamented with several events in transportation and significant crossings. Transportation events include the Erie Canal opening in 1825, and the New York Central and Hudson River Railroad completion in 1884. Hudson River crossings include bridges, tunnels, and ferries. Some crossings of note include the Verrazano-Narrows Bridge (1964), George Washington Bridge (1931), Tappan Zee Bridge (1955), Lincoln (1937) and Holland Tunnels (1927), PATH and Pennsylvania railroad tubes (1910).<sup>44</sup>

## 1900's – 2000's

The rise of industry's sewer discharge and overall population along the Hudson River caused pollution problems to worsen. In 1965, New York State passed a billion dollar Pure Water Bonds Act to fund sewage treatment.<sup>45</sup> This era of conservation that inspired Pete Seeger and Toshi Seeger to found



**Figure 7: Dredging of the Hudson River**  
Credit: Clearwater.org



**Figure 8: Pete Seeger on the Clearwater**  
Credit: James Preller

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<sup>44</sup> Ibid.

<sup>45</sup> Ibid.

the Hudson River Sloop Clearwater, and environmental educational organization and actual boat that “promoted awareness of the river and its history.” In accordance, the Clean Water Act was passed in 1972 making cleanup a national priority (and providing billions of dollars in the process).<sup>46</sup>

The major pollution problem in the Hudson River was PCBs. Polychlorinated biphenyls are cancer causing chemicals that were used in a number of industrial processes until the federal government banned them in 1977.<sup>47</sup> PCB contamination caused significant economic effects, and money was lost from the ban on recreational and commercial fishing. Also, there were medical expenses for people experiencing side effects from the water, and the cost of clean-up. In 1983, the U.S. EPA declared a 200 miles stretch of the river (Hudson Falls to New York City) to be a Superfund site requiring cleanup – making it one of the largest superfund sites in the nation. In 2001, the EPA proposed a cleanup plan to dredge more than 100,000 pounds of PCBs, making it the “most aggressive environmental effort ever proposed to clean up a river,” costing GE about 460 million dollars. Stage One was completed in 2009, which removed 3 times the amount of contaminated sediment than expected. Stage Two of the cleanup was started in 2011 and should take 5-7 years to complete.<sup>48</sup> Surely, the Hudson River’s pollution problems are in important component in future development of the waterfront.

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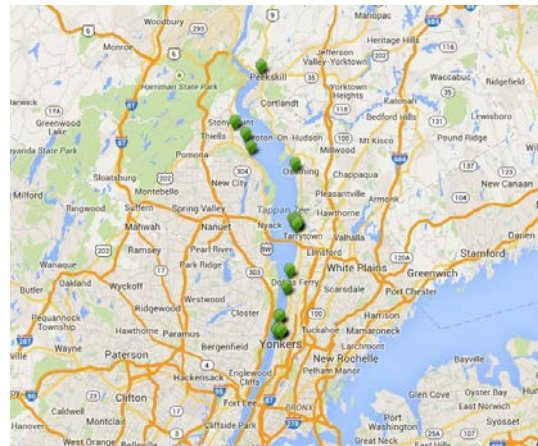
<sup>46</sup> "EPA." Summary of the Clean Water Act. January 1, 1972. Accessed November 5, 2014. <http://www2.epa.gov/laws-regulations/summary-clean-water-act>.

<sup>47</sup> "Historic Hudson River Cleanup to Begin After Years of Delay, But Will GE Finish the Job?" NRDC: National Resources Defense Council. March 23, 2007. Accessed September 19, 2014. <http://www.nrdc.org/water/pollution/hudson.asp>.

<sup>48</sup> "Hudson River."

## Today

The region of focus is coined as Lower Hudson, which includes Westchester, Rockland, and Putnam counties. The “other side” of the Hudson River (its western banks) includes waterfront towns as well as the sublime Palisades Cliffs that make up Palisades Interstate Park. Today, Westchester County is undergoing an era of redevelopment along the waterfront. Looking at relevant regional developments help provide context for the regional intervention of this thesis.



**Figure 9: Waterfront Development Map for Westchester County**  
Credit: Newsday Interactive Map

## RiverWalk

One very relevant development is the Westchester RiverWalk – a planned 51.5 mile “multi-faceted pathway” paralleling the Hudson River in Westchester. It will “link village centers, historic sites, parks and river access points via a connection of trails, esplanades, and boardwalks,” spanning 14 municipalities across Westchester County. It will be completed in segments, and two recently completed sections of RiverWalk include Croton-on-Hudson and Tarrytown-Sleepy Hollow.<sup>49</sup>

<sup>49</sup> "Westchester RiverWalk." Westchester County. October 29, 2013. Accessed November 2, 2014. <http://planning.westchestergov.com/initiatives/westchester-trails/riverwalk>.

**A Hudson River Trail spanning 51.5 miles in Westchester**



**Figure 10: RiverWalk Route Map**  
 Credit: Westchestergov.com

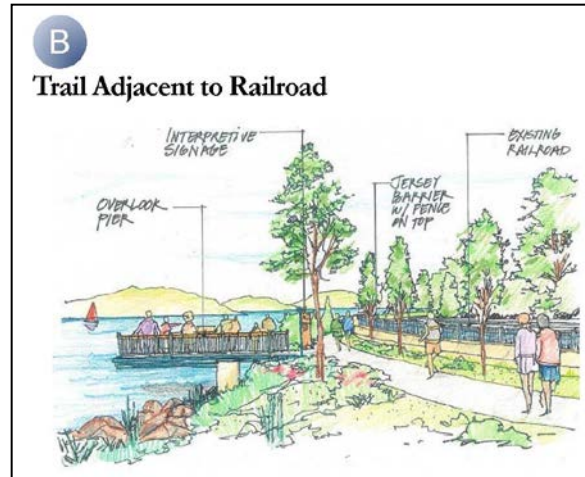


RiverWalk documentation includes a detailed design guidelines manual published in 2005, titled “Westchester RiverWalk: A Greenway Trail” that includes categories of trails, amenities, signage, and scenarios

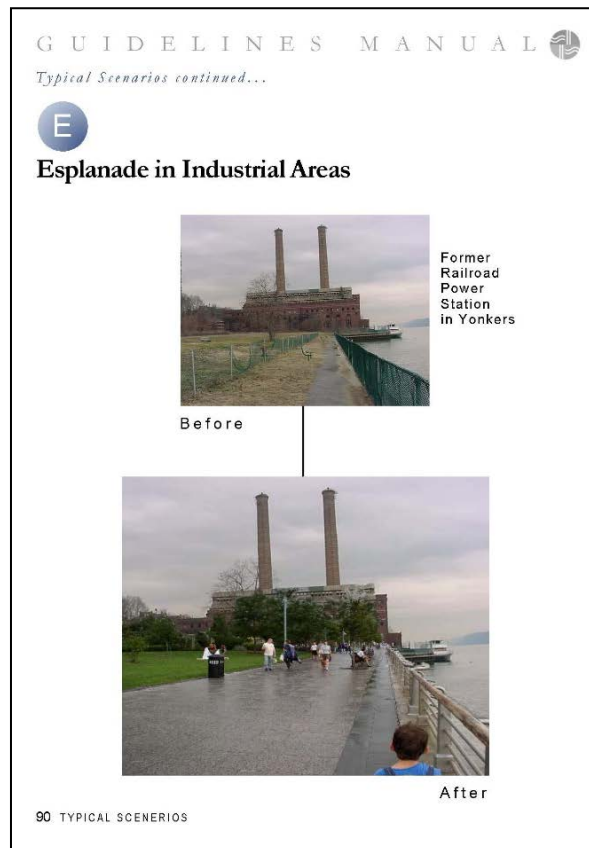
to plan for throughout the RiverWalk.<sup>50</sup> There is also the “Hudson River Trailway Plan,” published in September 2003 that outlines all 29 segments of RiverWalk in detailed segment plans.<sup>51</sup>

RiverWalk will encounter an array of edge conditions including:

- Trail through an existing parking area
- Trail adjacent to railroad (shown in Figure 11)
- Tributary treatment with access to water from trail
- Trail with limited land area
- Esplanades in industrial areas
- Linkages on existing sidewalks



**Figure 11: Trail Adjacent to Railroad Vignette**  
Credit: Westchester RiverWalk Guidelines



**Figure 12: Esplanade in Industrial Areas Vignette**  
Credit: Westchester RiverWalk Guidelines

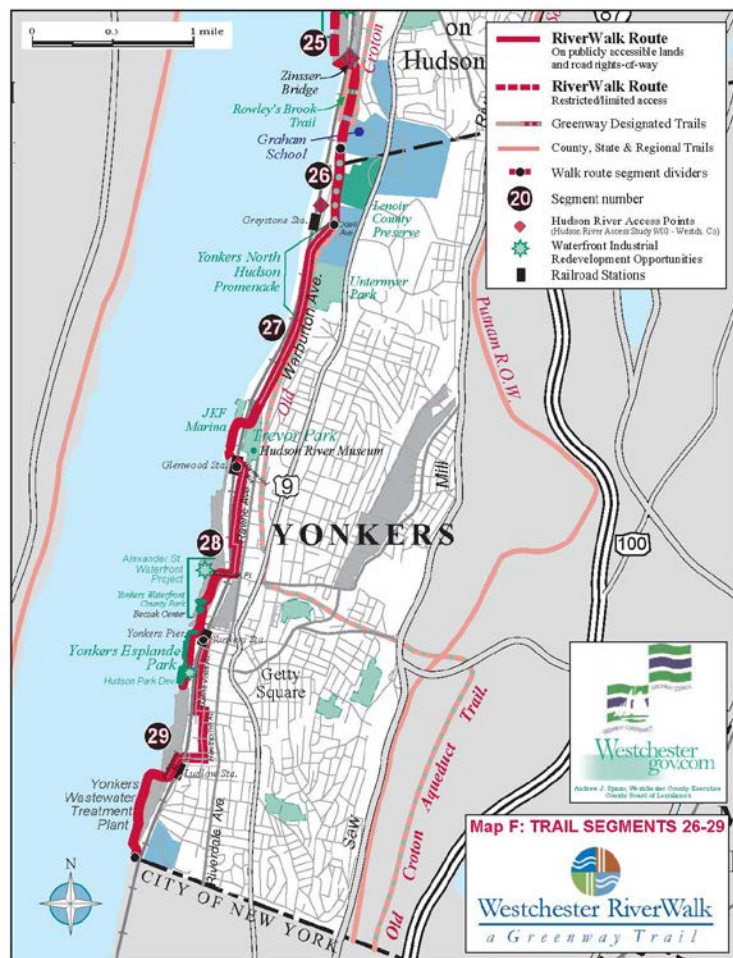
<sup>50</sup> Westchester County Department of Planning. "Westchester RiverWalk: A Greenway Trail." Guidelines Manual. January 1, 2005. Accessed November 1, 2014. <http://planning.westchestergov.com/images/stories/RiverWalk/rwguidelinesweb.pdf>.

<sup>51</sup> Westchester County Department of Planning. "Hudson River Trailway Plan." September 1, 2003. Accessed December 13, 2014. <http://planning.westchestergov.com/images/stories/RiverWalk/hudrivertrailplan.pdf>.

Two completed segments of RiverWalk to date include RiverWalk Croton-on-Hudson and RiverWalk Tarrytown-Sleepy Hollow. The region, city, site, and building for this thesis all fall within RiverWalk’s scope. In RiverWalk’s plan, “Segment 27 – Warburton, City of Yonkers (Odell Avenue to Metro-North Glenwood Railroad Station)” will be most relevant for this thesis, with Segments 26-29 as important surrounding context. In Figure 12, the power plant site is represented to become an “industrial esplanade.” Certainly this thesis will envision more for this site.

### RiverWalk Segments 26-29 Trail Plan

The plan for Segments 26-29 are very important for this thesis, as it is a glimpse at the regional vision for this space. All of the planned use through these segments is on publicly accessible lands and road rights-of-way, and the two sites identified for potential Industrial



**Figure 13: RiverWalk Segments 26-29 Trail Plan**  
**Credit: Hudson River Trailway Plan**

Redevelopment Opportunities is the “Alexander St Waterfront Project” and the Yonkers Esplanade Park.<sup>52</sup> At the moment, Glenwood Power Plant is simply a divider between segments. The only “Hudson River Access Point” in the segment plan occurs to the north in Segment 26 just north of Greystone Station. On the power plant site, the promenade is on the water’s edge before it then weaves behind the power plant and railroad to be on its western edge moving south down Ravine Ave until becoming waterfront again along the “Alexander St Waterfront Project.” The play between waterfront and inland edges throughout the trail is an exciting design opportunity to be included in my thesis redevelopment plans for the abandoned power plant site.

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<sup>52</sup> Ibid., 68.

## The New NY Bridge

Another major regional development in addition to RiverWalk is The New NY Bridge – the bridge that is set to replace the Tappan Zee Bridge. The



**Figure 14: New NY Bridge from Hudson River**  
Credit: New York State Thruway Authority

New NY Bridge spans from Tarrytown to South Nyack, and can be seen from the Glenwood Power Plant. Plans for the new bridge were “first discussed in 1999, and over 11 years



**Figure 15: Rendering of Palisades Belvedere**  
Credit: New York State Thruway Authority

\$88 million in taxpayer dollars was spent, 430 meetings were held, 150 concepts were considered – but the project did not move forward.”<sup>53</sup> Under Governor Andrew Cuomo and support from President Obama, the project has been moving forward since October 2011 when new design-build legislation was enacted. The design process has featured an “unprecedented level of transparency and community involvement,” with comprehensive

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<sup>53</sup> "About the Project." The New NY Bridge. January 1, 2014. Accessed December 4, 2014. <http://www.newnybridge.com/>.

documentation of community meetings easily found on the project's website. The bridge is being designed and built by Tappan Zee Constructors, LLC (TZC) and will cost \$3.9 billion.<sup>54</sup>

A noteworthy design component of the bridge for the sake of this thesis are the six planned belvederes throughout the pedestrian path planned for the bridge. They are six pauses in the linear path, all themed by significant happenings related the towns surrounding the waterfront. The belvederes include:

- FISH & SHIPS – Rockland/Nyack Waterfront History
- PALISADES – Hudson Valley Rockland Geography
- PAINTERS POINT – Arts + Culture
- RIVER CROSSING – Transportation + Communication
- HALF MOON – Early History
- TIDES OF TARRYTOWN – Westchester/Tarrytown Waterfront History<sup>55</sup>

How can this thesis use design to incorporate the histories of its context the same way this bridge's design gets inspiration from its context of waterfront history? Will the regional intervention of this thesis incorporate the New NY Bridge?

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<sup>54</sup> Ibid.

<sup>55</sup> Ibid.

## **Region Summary**

Analysis at the regional scale reveals a problem that is not uncommon among riverfronts. The Hudson River was once the epicenter of everyday life, and its unique characteristics of width, tidal properties, beauty and access were recognized by Native Americans, colonial settlers, farmers, artists, and traders alike. It was then exploited by industry and transit, which valued its industrial uses for the conveniences offered by them over its previous uses. With the passage of time, the boundary between the region and Hudson River has widened. Today's statistics and developments prove that the region is in a time of reawakening – of reimagining the future of the Hudson River for generations to come.

How can we responsibly design for this shift of values? How can we reconnect the waterfront to its region? Can one site affect a region? Can a regional plan affect one site?

## Chapter 4: CITY – Yonkers, NY



**Figure 16: City of Yonkers: Figure Ground + Waterways**  
**Credit: Author, with underlay from Yonkers GIS Database**

The City of Yonkers, NY is the southernmost municipality of Westchester County. It shares its southern border with the Bronx, which is the northernmost of the five New York City Boroughs. Yonkers's eastern edge is formed by the Hudson River. This puts the city in a very interesting location contextually – a southern bookend for the county, and a northern destination from NYC.

“Yonkers ain’t what it used to be just 10 years ago when crime, poverty, failing schools, corruption, and racial discrimination were the terms most frequently seen in the headlines. If you think that’s what Yonkers is about now, wake up and smell the espresso at La Pinata—it’s changing.”  
- Dave Donelson<sup>56</sup>

This chapter will take the reader through the city’s history, as well as past, current, and future developments. The City of Yonkers is a very important city both historically and today, and this chapter intends to tell the story of how it came to its current state.

## History

### Colonial (1600-1800’s)

Yonkers’s Western European history begins in 1646, when Adriaen van der Donck from Holland asked Dutch West India Company for his own patroonship. He was granted



**Figure 17: Van der Donck colony (1646)**  
Credit: Yonkers Historical Society

the land that would become Yonkers (with the understanding that he’d purchase the land from the Native Americans). The land extended from the Hudson River to the Bronx River and from Spuyten Duyvil Creek to the Amackassin, which still act as Yonkers’s boundaries today. Van der Donck is to thank for Yonkers’s nomenclature as well. It originated from Colen-Donck

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<sup>56</sup> Donelson, Dave. "Extreme Makeover." Westchester Magazine. June 1, 2007. Accessed November 30, 2014. <http://www.westchestermagazine.com/Westchester-Magazine/June-2007/Extreme-Makeover/>.



(Donck's colony), then De Jonkheer's Land or Donckers, which the English eventually called Yonkers.<sup>57</sup>

After van der Donck's death in 1655, his wife sold the land in thirds in 1672. One of the purchasers was Frederick Philipse, and the land would remain in the Philipse family



**Figure 18: Philipse Manor Hall (1784)**  
Credit: Yonkers Historical Society

for 100 years. Philipse Manor Hall was Frederick Philipse's dwelling, and the building remains today as a historic site and museum. The land was passed down to Philipse II and Philipse III, who contributed by building a chapel and refurbishing the manor house. In 1708, during the "Philipse Period," the population of Yonkers was a mere 250 people.<sup>58</sup>

During the American Revolution, Lower Westchester became known as "neutral ground" and was a venue for several significant happenings in the war. August 16, 1776 marked America's first naval victory over the British on the Hudson River. During September and October of 1776, a horseman would ride through Yonkers carrying communications from George Washington to Fishkill.<sup>59</sup>

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<sup>57</sup> Yonkers Historical Society. "History of Yonkers." YHS. January 1, 2010. Accessed November 12, 2014. <http://www.yonkershistory.org/hiscode.html>.

<sup>58</sup> Ibid.

<sup>59</sup> Ibid.

The American Revolution almost meant a shift in organization for Yonkers, as the land was confiscated from the Philipse family by the state of New York in 1779. It was to be sold in plots not to exceed 500 acres (one farm). The same legislature also divided New York State into 16 counties at this time, one of them being Westchester. Westchester was then divided in 21 towns – one of them being Yonkers. The first census of Yonkers after these divisions was “1,125 inhabitants, including 170 slaves.”<sup>60</sup>

### **Industrial (1800-1900's)**

In 1842, the Croton Aqueduct – beginning at 40<sup>th</sup> Street + Fifth Avenue in NYC and extending 40 miles to Croton was completed. Six miles of this significant aqueduct ran through Yonkers.<sup>61</sup>

In addition to strides in water transportation, the industrial revolution meant the advent of the railroad. The New York and Harlem Railroad was running to White Plains by 1844, and by 1849 the construction of the Hudson



**Figure 19: Alexander Carpet Mills (1885)**  
Credit: Yonkers Historical Society



**Figure 20: National Sugar Refinery (1863)**  
Credit: Yonkers Historical Society

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<sup>60</sup> Ibid.

<sup>61</sup> Ibid.

River Railroad (from Spuyten Duyvil to Dobbs Ferry) was complete.<sup>62</sup>

“The owners of the land along the river front were generally hostile to this railroad. They felt that it would impair the beauty and the value of the river and that it would seriously interfere with the quiet and comfort of the residents.”<sup>63</sup>

Industries began to grow in along the railroad. In 1849, Waring Hat Factory came to Yonkers and by the end of the 19<sup>th</sup> century it was the “largest manufacturer of hats in the world.”<sup>64</sup> In 1863, a sugar factory was established on “the banks of the Hudson River south of downtown Yonkers,” and was later reorganized as the National Sugar Refinery in 1893. In 1865, Alexander Smith & Sons’ Carpet Company moved to Yonkers and became the world’s largest carpet company. Today it is designated a national historic district, and is currently the YoHo Artist Studio Building.<sup>65</sup>

Yonkers remained a town until 1855, when it became incorporated as the Village of Yonkers on April 12<sup>th</sup>. The village extended “1.7 miles along the Hudson River, with an average breadth of 0.8 miles.”<sup>66</sup> At this time the population was 7,554. In 1872 Yonkers became a city, which it remains as today. Immigrants began coming from all parts of Europe to Yonkers as laborers and industrial workers, and by 1880 the population was 18,189 people and growing.<sup>67</sup>

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<sup>62</sup> Ibid.

<sup>63</sup> Ibid.

<sup>64</sup> Ibid.

<sup>65</sup> Yonkers Historical Society. *Yonkers*. Charleston: Arcadia Pub., 2008. 91.

<sup>66</sup> Yonkers Historical Society. "History of Yonkers."

<sup>67</sup> Ibid.

## 1900's

At the dawn of the 20<sup>th</sup> century, the city had a population of 47,931 people. Electric trolleys began to replace horse cars throughout the country, and Yonkers's horse-drawn stage coach was replaced by electric trolley in 1886. Other trolley lines included:

- Along Warburton Avenue to Hastings
- From Main Street to the Moquette Mill on Nepperhan Avenue
- South Broadway to Ludlow Street
- Getty Square along Palisade Avenue
- Park Avenue + Shonnard Place to North Broadway<sup>68</sup>

In 1904, a public library was opened thanks to a gift from Andrew Carnegie and stood for 80 years. In 1908, the cornerstone of the present City Hall was laid.

For recreation, bicycles and swimming were very popular. In an "era before PCBs, when adults could swim, fish or picnic," The Corinthian,



**Figure 21: Yonkers Trolley Barn (1911)**  
Credit: Yonkers Historical Society



**Figure 22: Trolley + Train Overpass (1950's)**  
Credit: Yonkers Historical Society



**Figure 23: Corinthian Yacht Club**  
Credit: Yonkers Historical Society

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<sup>68</sup> Ibid.

Palisade, and Yonkers Yacht Clubs were prosperous organizations.

Independence Day would be celebrated with rowing, swimming, and tub races.

Water transportation continued to evolve in the 1900's, and in 1923 the Westchester Ferry Company began operation – using two side-wheel paddle boats to carry passengers and vehicles. There was ferry service to Alpine (across the river) and continued until December 1956. At this time the speed of the Tappan Zee Bridge outpaced the ferry. Likewise, the car displaced trolley transit in the 1950's and city buses replaced the electric lines. The 1900's is telling, in that the car begins to overshadow existing public transport.<sup>69</sup>

## Today

Yonkers has been undergoing a renaissance of development over the past twenty years. Since 1995, the City of Yonkers has invested in its new Riverfront Library, i.Park Hudson (24-acre technology and office campus),



**Figure 24: Panorama of Trolley Barn Lofts**  
**Credit:**

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<sup>69</sup> Ibid.

and Van der Donck Park.<sup>70</sup> Metro North invested \$43 million to renovate Yonkers's Beaux-Arts train station, and it spurred a frenzy to build in downtown Yonkers.<sup>71</sup> In 2007, the city was boasting about "\$7 billion in planned or underway projects including ritzy condos, artsy, edgy retailer shops, towering office buildings, emerald green riverfront parks, and even a revolutionary high-rise baseball stadium."<sup>72</sup> However, the economic recession halted these plans, and they have either disappeared or taken much longer to complete. This next section highlights the plans that have come to fruition in their relevance to this thesis.

### **Industrial Redevelopment in Yonkers**

Redevelopment of industrial buildings is a major trend for Yonkers redevelopment. The old downtown trolley barn was converted into a \$9 million loft-style apartment building, Alexander Carpet Mills was converted into a biotech medical research lab, and the Yonkers City Jail is being converted into an artist's residence for Daniel Wolf and architect Maya Lin.<sup>73</sup> The following quote encapsulates the spirit of redevelopment as of late:

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<sup>70</sup> Donelson, Dave. "Is Yonkers About To Experience A Giant Revival?" Westchester Magazine. January 1, 2014. Accessed December 4, 2014. <http://www.westchestermagazine.com/Westchester-Magazine/August-2014/Yonkers-Revival-Growth/>.

<sup>71</sup> Ibid.

<sup>72</sup> Donelson, Dave. "Extreme Makeover."

<sup>73</sup> Fitzsimmons, Emma. "In Yonkers, a Shuttered Jail Becomes Part of a Budding Art Scene." The New York Times. April 15, 2014. Accessed December 6, 2014. <http://www.nytimes.com/2014/04/16/nyregion/in-yonkers-a-shuttered-jail-becomes-part-of-a-budding-art-scene.html>.

“For Mr. Spano, who has been mayor since 2012, it is a triumph that the pair is investing in Yonkers, a city known more for its blue-collar industrial past and struggle over desegregation than for its art scene. The sale of the jail is part of the mayor’s ambitious plans to develop the waterfront and make it a

place where young people want to live.”

- Emma Fitzsimmons<sup>74</sup>



**Figure 25: Yonkers City Jail**  
Credit: Benjamin Normal

## Downtown Yonkers Waterfront

In June 2007, Dave Donelson wrote in Westchester Magazine:

“Are we—you, me, and all of our neighbors—ready for the rebirth of the largest city in Westchester? Can we even grasp the city’s transformation from a gritty landscape of tottering smokestacks, crumbling used-to-be mills, abandoned factories, and graffiti-clad storefronts to a bustling, thriving new river city with sleek apartment towers, hip lofts, chic boutiques, new, trend-setting restaurants and, yes, four-star chef Peter Kelly? The old river city ain’t what it used to be.”<sup>75</sup>

### Hudson Park

According to Eric Fang, Associate Principal at Perkins Eastman who worked on the master plan for downtown, the development of Hudson Park on the downtown Yonkers



**Figure 26: Aerial of Downtown Yonkers Waterfront**  
Credit: Perkins Eastman

waterfront has been ongoing since the late 1990’s. In a phone interview Eric explained that the project was planned in the late 1990’s, but wasn’t finished

<sup>74</sup> Ibid.

<sup>75</sup> Donelson, Dave. "Extreme Makeover."

until the 2000's. When asked about design challenges or guidelines, Eric told me how the bulkhead was a predicament for Perkins Eastman, and that they were designing with the 100-year flood plan and the daylighting of the Saw Mill River in mind. Perkins Eastman worked with Yonkers's planning department and fire department, New York State's Department of Conservation, and the Army Corps of Engineers during the master planning of this 16-acre mixed-use waterfront site. There was an emphasis on open spaces and an effort to "feature a series of architectural events which depict the natural, industrial, and urban history of the Nepperhan River."<sup>76</sup> This intent materialized in the form of waterfront esplanades, Main Street Square, and informal open spaces for fishing, sports, and play.

The developer for this undertaking was Collins Enterprises LLC, who completed Hudson Park in three parts: Hudson Park South, Hudson Park North, and Hudson Park (in that order). Hudson Park South was completed in 2003, and was "the first new community in over 30 years to be developed on the Hudson River in Yonkers."<sup>77</sup> Hudson Park South consists of 266 one and two bedroom rental apartments, 15,500 square feet of professional office, retail.

The second phase of the redevelopment completed in the spring of 2008 is "home to 294 one and two bedroom luxury rental apartments with

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<sup>76</sup> "Yonkers Waterfront." EE&K a Perkins Eastman Company. January 1, 2000. Accessed October 7, 2014. <http://www.eekarchitects.com/cn/portfolio/1-waterfronts/5-nyonkers-waterfront>.

<sup>77</sup> "Portfolio - Hudson Park." Collins Enterprises, LLC. Accessed December 7, 2014. <http://www.collins-llc.com/portfolio.htm>.



direct access to New York City via the Metro North Railroad and New York Water Taxi high speed ferry service.”<sup>78</sup> Hudson Park North was created with a public-private partnership with the City of Yonkers and took advantage of state tax credits available in the Brownfield’s Tax Credit Program as well as receiving tax savings through the Empire State Zone Program.

The third and final phase of the Hudson Park development “will bring to the Yonkers waterfront an additional 180 to 200 luxury apartments offering stunning views of the Palisades and the Manhattan skyline.” Construction began in 2013, and must be completed by 2017 to “take advantage of the New York State Brownfield’s Tax Credit Program which reimburses up to 20% of the construction costs of the project.”<sup>79</sup>

All phases of Hudson Park are united with the Esplanade Park, a public walkway along the waterfront edge that concludes with a sculpture park and the future Palisades Point site. Palisades



**Figure 27: Palisades Point “Progress”**  
Credit: Author



**Figure 28: Southern Industrial Bookend**  
Credit: Author

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<sup>78</sup> Ibid.

<sup>79</sup> Ibid.

Point will be two 25-story residential towers with parking, retail, and office space. When visiting the site in October, there was minimal progress made on this Fidelco Realty project.

The southern bookend of the Downtown Yonkers waterfront is an active industrial sewage treatment plant (Figure 28). Undoubtedly, there is great design opportunity in linking the downtown with the northern Glenwood Power Plant site. It could be a true transition from active industry to industrial re-use.

#### Peter Kelly's X20: Xavier's on the Hudson Restaurant

Another staple of the Yonkers Downtown Waterfront is X20, a celebrity chef's restaurant that converted the one hundred year old Yonkers Municipal Pier into a fine dining establishment. This is a successful example of adaptive reuse in Yonkers. The pier is divided sectionally between public and private, as the ground level remains an open-air river outlook space, and the upper level offers panoramic views for X20 diners. Perhaps the same kind of division of program could be considered at the Glenwood Power Plant.



**Figure 29: Yonkers Municipal Pier**  
Credit: City of Yonkers

## Water Taxi Terminal

The completion of the Hudson Park South also signaled the opening of a water taxi terminal on the waterfront in 2004. It was to provide commuter ferry service between Manhattan and Yonkers via New York Water Taxi. As a diagram, a water taxi terminal in this master plan should have been a positive generator for an alternative form of transportation into the city. Unfortunately, reality didn't prove as beneficial. In 2009 the terminal was shut down, having "burned through all of the subsidies provided by federal and state agencies."<sup>80</sup> This was a disappointment to officials who worked hard to make this happen. The space is now used for performances (Figure 31) and the structure acts as a reminder of what could have been. The existing infrastructure of this water taxi terminal creates opportunities to imagine a water taxi network carrying passengers northbound into Westchester County.



**Figure 30: Former Water Taxi Terminal**  
Credit: Author



**Figure 31: New Use for Water Taxi Terminal**  
Credit: City of Yonkers

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<sup>80</sup> Mcgeehan, Patrick. "Ferry Between Manhattan and Yonkers Is Set to Stop." The New York Times. December 23, 2009. Accessed October 4, 2014. <http://www.nytimes.com/2009/12/24/nyregion/24ferry.html>.

## Saw Mill River Daylighting – Van der Donck Park

In 1917, a subterranean flume was constructed in Yonkers beginning at “Chicken Island”—a municipal parking lot off Getty Square—with the final phase in Larkin Plaza completed

in 1922, banishing the Saw Mill River from the light for a half-mile

underneath Getty Square, North Broadway and Larkin Plaza. After going through the flume, the Saw Mill River empties unceremoniously into the Hudson River immediately north of the Yonkers Recreation Pier.<sup>81</sup>



**Figure 32: Subterranean Saw Mill River Flume**  
Credit: Daylight Yonkers

In 2010, the City of Yonkers broke ground on Van der Donck Park, a “daylighted river park,” that has replaced the parking lot.<sup>82</sup> The park is bordered by Dock Street and Nepperhan Street to the north and south, and Larkin Plaza and the Yonkers train station to the east and west. Van der Donck Park is a fluid plan with variously scaled spaces for an experiential walk along the daylighted river.

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<sup>81</sup> "Daylighting Facts." Daylight Yonkers. January 1, 2014. Accessed December 8, 2014.

<sup>82</sup> Ibid.



Riverfront Library at the park's southern corners. It is a north-south spine that connects Larkin Plaza to the train station, and can act as a catalyst for redevelopment of the adjacent buildings. To my surprise, several of the buildings bordering the park were vacant and run-down (Figures 34-35). I think that if the urban edge can be reactivated along this park it can become an even more successful urban space.



## Alexander Street Master Plan

The Alexander Street Master Plan is most pertinent to the urban scale of this thesis. It was published by the City of Yonkers in November 2007 with the intention of being a “conceptual land use plan that establishes a framework for redevelopment.”<sup>83</sup> It is designated as an Urban Renewal Area (URA) and encompasses 112 acres of waterfront property. The Glenwood Power Plant is included in the defined area, which cuts off just before the downtown waterfront development to the south. The goals of the plan are as follows:

1. Economic Development
2. Expand Housing Opportunities
3. Improved Public Access to the Hudson River + Improved Internal Transportation
4. Focus on Regional Transportation
5. Capitalized on important site features + heritage building <sup>84</sup>

<sup>83</sup> "Alexander Street Master Plan." City of Yonkers. November 1, 2007. Accessed December 13, 2014. <http://www.cityofyonkers.com/home/showdocument?id=2189>.

<sup>84</sup> Ibid.

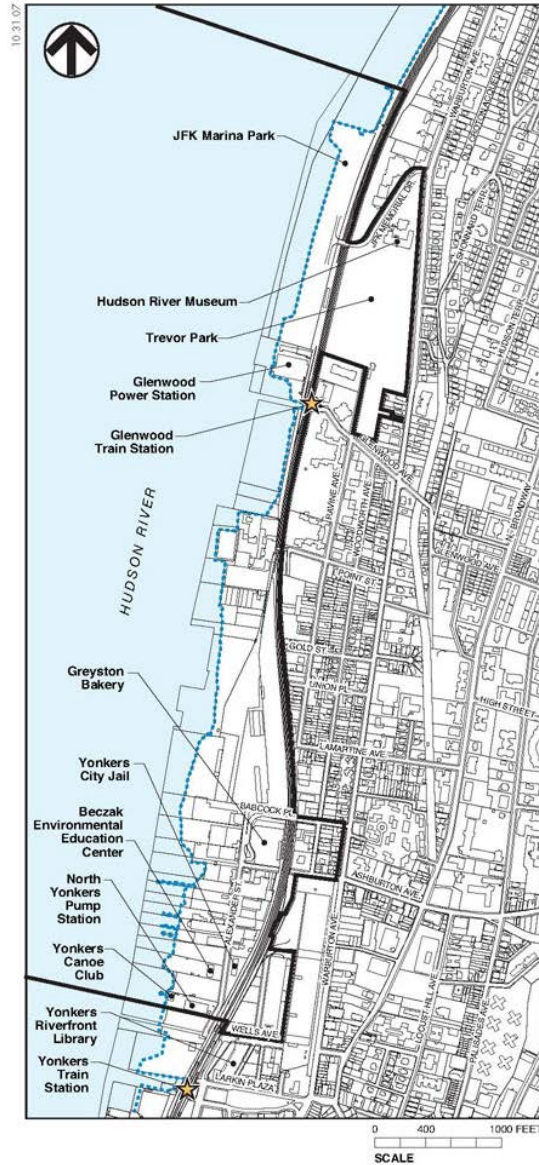


Figure 2-2  
Important Master Plan Area Features

Figure 37: Master Plan Area Features  
Credit: City of Yonkers

The “Important Master Plan Area Features” image identifies the existing “places” within the Alexander Street URA. There are a few remaining industrial uses, a lot of open parking lots, and empty brownfields toward the northern half of the site.

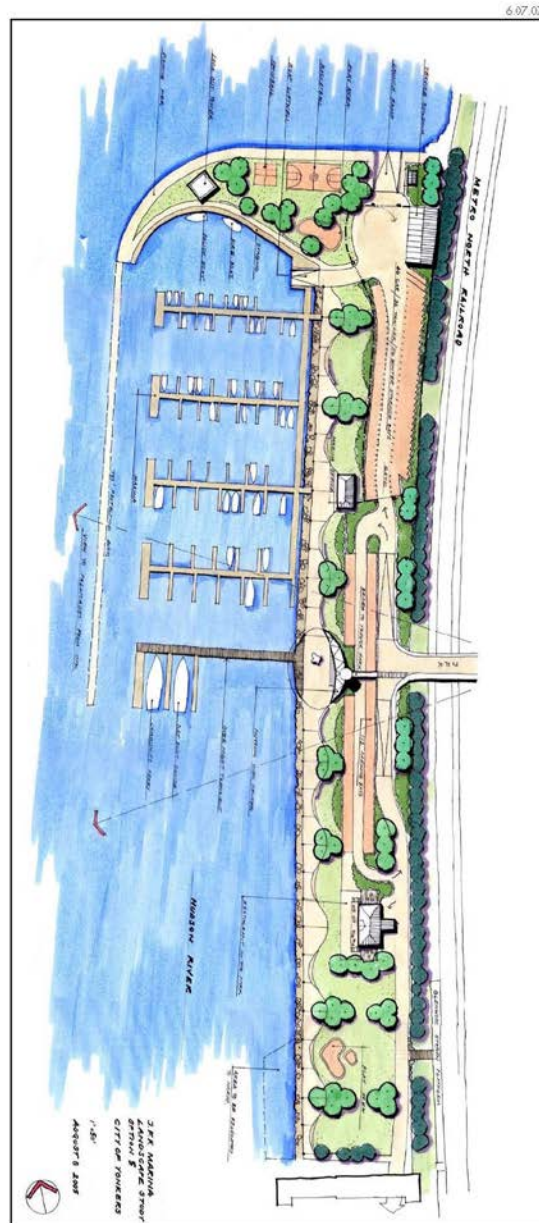
The proposal calls for residential and retail space, as well as a waterfront esplanade and landscaping. The plans on the following pages detail the overall proposal, as well as the recommended intervention for the JFK Marina.



**Figure 38: Conceptual Land Use Plan**  
**Credit: City of Yonkers**



While Yonkers development seemed to be booming in 2007, the recession in 2008 drastically affected the progress of these plans. In conversations with Lee Ellman he explained that these plans were made with little regard for property lines or investors. Seven years later, there are no developers executing this master plan nor any construction in the Alexander Street URA. I believe that this thesis can make a realistic proposal for this area, and learn from the oversights of this initial master plan.



**Figure 39: JFK Marina Landscape Plan**  
Credit: City of Yonkers

## Demographics + Statistics

Demographics and statistics help provide a base understanding for the scale of a city. Yonkers became a city in 1872, and has a total area of 20.3 square miles. It is bordered to the north by Hastings on Hudson and Greenburgh, to the west by Eastchester, Tuckahoe and Mount Vernon, and to the south by the Bronx. Yonkers's eastern border is the Hudson River. The other major waterway that helps shape Yonkers is the Saw Mill River (formerly known as the Nepperhan River).

Yonkers is the fourth most populous city in New York, and the most populous city in Westchester County. It boasts a population of 195,176 people after the 2010 census. In 2010, the population density was 10,827.4 people per square mile, and there were 80,839 housing units at an average density of 4,466.2 per square mile. The racial makeup of the city was 55.8% White, 34.7% Hispanic or Latino, 18.7% African American, 0.7% Native American, 5.9% Asian, 0.1% Pacific Islander, 14.7% from other races, and 4.1% from two or more races.<sup>85</sup> Yonkers has been and remains a melting pot of different nationalities and races throughout its history, which makes for a diverse and rich culture.

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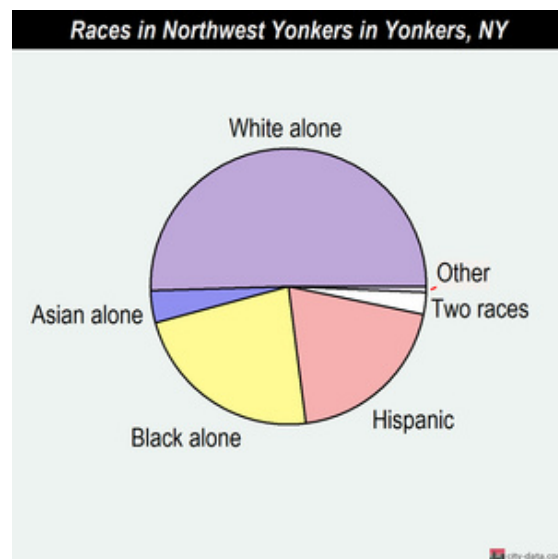
<sup>85</sup> "Yonkers, New York." Wikipedia. Accessed December 10, 2014. [http://en.wikipedia.org/wiki/Yonkers,\\_New\\_York](http://en.wikipedia.org/wiki/Yonkers,_New_York).

Yonkers is divided into sixteen neighborhoods: Bryn Mawr, Colonial Heights, Crestwood, Dunwoodie, Getty Square, Homefield, Lincoln Park, Ludlow, Nepera Park, Nodine Hill, Northeast Yonkers, Northwest Yonkers, Park Hill, Rynyon Heights, Southeast Yonkers, and Southwest.<sup>86</sup> For this thesis, Northwest Yonkers, Getty Square, and Ludlow are most relevant as they make up the Yonkers waterfront.

The Glenwood Power Plant site falls in the Northwest Yonkers neighborhood, so a thorough analysis of this neighborhood's demographics can help in understanding the community at hand. Northwest Yonkers is 6.2

square miles with a population of 57,473 people. Per Figure 40, the

neighborhood's racial makeup is approximately 50% white, 20% black, 20% Hispanic, and 10% Asian and other races.<sup>87</sup> The median age is 35 (comparable with the whole city) and the median household income in 2011 was \$66,625 compared to Yonkers's city-wide median of \$50,650.<sup>88</sup> The



**Figure 40: Races in Northwest Yonkers**  
Credit: City-Data

<sup>86</sup> "Yonkers, New York." City-Data. Accessed December 3, 2014. <http://www.city-data.com/city/Yonkers-New-York.html>.

<sup>87</sup> Ibid.

<sup>88</sup> Ibid.

majority of houses in both Northwest Yonkers and Yonkers were built in 1939 or earlier. This is truly a city with a remnant historical footprint.

## **City Summary**

This chapter provides a basic understanding of how the complex City of Yonkers took shape. Transportation and technology seem to have shaped this city into what it is today. First by the colonials sailing up river, then the advent of the steamboat, then an efficient trolley and train network, and finally the car. Yonkers's "waterfront renaissance" is almost as if the city is returning to its roots. Van der Donck Park has uncovered the Saw Mill River that used to be the spine of the city, and projects like Hudson Park and the proposed Alexander Street master plan are reclaiming the Hudson River waterfront as a place to live and consume, rather than a place for production. The city exudes much opportunity for reconnection and improved accessibility to the waterfront. How can the design of one strip of waterfront impact an entire city? How does one design for the diversity of types of people and needs in a city?

## Chapter 5: SITE – Glenwood Power Plant Adjacencies

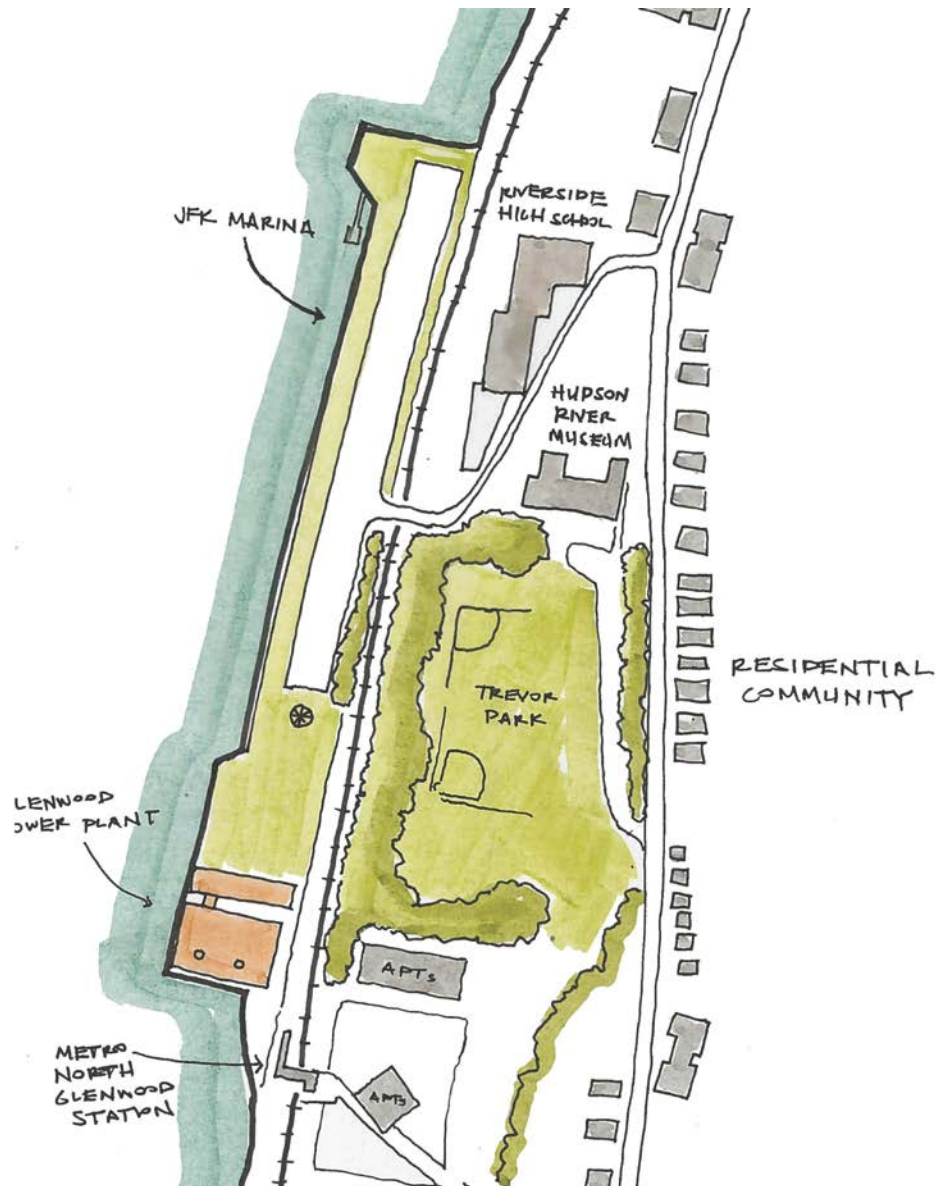


Figure 41: Site Places Diagram  
Credit: Author

A thorough understanding of a building calls for a complete understanding of its adjoining sites. This chapter will explain the growth of the surrounding context over time – both before and after the Glenwood Power Plant's construction.

## Context Growth

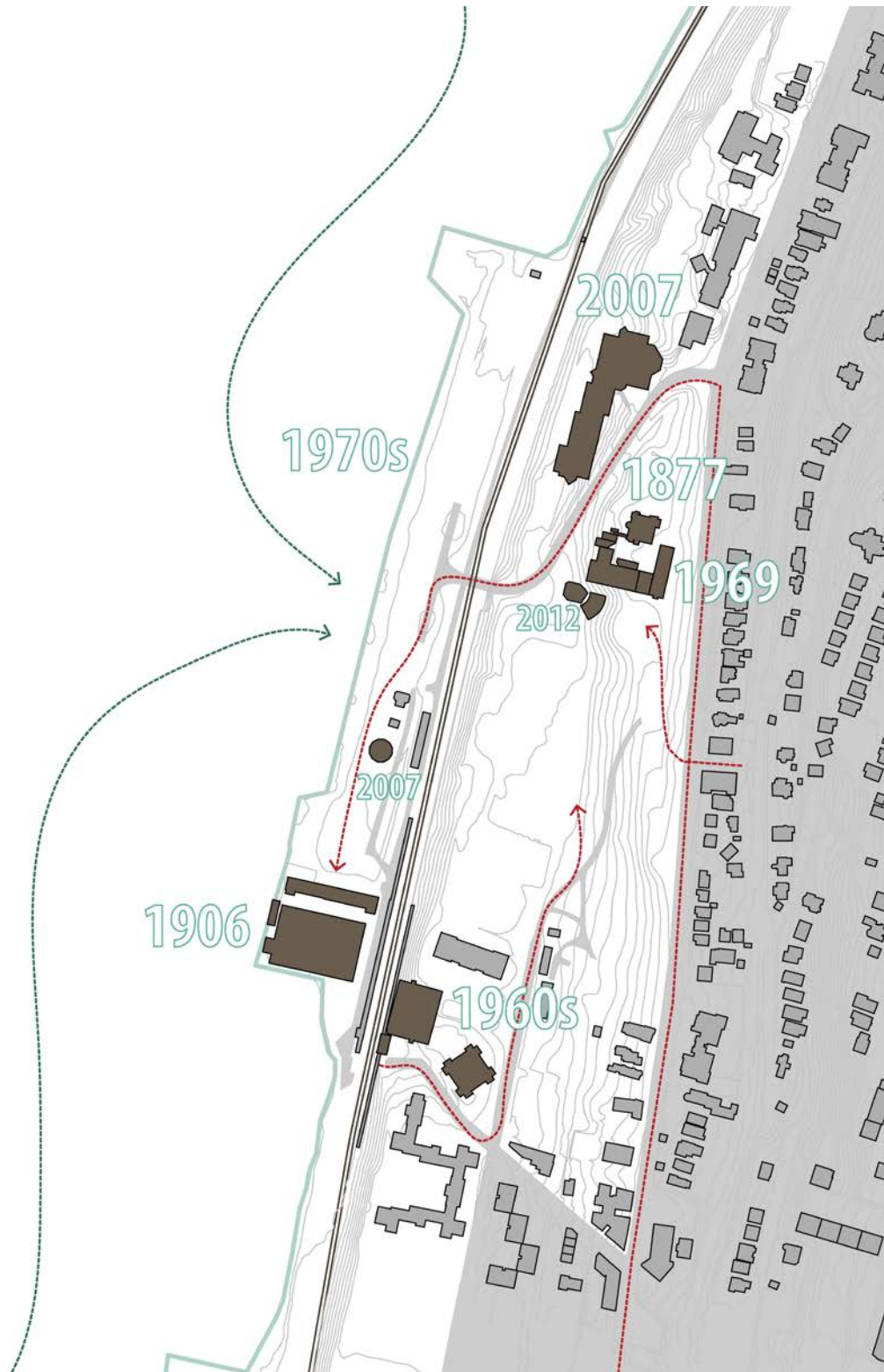
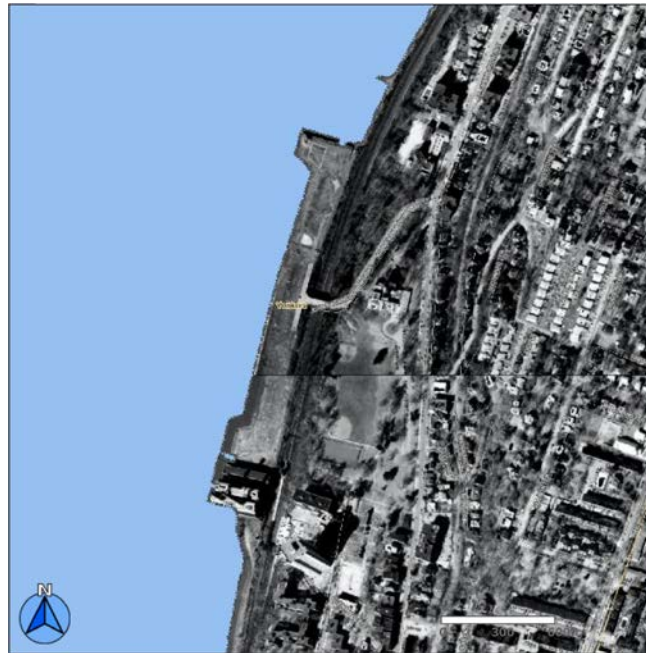
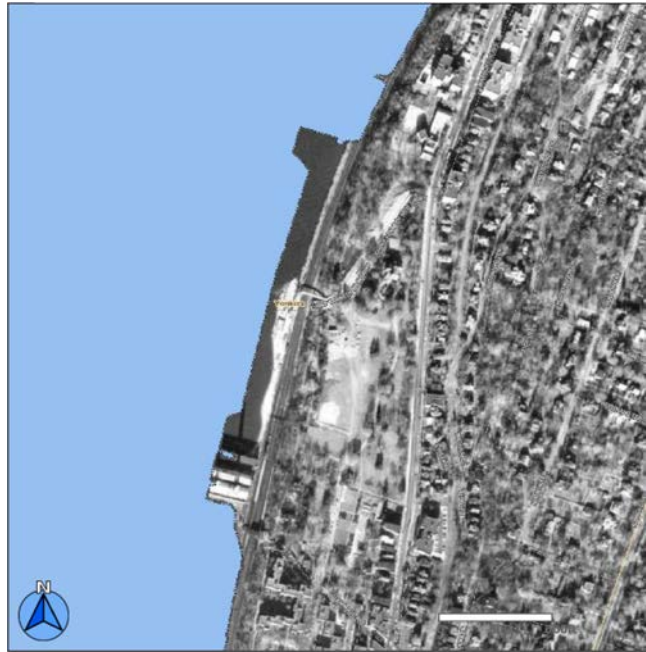


Figure 42: Site Growth + Flows Diagram  
Credit: Author

## JFK Marina

The JFK Marina is a sixteen acre, city owned, park directly north of the power plant. It has a boat launch, docking facilities, and fishing and crabbing access.<sup>89</sup> Based on historical satellite information from the Yonkers GIS database, it appears as though the marina was built in the 1970's (Figure 43). Today, the marina has an access bridge that spans over the Metro North Railroad, ample parking, a gazebo, and storage facilities. There is grass, but minimal landscaping. It is reasonable for a visitor to misinterpret the site boundaries between the



**Figure 43: JFK Marina Growth (1960 + 1976)**  
Credit: Yonkers GIS Database

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<sup>89</sup> Columbia University Graduate School of Architecture, Planning, and Preservation. "(RE)Power: A Sustainable Redevelopment Proposal for the City of Yonkers." February 22, 2011. Accessed October 11, 2014.

power plant and JFK Marina, because they share the same wharf built out from the railroad.

According to Yonkers Planning Director, Lee Ellman, the marina was created by “incinerator ash that was built up over time.” While I am still researching this claim, it has important implications for the environmental goals of this thesis. Lee Ellman also explained that the marina is used by the community, but not as often as it could be as he believes it is on the “wrong side of the current.” Ellman went on to explain that jet skis and kayaks are popular here because this recreational use of the Hudson River isn’t allowed everywhere in the county. Most recently in 2013, the City of Yonkers spent 1.8 million dollars on “restoring the shoreline and building a new fishing pier.”<sup>90</sup> Surely, JFK Marina is a potential amenity for the Glenwood Power Plant. How might its uses be incorporated into the uses of the power plant?

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<sup>90</sup> "New Fishing Pier Built at JFK Marina in Yonkers Receives Mixed Emotions." News 12 Westchester. August 30, 2013. Accessed December 1, 2014. <http://westchester.news12.com/news/new-fishing-pier-built-at-jfk-marina-in-yonkers-receives-mixed-emotions-1.5985337>.



## Trevor Park

Similar to JFK Marina, Trevor Park is a seventeen acre, city-owned, public park that serves the local residential community. The



**Figure 44: Trevor Park Amphitheater**  
**Credit: Hudson River Museum**

park has recreational space, two baseball diamonds, and

a tennis court. It was established in the 1920's when the City of Yonkers purchased the Glenview Mansion that was to become the Hudson River Museum. Most recently, the Trevor Park Amphitheater was built (2011-12). This 7.5 million dollar, 450 seat performance space houses performances year round, and in the future the RiverWalk trail plans to connect to this space.<sup>91</sup> With views of the Hudson River and the Palisades Cliffs, and connections to the Hudson River Museum and JFK Marina, this park is truly an amenity for the community and the power plant's site.

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<sup>91</sup> Garcia, Ernie. "Amphitheater at Yonkers' Trevor Park Holds Groundbreaking." The Journal News. July 15, 2011. Accessed December 8, 2014. <http://archive.lohud.com/article/20110715/NEWS02/107150323/Amphitheater-Yonkers-Trevor-Park-holds-groundbreaking>.

## Hudson River Museum

The Hudson River Museum is the largest museum in Westchester County.<sup>92</sup> Founded as the Yonkers Museum in 1919, the museum was dubbed the Hudson River Museum in 1948. Its collection



**Figure 45: Hudson River Museum Entrance**  
Credit: Hudson River Museum

includes works from the Hudson River School of painters, a planetarium, and exhibits about the history of the region. When the museum was relocated to its Trevor Park location, the exhibits were housed in the Glenview Mansion (built in 1877). In 1969, the museum added the modern addition that acts as the emblem for the museum today.<sup>93</sup> For a thesis that emphasizes the importance of a waterfront's history, it is fortunate that a building devoted to its heritage is within walking distance of its site.

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<sup>92</sup> "Hudson River Museum." Wikipedia. Accessed December 12, 2014. [http://en.wikipedia.org/wiki/Hudson\\_River\\_Museum](http://en.wikipedia.org/wiki/Hudson_River_Museum).

<sup>93</sup> Ibid.

## Glenwood Train Station + Metro North Railroad

The Hudson Line of the Metro North Railroad was built by the Hudson River Railroad in 1851 and is an at-grade railroad. While information for Glenwood Train Station's construction is not



**Figure 46: Glenwood Train Station**  
Credit: Daniel Case

available, two of Yonkers's other stations, Greystone and Yonkers,

were built in 1899 and 1911, respectively. Therefore, one can assume that the Glenwood station was built in that time frame, which is just about the time the power plant was constructed. The station is present on the earliest satellite imagery from 1947. Glenwood passengers can take trains northward to Poughkeepsie or southward to Grand Central Terminal in Manhattan. The station is open seven days a week and it is only a 35 minute ride (15.5 miles) to Grand Central Terminal.<sup>94</sup> The Hudson Line is viable for commuters going to Manhattan as well as Upper Westchester. My experiences when visiting the site is that the station is generally underused compared to the Yonkers train station. The station has a small vestibule with stairs leading up to a bridge that spans the tracks. There are platforms both west and east of the

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<sup>94</sup> "Hudson River Museum." Wikipedia. Accessed December 12, 2014. [http://en.wikipedia.org/wiki/Glenwood\\_%28Metro-North\\_station%29](http://en.wikipedia.org/wiki/Glenwood_%28Metro-North_station%29)

train tracks. The Glenwood Train Station's platforms are within fifteen feet of the Glenwood Power Plant, offering astounding views of its magnificent structure. How can the reuse of the power plant take advantage of its proximity to transit?

### **Riverside High School**

Riverside High School is located to the northwest of the power plant. It is accessed by the same road that one takes to access the marina. This public school for grades 9-12 was built in 2007. It focuses on being "environmentally friendly."<sup>95</sup> Its full name is Riverside High School for Engineering and Design. Course offerings include Environmental Engineering & Design, Graphic Production, and Environmental Sciences.<sup>96</sup> With 972 students currently enrolled,<sup>97</sup> Riverside High School offers a population of environmentally motivated youth in walking distance of the power plant. In a city where educational attainment is relatively low, how can this concentration of sustainably-minded thinkers inform the program of the Glenwood Power Plant?

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<sup>95</sup> "Riverside High School for Engineering and Design." Wikipedia. Accessed December 12, 2014. [http://en.wikipedia.org/wiki/Riverside\\_High\\_School\\_for\\_Engineering\\_and\\_Design](http://en.wikipedia.org/wiki/Riverside_High_School_for_Engineering_and_Design)

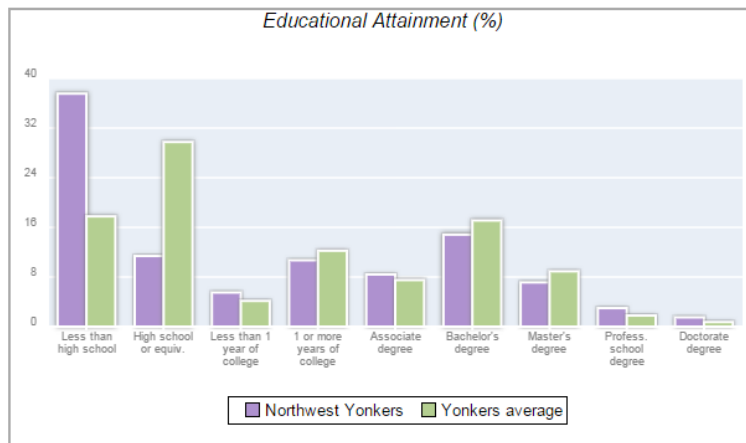
<sup>96</sup> "Riverside High School." Yonkers Public Schools | A Vibrant Community of Learners. Accessed December 13, 2014. <http://www.yonkerspublicschools.org/schools-riversidehs.php>.

<sup>97</sup> "Riverside High School." Great Schools. Accessed December 13, 2014. <http://www.greatschools.org/new-york/yonkers/4144-Riverside-High-School/>.

## Residential Neighborhood

The power plant's surrounding context is like the layers of an onion – multi-layered. First the wharf, then the rail line, Trevor Park and the Hudson River Museum, and finally the outer layer of residences. The residential neighborhood in this area is largely detached single family homes. The neighborhood is

referred to as Northwest Yonkers in census and demographical data. Realtor.com and city-data.com



**Figure 47: Educational Attainment (NW Yonkers vs. Yonkers)**  
Credit: City-Data

provide very telling

statistics about the neighborhood as seen in the upcoming figures. Northwest Yonkers is comparatively less educated than the rest of the city. Most occupations of both male and females are service and sales/office jobs.<sup>98</sup>

Within 0.5 miles of the Glenwood station, there are 1.03 jobs per acre compared to a population of 38.21 people per acre.<sup>99</sup> An interpretation of this data reveals that there is a need for education and job creation in this neighborhood. In addition to detached homes, there are three high-rise

<sup>98</sup> "Yonkers, New York." City-Data.

<sup>99</sup> Columbia University Graduate School of Architecture, Planning, and Preservation. "(RE)Power: A Sustainable Redevelopment Proposal for the City of Yonkers."

apartment buildings immediately adjacent to the Glenwood Train Station. Lee Ellman believes these were built in the 1960's. This neighborhood is an active community, with relevant organizations including the Hudson River Community Association of Northwest Yonkers Inc., Preservation and Development Corporation of North Yonkers, and the **Nepperhan Community Center**. These are not for profit organizations that aim to hear and serve the needs of the community. How can this community's needs be engaged with the design of the power plant?

## **Site Challenges as Opportunities**

The adjacencies to the Glenwood Power Plant have many challenges as well as opportunities. These come in the form of topography, boundaries, and community and will be explained below.

### **Topography**

Access to the various amenities in the vicinity of the Glenwood Power Plant is significantly affected by the topography. Trevor Park's elevation is forty feet higher than the Glenwood Power Plant's elevation. Likewise, the platform for Glenwood's Train Station is ten feet above grade. The surrounding residential neighborhood is also very hilly. While traveling down Glenwood Avenue to approach the train station there is a ten foot drop in elevation. These significant grade changes should be seen as design opportunities. It allows for potential connections from the park to the upper

levels of the power plant. The topography could also be an advantage in that it can direct storm water runoff and meet other sustainable design challenges.

## **Boundaries**

The topography of the site contributes to the many boundaries throughout the site. The most significant divide is the railroad. Since it is built at grade, the rail limits permeability to the Hudson River waterfront. The only opportunity to access the power plant and marina from east of the tracks is a road that passes over the railroad tracks at the north end of the site. Therefore, even though the train platform and Trevor Park are located within a few feet of the power plant, one would have to walk up, around, and down to access the power plant (Figure 42).

Another site boundary is created between public and private ownership. The Glenwood Power Plant is privately owned, while Trevor Park and JFK Marina are owned by the City of Yonkers as part of a public trust. Metro North Railroad is run by the state-wide Metropolitan Transportation Authority (MTA). How can these various stakeholders work together to create a harmonious design solution for all?

A final divide of this site is that between land and water. The edge between marina and the Hudson River are hard and well-defined. How can

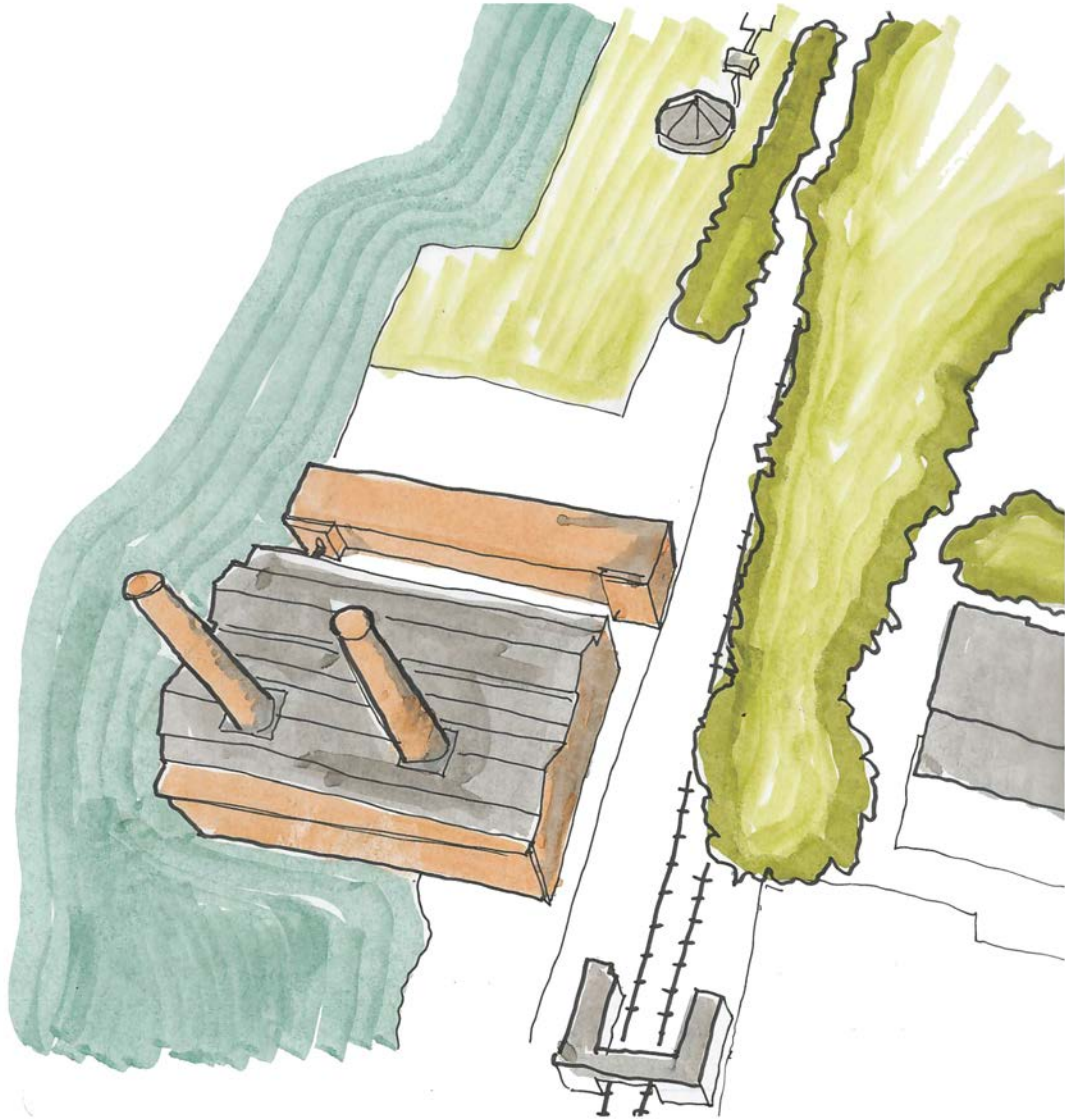
the design of the power plant incorporate softer edges that create more of a threshold between building, land, and water?

## **Site Summary**

The stance of the author is that good design comes from specificity of place. The immediate context of this site provides perspectives on what this power plant can become. The park amenities are natural landscapes that can be incorporated into the site design. The Hudson River Museum is a historical institution that embodies the spirit of the region, city, and site. The railroad is a thriving form of transportation that can be the basis for development around it. The high school represents a population of sustainably minded thinkers than can benefit from interventions at the power plant site. Lastly, the community is passionate, involved, and has needs that can be addressed in the program and design of the power plant. The narrative of the immediate site, along with its city and region, can truly inform the architectural solution for the Glenwood Power Plant.



## Chapter 6: BUILDING – Glenwood Power Plant



**Figure 48: Glenwood Power Plant Aerial Diagram**  
Credit: Author

The Glenwood Power Plant (also known as the Yonkers Power Station) is an emblem of the Yonkers waterfront. Its rich brick elevation, large windows, and two iconic smoke stacks are well known by Yonkers residents. Looking east from the power plant are uninterrupted views of the Hudson River and Palisades cliffs. The power plant is a symbol of both past and present. It represents past technologies and approaches to building on the water. It also embodies the current climate of adaptive reuse and waterfront revitalization in this proposal to repurpose the building. This chapter will provide the building's architectural description, history, and physical condition today.

“Photos can’t capture the jaw-dropping proportions of the place.  
 Walls reduced to rubble on the southern half of the generator building.  
 Locks were the only hint at a human presence.  
 The switchboard gallery overlooked the turbine room.  
 You’re off the train, but you’ve still gotta Watch the Gap on these staircases.  
 The basement room had the deepest water, anyone for a swim?  
 Continuing down the hallway. On the lower right, you can see  
 a metal barrel that’s almost completely rusted through.  
 Turning a corner into a darkened vault, a row of valves.  
 A bicycle wheel round in the deepest recesses of the powerhouse.  
 The mud was thickest here.  
 Not much to see in the site’s smaller substation building...  
 ...though this floor was still filled with materials.  
 A view of the substation and the generating building’s iconic smokestacks.”  
 -Abandoned NYC<sup>100</sup>

**Architectural Description**

The Glenwood Power  
 Plant’s impressive scale is  
 visible both inside and out,  
 and has been photographed  
 and written about by many.  
 The power plant is made up  
 of two buildings – a smaller  
 substation and transformer  
 building, and the larger main



**Figure 49: Glenwood Power Plant from the Hudson River**  
 Credit: Jag9889 (Flickr)

generating building.<sup>101</sup> They are forty feet apart. Both buildings are four  
 stories but of different heights (about 80 feet and 120 feet respectively). The

<sup>100</sup> Ellis, Will. "The Yonkers Power Station, Knocking at the "Gates of Hell"" Abandoned NYC. August 28, 2012. Accessed October 13, 2014. <http://abandonednyc.com/2012/08/28/knocking-at-the-gates-of-hell-in-yonkers/>.

<sup>101</sup> Yasinsac, Rob. "Yonkers Power Station." Hudson Valley Ruins. Accessed September 1, 2014. <http://www.hudsonvalleyruins.org/yasinsac/glenwood/glenwood.html>.

smaller substation building has 14,400 square feet per floor, whereas the main building has 37,950 square feet per floor.<sup>102</sup>

The main generating building is split into two sections that culminate in two bays of monitor roofs. The northern bay is the turbine room, a “cavernous hall, open



**Figure 50: Interior of Turbine Hall**  
Credit: Will Ellis

in the middle, surrounded by walkways with light filtering in from the roof above.”<sup>103</sup> There are staircases and walkways that connect the two sides. Furthermore, an open air walkway traverses the space between the generating and substation buildings on the second floor.

The southern half of the generating building houses the boiler chambers:

“The room is split in two halves, with an aisle leading to a view of the Hudson River, directly opposite the Palisades. On either side of the aisle are individual chambers, the walls of which have collapsed into large piles of brick. Small rooms at the east end were offices and bathrooms. The smokestacks and coal bins are supported well above the ground.”<sup>104</sup>

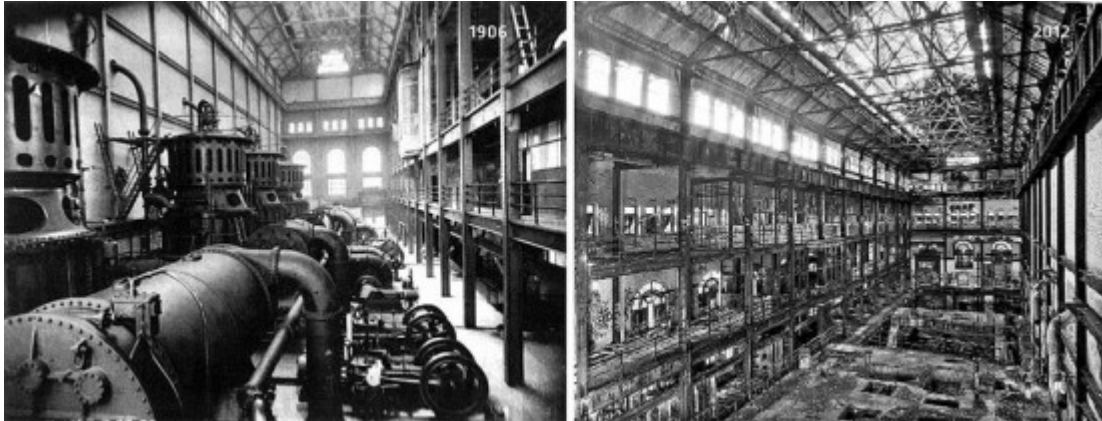
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<sup>102</sup> Columbia University Graduate School of Architecture, Planning, and Preservation. “(RE)Power: A Sustainable Redevelopment Proposal for the City of Yonkers.”

<sup>103</sup> Yasinsac, Rob. “Yonkers Power Station.”

<sup>104</sup> Ibid.

The smokestacks rest on top of this southern most bay, and have an elevation of 220 feet at their peaks. They are fifteen feet in diameter, and are ringed with circular metal tie rods.



**Figure 51: Boiler Room (Active vs. Abandoned)**  
Credit: Urban Archaeology (Flickr)

The buildings are framed in steel and clad in brick, with tall arched windows. Its exterior is very similar to Grand Central Terminal, but it differs greatly on its interior, where it is a skeletal industrial structure. The openings from the arched windows and monitor roofs make for great daylighting. This is truly an architectural relic to be cherished.

## History

### Construction + Operation

The Glenwood Power Plant was built between 1904 and 1906 as part of the “electrification of the railroad.”<sup>105</sup> It was spurred by the dangerous conditions of steam engines and the need for a larger Grand Central Terminal. The Glenwood Power Plant was designed by the firm Reed & Stem, the same designers who did Grand Central Terminal just a few years earlier, and its power plant counterpart, the Port Morris Power Station at the same time. These three projects were commissioned by the New York Central Railroad, and are important examples of early 20<sup>th</sup> century engineering. Between 1907 and 1936, the New York Central Railroad was the owner and operator of the power plant, which operated solely to power the railroad.

### Con Edison

In 1936, the power plant was sold to Edison Light and Electric, a subsidiary on Con Edison.<sup>106</sup> At this time the power station became a “public

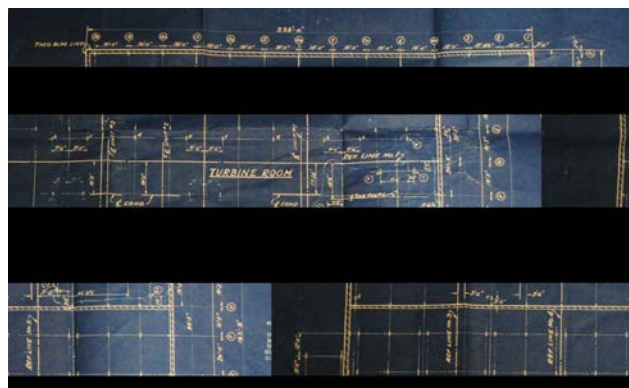


Figure 52: Power Plant Blue Prints  
Credit: Author (photographing plans)

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<sup>105</sup> Ibid.

<sup>106</sup> Ibid.

utility and [was] converted entirely to oil fuel,” and the New York Central Railroad purchased its energy.<sup>107</sup> In 1950, the power plant had “capacity sufficient to care for the needs of a considerable part of the county.”<sup>108</sup>

During its ownership period, Con Edison updated the building’s structure. After visiting the city’s building department, I was able to get the blue prints from these alterations and inspections.

### **Abandonment + Preservation**

After being put on standby in the 1950’s, the power plant was ultimately shut down in 1963. In 1965, most of the machinery was sold to the Independent Scrap Iron & Steel Co. of Brooklyn. In 1978 Con Edison sold the power to a private party, and the building has been vacant ever since. Kenneth Capellino was the property owner up until 2012, and various plans and development have tried and failed for the power plant over the years. In December 2012, the Glenwood Power Plant was purchased by developer Lela Goren of Goren Group with plans for rehabilitation of the building. Goren’s proposal will be further explained in the “Today” subsection of this chapter.

Despite its historical significance, the Glenwood Power Plant is not on the National Register of Historic Places nor is it a designated local landmark.

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<sup>107</sup> "Glenwood/Yonkers Power Station Rehabilitation Project." The Plant. Accessed November 7, 2014. <http://theplant.com/overview/>.

<sup>108</sup> Yasinsac, Rob. "Yonkers Power Station."

The building's application for Local Landmark Designation has been pending since 2005. One positive designation was made by the Preservation League of New York State. The organization named the power plant on its annual list of "Seven Most Endangered Places." Where the Hudson River once "delivered raw materials to the powerhouse, its waters now collect in stagnant pools at the lowest levels," and rust has consumed the building both inside and out.<sup>109</sup> This building's revival has been long awaited, and its historical connection to industry, waterfront construction, and abandonment align with the goals of this thesis.

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<sup>109</sup> Ellis, Will. "The Yonkers Power Station, Knocking at the "Gates of Hell" Abandoned NYC

## Today

There are two hats to be worn for the power plant's current state. To understand the present situation one must learn about both architectural proposals and its informal use throughout its abandonment. Both hats are rich with information, and valid for informing this thesis.

## Urban Exploration

As a well-known symbol for Yonkers, it comes as no surprise that visitors have gotten curious about the buildings' interiors. Since the 1970's, the power plant has become a destination for urban exploration. Urban exploration (often shortened to UE) is the "exploration of man-made structure, usually abandoned ruins or not usually seen components of the man-made environment." There are YouTube videos as far back as 1977 documenting the power plant's interiors. Another video from as recent as 2012 features three teens that hop off the Glenwood platform and proceed to ascend to the top floor of the building. One most notable "urban explorer" is Rob Yasinsac, author of Hudson Valley Ruins: Forgotten Landmarks of an American Landscape. An entire chapter of the book is devoted to the power plant, with images from the exterior, interior, and views from the water. His research and documentation of the building has been influential in inspiring this thesis.

Other informal uses for the building discovered via YouTube include documentaries, a backdrop for a music video, and a playground for parkour



“obstacle passing.” Unfortunately, the informal uses of the power plant aren’t all so positive. The following section describes the negative side of abandonment.

### **Gates of Hell**

In 2008, Jim Bostic of Yonkers Gang Prevention Coalition and councilwoman Patricia McDow alleged that the building was the site of “brutal gang initiations, involving some 300 individuals at a time, where savage beatings and sexual deviancy took place on a shocking scale.”<sup>110</sup> This claim called for the immediate demolition of the building that had come to be known as the “Gates of Hell.” Fortunately, no evidence surfaced nor witnesses stepped forward to affirm these accusations. In accordance with this rumored deviance, the walls of the power plant are covered by graffiti. The work of local artists act as a truly beautiful collage of the building’s new informality. The current developer has chosen to leave certain pieces of graffiti unharmed.

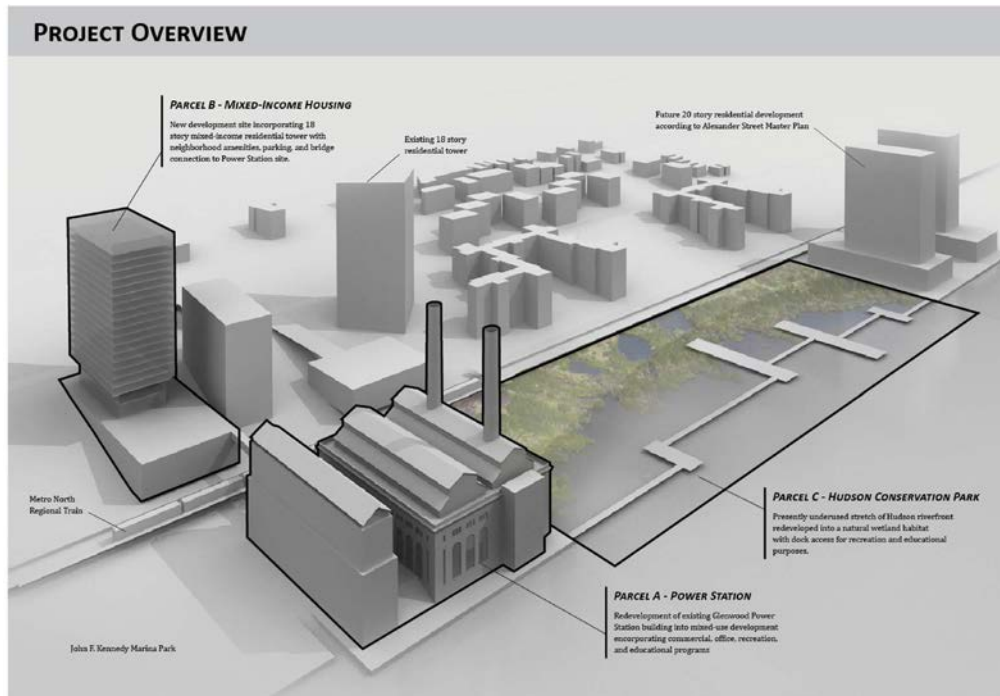
### **(RE) Power – A Sustainable Redevelopment Proposal**

In 2011, Columbia University’s Graduate School of Architecture, Planning, and Preservation prepared a comprehensive proposal for the power plant and adjacent waterfront. Lee Ellman gave me a copy of this report, and it has been a helpful reference throughout this process. The proposal was more real estate development than architecturally minded, and used the site’s

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<sup>110</sup> Ibid.

narrative to inform the program. The report touches on the Hudson River's unique ecology, brownfield remediation, housing, education, job creation, and transit oriented development (TOD) potential.



**Figure 53: (RE) Power Proposal for Glenwood**  
Credit: Columbia University School of Architecture, Planning, and Preservation

The proposal includes the re-use of the power plant, a re-thinking of the Alexander Street master plan, a conservation park, and a new residential tower. The proposed program for the power plant is “Sustainable Industries Incubator, Retail, and Offices.” It also proposes the construction of an additional three floors on top of the smaller building. The proposal features creative sectional solutions that can help inform my design approach.

## The PowerHouse - Goren Group Development

After purchasing the power plant in 2012, Lela Goren created grand plans for this abandoned relic. Ms. Goren is proposing a multi-phase, 150 million dollar project that creates an “arts-focused event complex with eventual plans for restaurants, a convention center, hotel, and marina.”<sup>111</sup> Developed in phases, the \$70 million first phase to clean the site began in 2013 and should be complete in 2016. When visiting in October 2014, no workers were to be seen, but there were clearly marked “private property” signs everywhere.



Figure 54: Rendering for the proposed PowerHouse development  
Credit: Goren Group

Speaking with Lee Ellman  
about this development has provided

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<sup>111</sup> Hughes, CJ. "Converting a Run-Down Power Plant" November 12, 2014.



Figure 55: “Leave Trevor Park Alone”  
Credit: Matt Bultman

valuable insights about the actual progress of this project. In multiple conversations he has told me that plans have yet to be filed with the Building Department. He also elaborated on some ways that the development has ignored realities. According to Lee, the proposal impedes on JFK Marina property and road access, as well as Trevor Park. There was an 870 space parking garage proposal to be built beneath Trevor Park. The community was outraged by this, and passionately voiced their opinion at a Planning Board meeting in November 2012. Signs boasting “Leave Trevor Park Alone” were sprinkled throughout the crowd.<sup>112</sup> The disapproval by community members makes one wonder about the proposal’s sensitivity to the community’s needs.

Goren Group’s development adds a dimension of reality to this thesis. And its struggle with city ownership, tax credit, and the approval process is a telling example of how difficult reuse developments can be. A critique of this proposal is that it considers the 1% but not the other 99%. How can a place that can be mutually beneficial for both be created? In years to come it will be very interesting to see to what extent PowerHouse comes to fruition.

## **Building Summary**

The Glenwood Power Plant is a building known by urban explorers, city planners, developers, Yonkers residents, graffiti artists, and the passerby

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<sup>112</sup> Bultman, Matt. "Leave Trevor Park Alone"; Glenwood Convention Center Plan Draws Ire." Yonkers Daily Voice. November 14, 2012. Accessed December 13, 2014.

train passenger. Its history, informal use, and constant stream of development proposals make for a building rich with opportunity. Its location to the north of Yonkers could make it a northern bookend and destination for the city. Its southern location in greater Westchester County makes it a hinge between Westchester and New York City. Its proximity to the waterfront within a string of abandoned buildings along its shores makes it a prime candidate for this thesis. The building has the communal, historical, technological, and environmental implications much like its site, city, and region. There is great opportunity for the regeneration of this building. It was originally constructed because the railroad wanted to do things differently, and this reuse can be the beginning of seeing the Hudson River waterfront differently.

## **Chapter 7: Site Analysis**

Site analysis is valuable in both written word and drawings. While the first five chapters described and analyzed the site's many scales, this chapter is devoted to diagrammatic drawings that will constitute the analysis and synthesis of the problems for the site today.

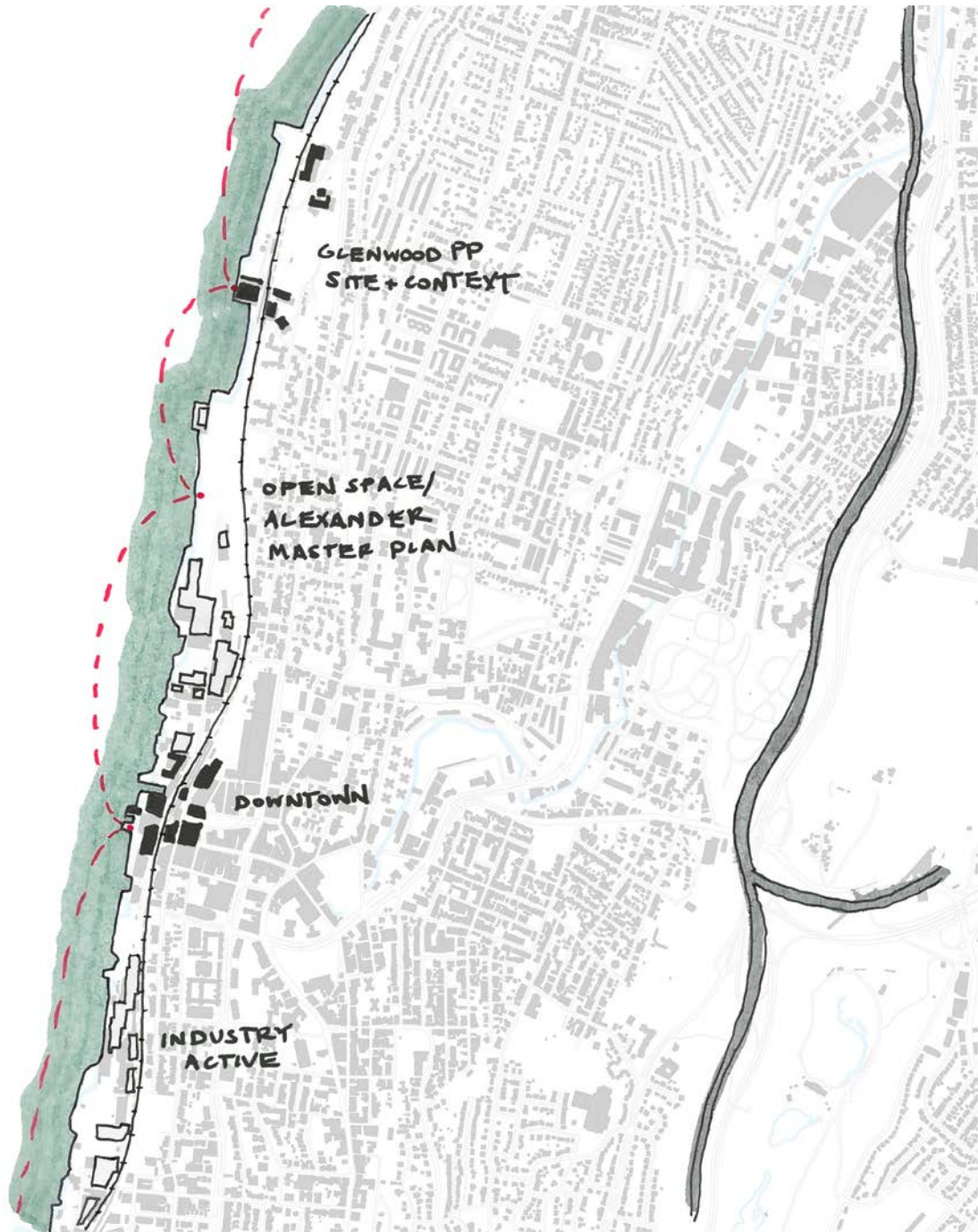


**Figure 56: Topography Diagram**  
**Credit: Author (Yonkers GIS Underlay)**



**Figure 57: Waterways + Green Spaces**  
Credit: Author (Yonkers GIS Underlay)

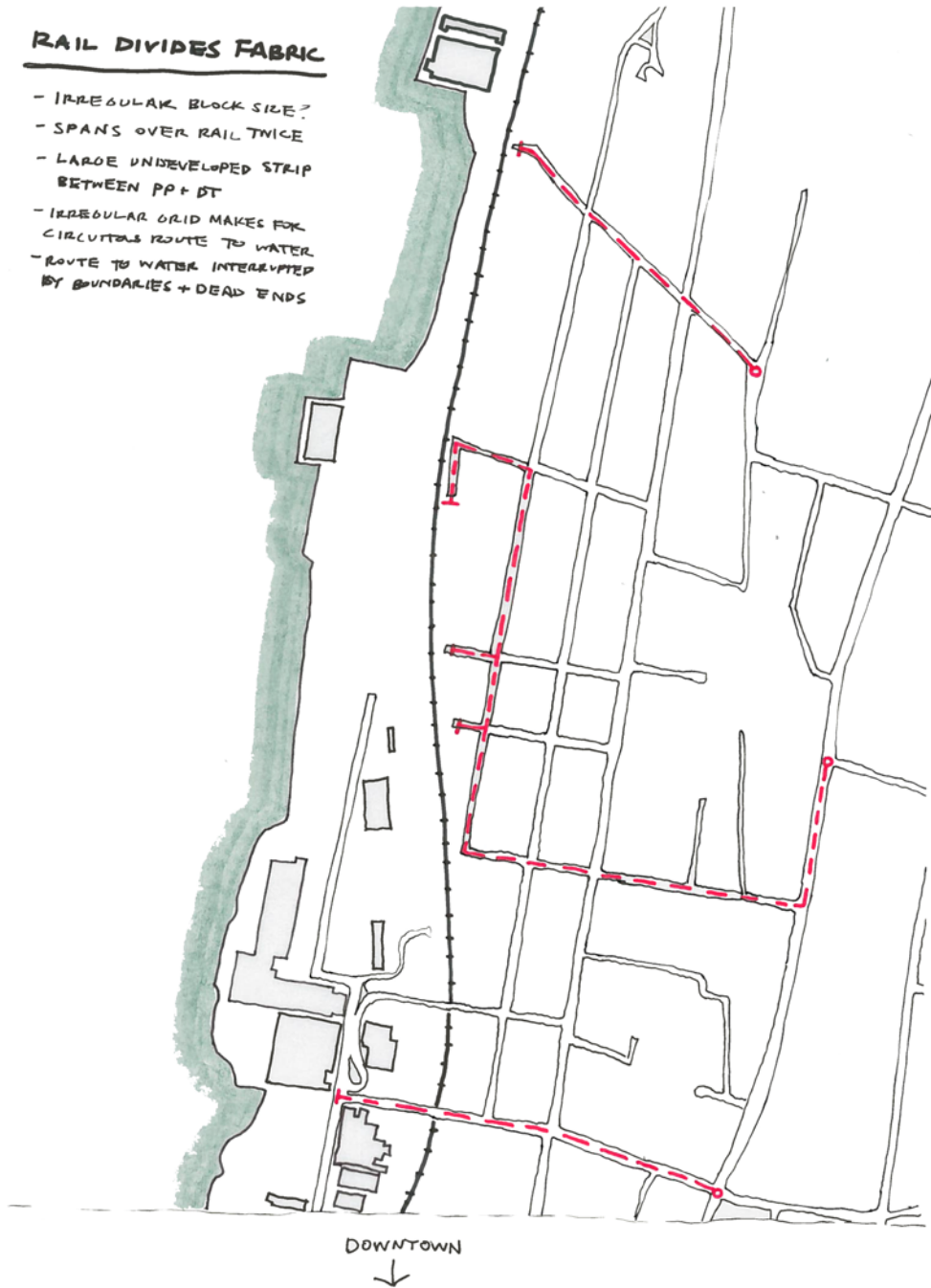




**Figure 58: Train vs. Car vs. (Potential) Ferry Flows**  
Credit: Author (Yonkers GIS Underlay)

**RAIL DIVIDES FABRIC**

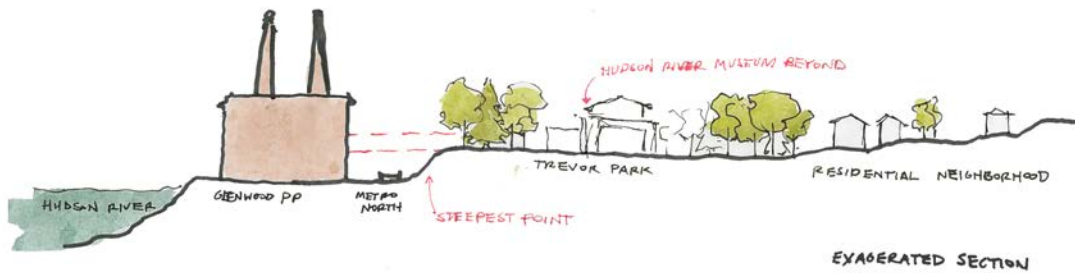
- IRREGULAR BLOCK SIZE?
- SPANS OVER RAIL TWICE
- LARGE UNDEVELOPED STRIP BETWEEN PP + DT
- IRREGULAR GRID MAKES FOR CIRCUTAS ROUTE TO WATER
- ROUTE TO WATER INTERRUPTED BY BOUNDARIES + DEAD ENDS



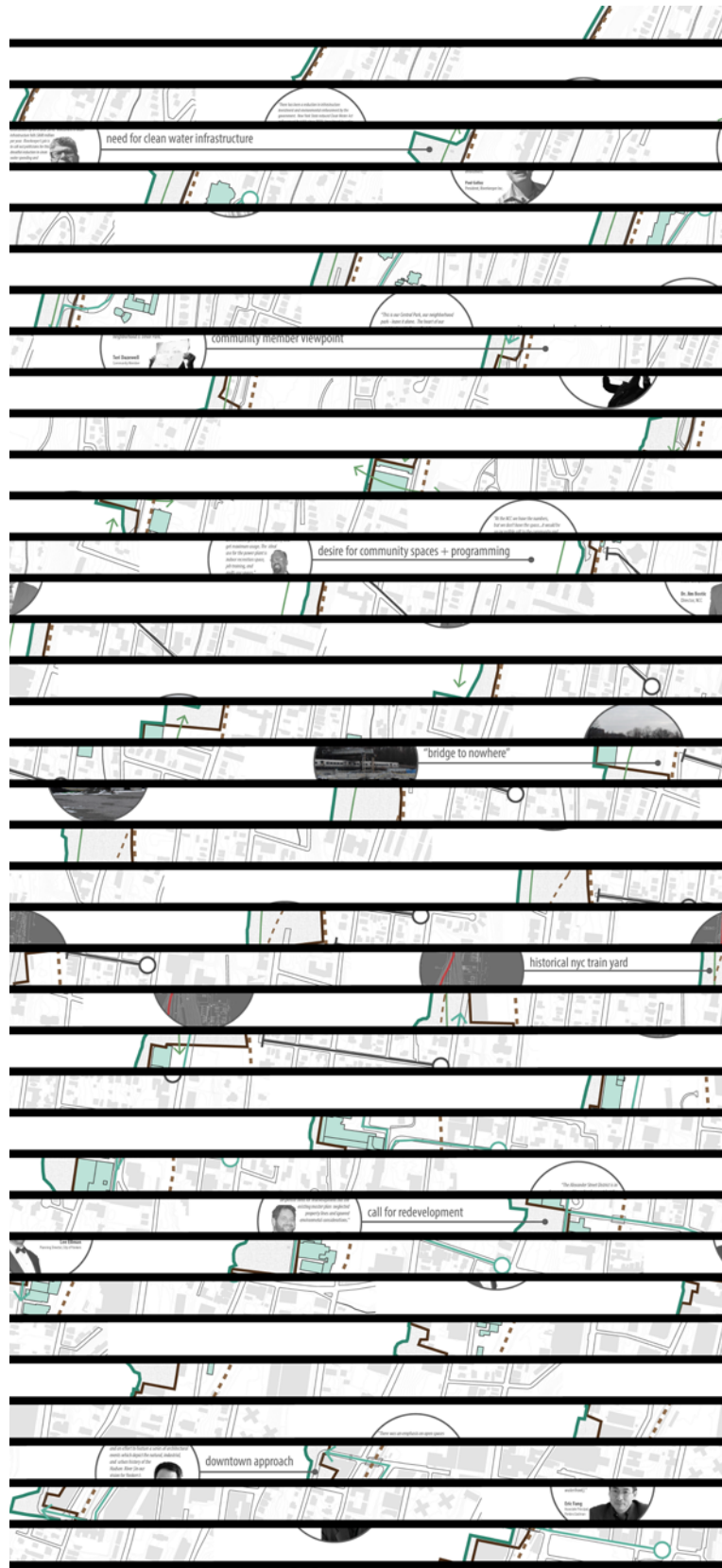
**Figure 59: Rail as Boundary to Waterfront Access**  
Credit: Author



**Figure 60: Site Connectivity Diagram**  
 Credit: Author



**Figure 61: Sectional Opportunity Diagram**  
 Credit: Author



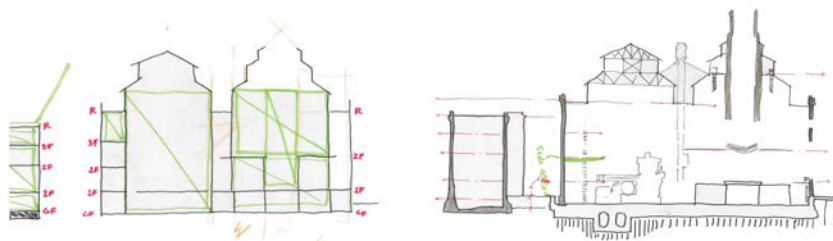
**Figure 62: Existing Flows Diagram**  
**Credit: Author**



**Figure 63: [CITY] Existing Flood Plain, Land Uses, Brownfield**  
**Credit: Author**



**Figure 64: [SITE] Existing Land Uses + Opportunities**  
Credit: Author

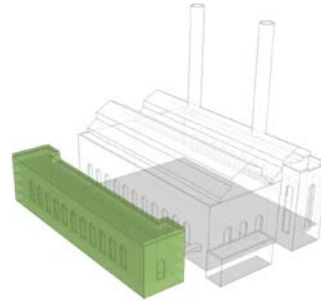


**Figure 65: [BUILDING] Spatial Analysis**  
Credit: Author

### SIDE BUILDING

10,122 SF  
x 5 FLOORS

50,610 SF

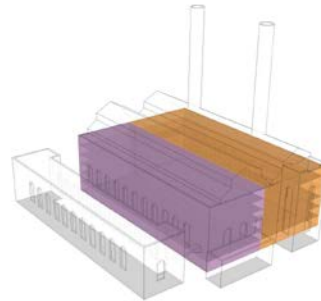


### BOILER HOUSE

21,247 SF  
x 6 FLOORS  
127,482 SF

### TURBINE HALL

17,213 SF  
x 6 FLOORS  
103,278 SF



**Figure 66: Glenwood Power Plant Square Footage**  
Credit: Author

EXISTING FLOOR AREA  
IN POWER PLANT

QUADRUPLE-HEIGHTED SPACES

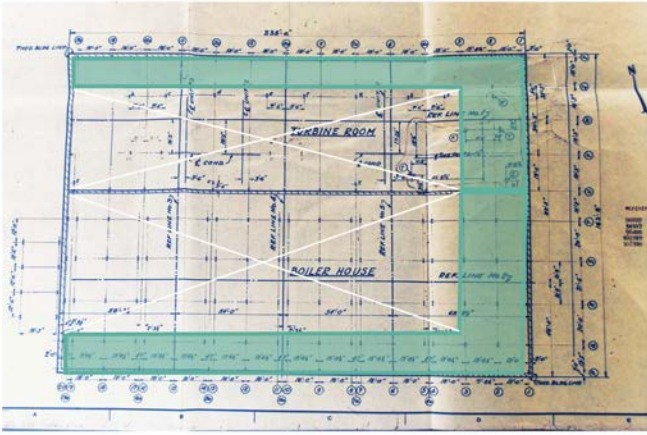


Figure 67: Existing Floor Plan in Power Plant  
Credit: Author

18' x 36' = 648 SF  
STUDIO APT = 600 SF  
SCHEME A | 18 UNITS

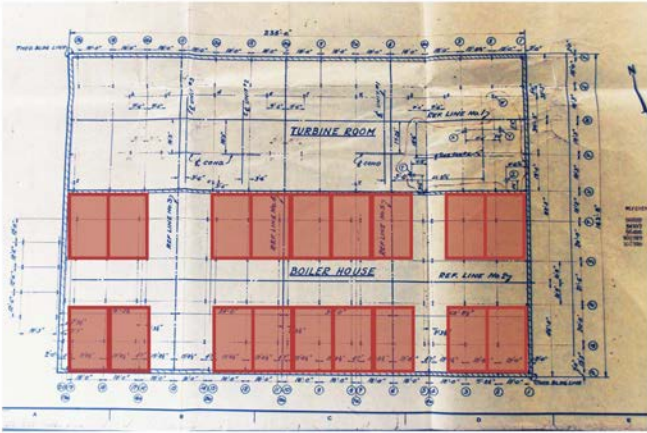


Figure 68: Scale Reference Diagram – Apartments  
Credit: Author



AREA = 17,213 SF  
 AVERAGE TRADER JOE'S  
 = 12,000 SF

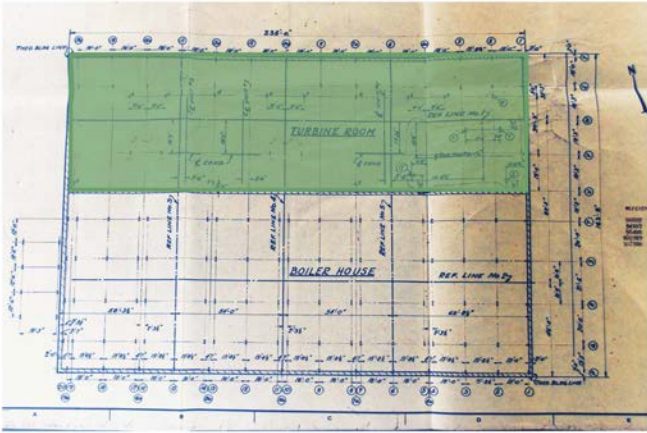


Figure 69: Scale Reference Diagram – Trader Joe's  
 Credit: Author

OLYMPIC SIZE POOL  
 164' x 82'  
 + WATER TREATMENT TANK?

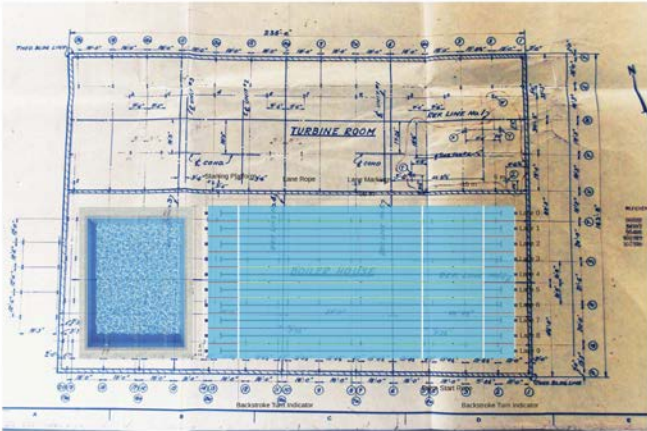
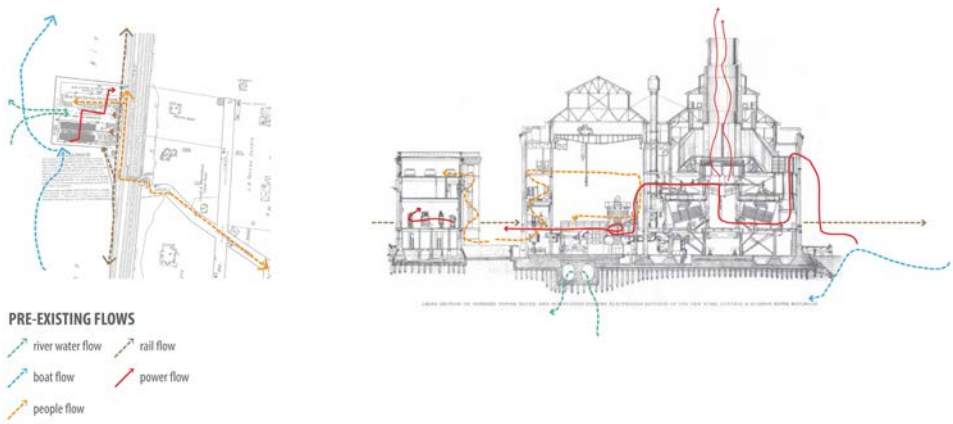


Figure 70: Scale Reference Diagram – Olympic Pool  
 Credit: Author



**Figure 71: Analytical Concepts – The Slot + Smokestacks**  
**Credit: Author**

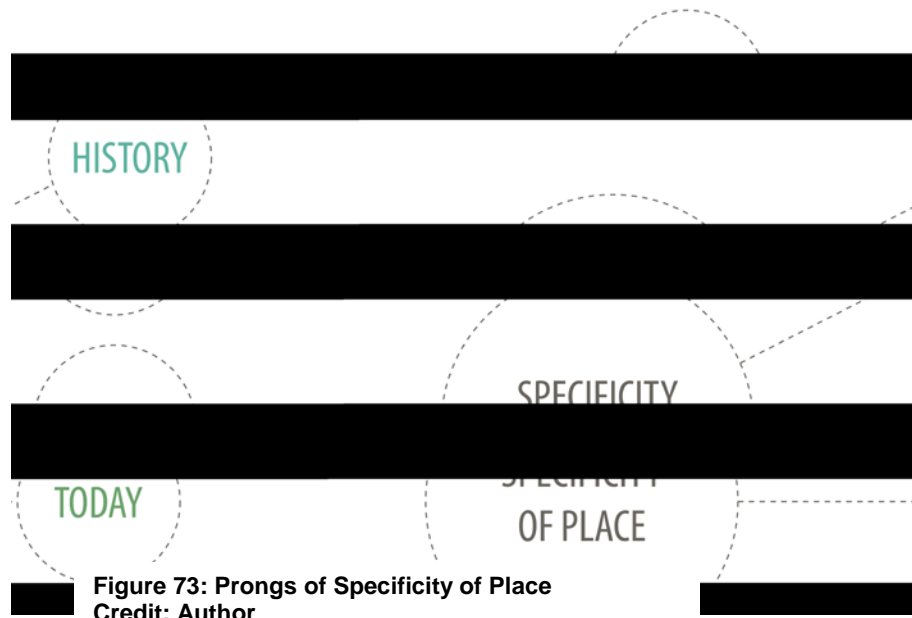


**Figure 72: Pre-Existing Building Flows**  
**Credit: Author**

Lessons learned from site analysis helped inform programmatic and design decisions, which will be further explained in Chapters 8 + 9.

## Chapter 8: Program

The research and analysis of the region, city, site, and building was used to inform the program for this thesis. Specificity of place derives from its past, its present, and its people. The examination of the past and present, and conversations with relevant community stakeholders all seemed to inform the programmatic solutions for the site and the building.



### Regional Scale – A ferry network for Westchester County’s waterfront

Regional scale, this is a region of people in transit by rail, road, foot, and water. The Metro North Railroad is third in the nation for ridership with 84,468,900 riders in 2014. There is an extensive highway network, and 19 of 30 railroad stations on the Hudson Line are in Westchester, but only 1 active

ferry terminal in all of Westchester. The active terminal is in Ossining, and it takes you directly to the NYC.

Looking at the historical brochures of day line steamers up and down the county, and the plans for redevelopment along the Hudson River with RiverWalk and the New NY Bridge, this thesis proposes a regional ferry network for Westchester County's waterfront. This ferry system is conceived as being a recreation of flows that have existed for centuries on the Hudson River – agriculture, industry, recreation, and infrastructure. This ferry network can provide an infrastructure for regional transit and recreation that has been forgotten in recent years.

### **City Scale – An adaptable + accessible waterfront park for Yonkers**

The programmatic agenda for the city scale of this thesis was informed by history, current environmental conditions, and the needs of the community.

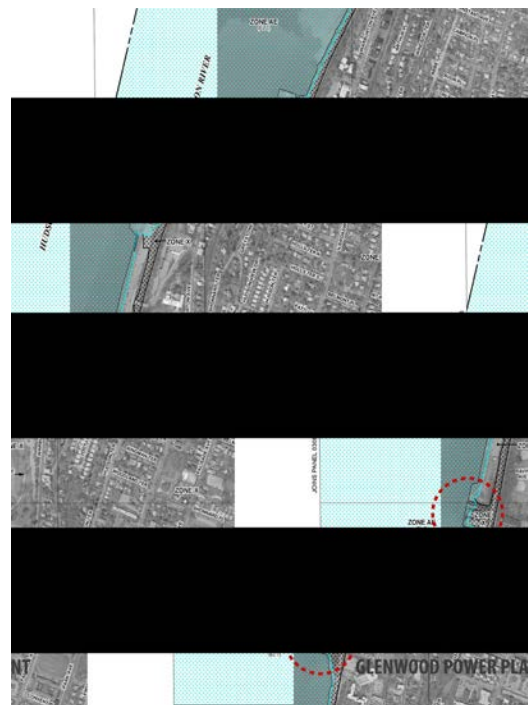
An analysis of Sanborn maps revealed how the Alexander Street District brownfield came into being. Appearing on the maps in 1917, this land was built out from the railroad tracks to accommodate the New York Central Railroad train yard (the same train line that the



**Figure 74: Alexander Street District - 1917**  
Credit: Sanborn Maps

Glenwood Power Plant was powering). It is amazing to see how industrial accommodations grew out from the land into the water. The Sanborn maps also revealed that more bridging had happened along the Hudson Line, but the bridges have since been abandoned and severed (like the “Bridge to Nowhere”). This map from 1917 shows the train yard, as well as the Point Street and Babcock Street bridges over the tracks. This connective and historical parti helped inform the program.

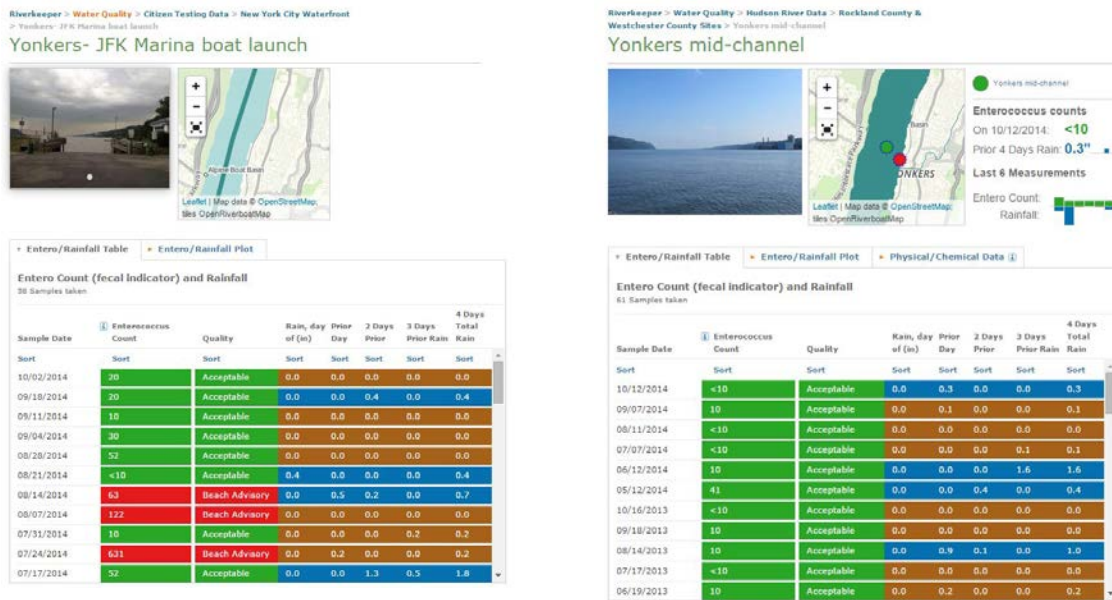
Environmental conditions played a large part in determining the program for the Alexander Street District site. FEMA maps revealed a 100-year flood plain running directly through the site. This reality helped rule out any high density urban infill approaches to this district. Rather, the flood plain helped reveal a need for flood protection and softer, more adaptable edges. Another environmental factor for the city scale is the condition of the Hudson River’s water. Riverkeeper Inc.’s extensive “How is the Water? 2014” report details the



**Figure 75: Flood Plain Diagram**  
Credit: Author

results of water testing and quality throughout the Hudson River Valley. The report reveals that the Hudson’s water is most contaminated at the river’s

banks (see images below comparing water conditions at JFK Marina versus the Yonkers mid-channel). This is due to combined sewer overflow systems (CSOS) where large amounts of rainfall cause stormwater and sewage to combine and disperse through overflow outfalls into the Hudson. The report reveals that Yonkers has the most overflow outfalls in the county with thirteen. These two major environmental factors were crucial in determining the programming and design for a waterfront park all along the river's edge of the site.



**Figure 76: Riverkeeper Testing Sites**  
 Credit: Riverkeeper.org

Site analysis and interviews with specific community members regarding social and health needs in the area provided the final elements of the program. The site analysis of amenities in the Alexander Street District

revealed that it qualifies as a food desert (see diagram below). There is a need for access not only to the waterfront, but fresh produce as well.

Regarding social amenities within the scope of the Alexander Street District, there is the Nepperhan Community Center. I had a chance to interview the director, Dr. Jim Bostic, on the phone to ask him about the needs of the NCC and the community as a whole. Please reference the diagram below to see excerpts from our conversation. The major takeaway from the interview was that the people are engaged and wanting to better themselves, but the NCC simply does not have enough space. This interview helped affirm that the correct program for the Alexander Street District would include the following: a mix of uses including food production, water filtration, flood protection, and community access and engagement.

*To qualify as a "low-access community," at least 500 people and/or at least 33 percent of the census tract's population must reside more than one mile from a supermarket or large grocery store (for rural census tracts, the distance is more than 10 miles).*

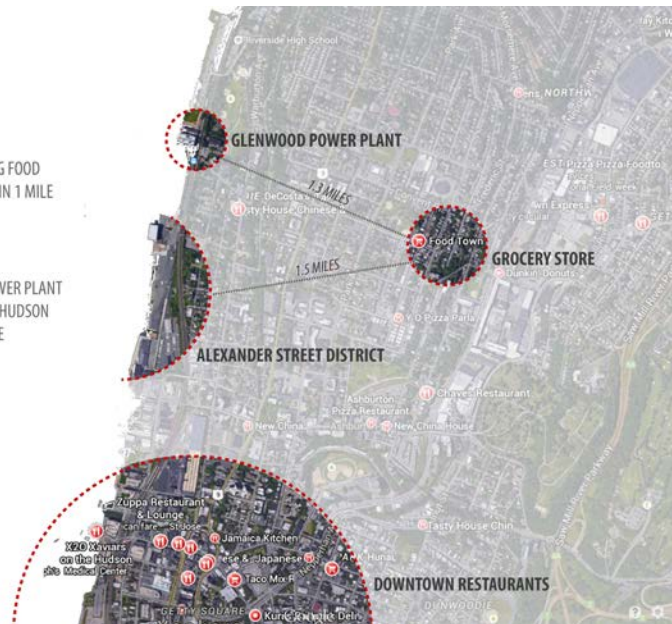
-USDA

**COMMUNITY NEEDS:**

- \_ ACCESS TO HEALTHY FOOD
- \_ EDUCATION ABOUT GROWING FOOD
- \_ RESTAURANT OPTIONS WITHIN 1 MILE

**PROGRAMMATIC SOLUTION:**

- \_ URBAN AGRICULTURE AT POWER PLANT
- \_ RESTAURANT OVERLOOKING HUDSON
- \_ COMMUNITY GROCERY STORE



**Figure 77: Food Desert Diagram**  
**Credit: Author**

## DR. JIM BOSTIC

Executive Director, Nepperhan Community Center  
Excerpts from a phone interview on 2/4/15

"The ideal use for the power plant is indoor recreation space, a community theater, job training, and multi-use spaces."

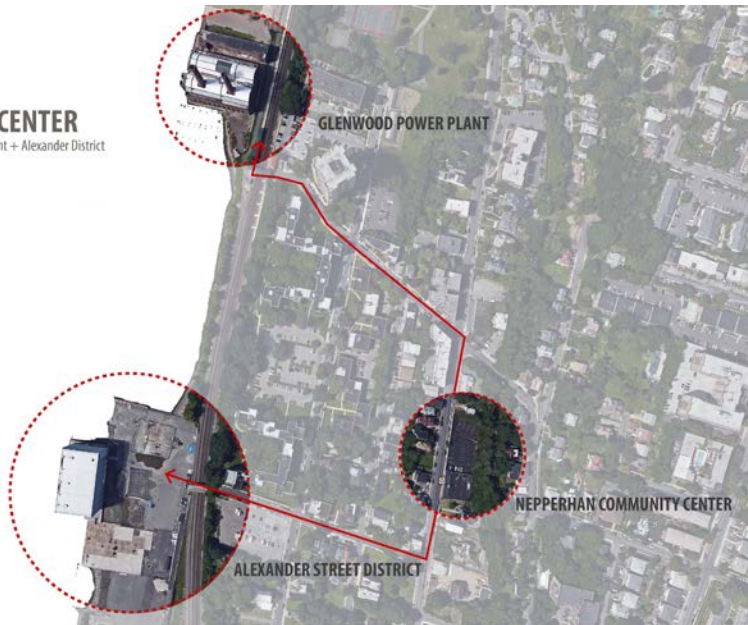
"At the NCC we have the numbers, but we don't have the space."

"It would be an incredible gift to the community, it would get maximum usage, and would improve and empower our children."



## NEPPERHAN COMMUNITY CENTER

Located within walking distance of the Glenwood Power Plant + Alexander District



**Figure 78: Community Center Proximity + Quotes**  
Credit: Author



## **Site Scale – Access by Water, Foot, Transit, and Car**

The program approach for the site scale is one of accessibility, to knit the programs of building and urban scales together. The site's highly three dimensional qualities called for the re-assessment of flows in the x, y, and z axes. The "program of connective flows" are as follows:

- **WATER FLOW** – Water taxi terminal
- **CAR FLOW** – Parking garage bridge enters building at two points
- **TRANSIT FLOW** – Grand stair from train platform
- **PEOPLE FLOW** – Pedestrian access from downtown waterfront area through linear pathways

The informants for the placement and design of these connections will be explained in Chapter 10, Design Approach. The following images show process sketches for site access and approach through a number of schemes.

BOOKEND SCHEME

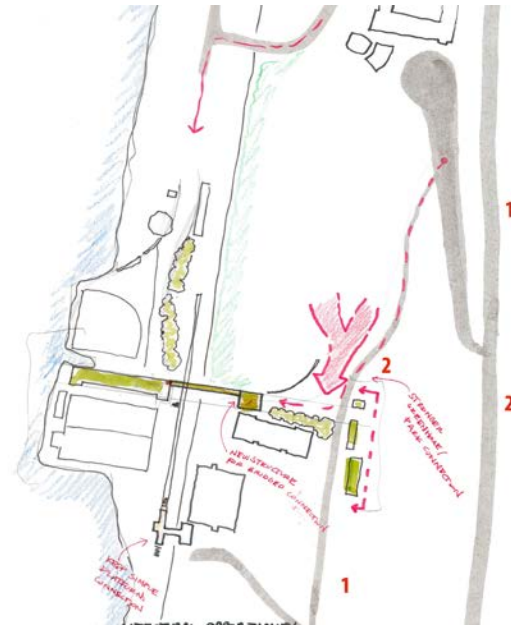


Figure 79: Bookend Scheme  
Credit: Author

PARKING BRIDGE SCHEME

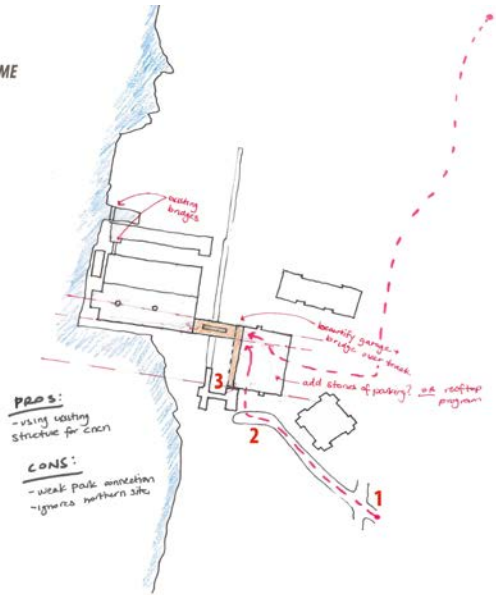
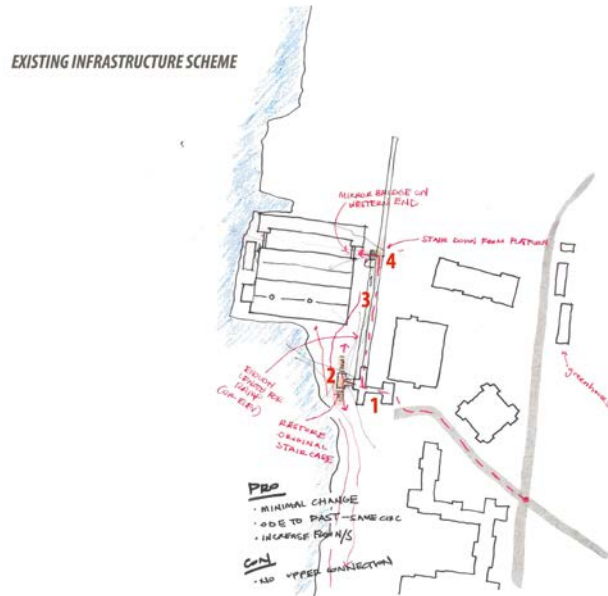
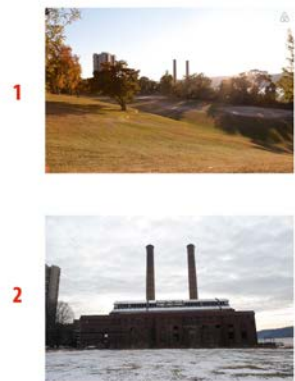
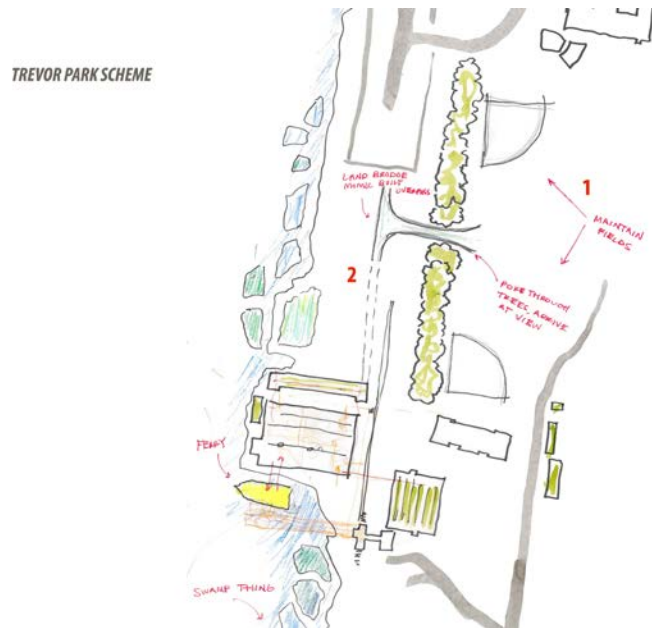


Figure 80: Parking Bridge Scheme  
Credit: Author



**Figure 81: Existing Infrastructure Scheme**  
Credit: Author

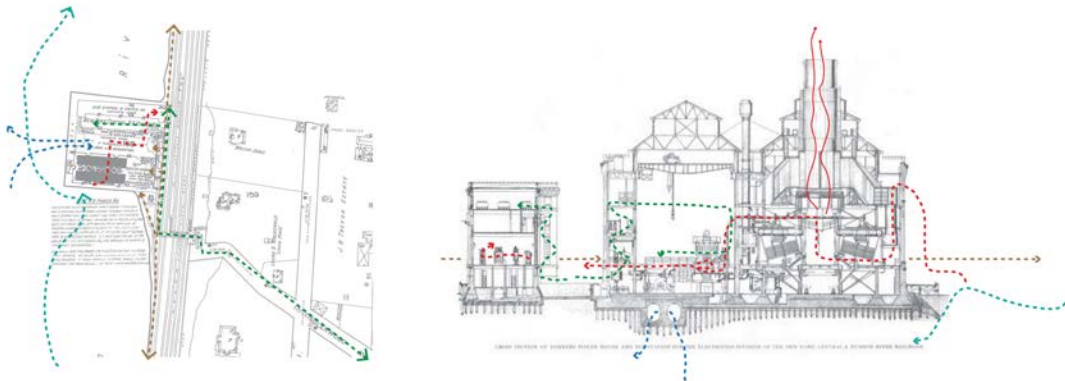


**Figure 82: Trevor Park Scheme**  
Credit: Author

## Building Scale – Glenwood Market + Nepperhan Community Center

The program for the re-use of the Glenwood Power Plant slowly revealed itself after a lot of research of history, today, and key people that act as stakeholders for the building.

Historically, analyzing how a power plant operated and flowed helped inform how people might begin to flow through this building (see diagram below). The power plant's program was separated into three bays of the building, and likewise this thesis proposes several layers of program to be interwoven throughout the building complex.



The site's land uses today within the context of the larger urban site also helped inform potential users. The land use diagram below shows that the immediate site context is larger residential, with an inner ring of civic

buildings including Riverside High School, Hudson River Museum, Nepperhan Community Center, Glenwood Station, and JFK Marina. This means the building can pull from its surrounding resources of people to better the population of youth interested in recreation and environmental education, and create jobs for the surrounding community. Furthermore, potential users include all Hudson Line users and people using water transit on the Hudson River.

The determination of the building's program was conceptualized as a hinge point of the larger urban scale. Since the urban approach was a water cleansing, food production design, the building would become a beacon of this. Furthermore, Dr. Jim Bostic explicitly stated that there is a need for indoor recreation and a jobs training program for the community's youth. By testing the spatial possibilities offered by the Glenwood Power Plant, it was determined it could become a recreation center, food market hall, and trade school (with an upper most level of private offices/residential units). The design approach and features of these program decisions will be explained in the Design chapter.

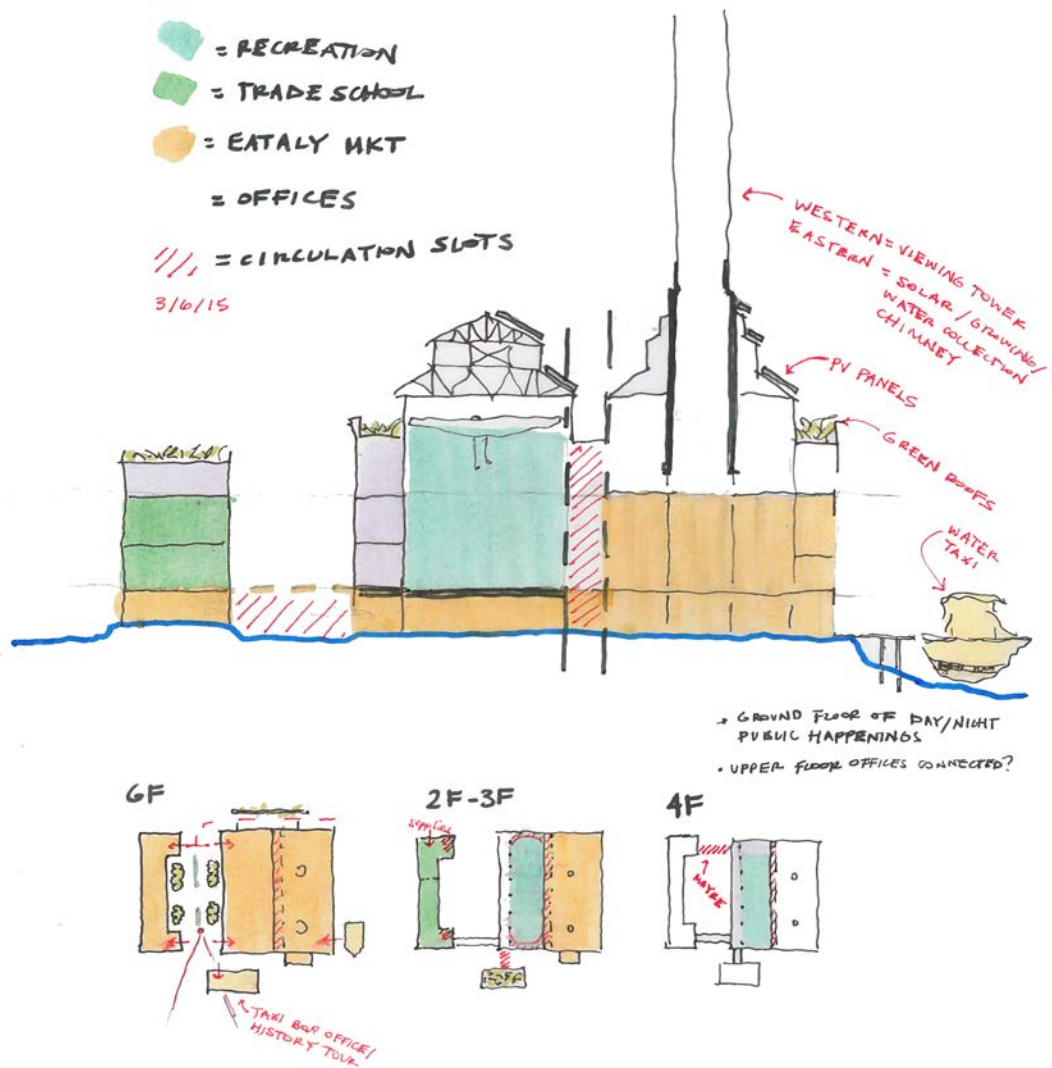
Just as the original building was organized around flows of coal, water, people and electricity, the proposed program allows these flows to be repurposed and redesigned. Production will be in the form of producing jobs for the community and fresh produce. Water flow will be inverted from a

process of pollution to a process of cleansing. And ultimately, the design of people flow will help unite this building with its landscape and region.

The trade school will have education programs that align with the program of the larger context on the waterfront. Programs in Gardening + Landscape Design, Construction + Building, Marine + Watercraft, Renewable Energy Management, and Marine Mechanic would be taught at the Turbine Trade School. This way, the urban site becomes a classroom in and of itself.

Likewise, Glenwood Market can reap the benefits of its productive landscape to the south and sell and cook with the produce and fish.

Glenwood Market will have multiple program components, and was designed to go from informal to formal as one ascends through its three floors. The bottom most floor is an informal food market, second floor will incorporate teaching kitchens, and the third floor will be a restaurant overlooking the Hudson and offering views up into the smokestacks (see process sketch below to see program stacking).



**Figure 83: Building Program Process**  
 Credit: Author

### Interconnected Program

The main intention of this proposal is to demonstrate how a building's program can be one with a site, city, and regional approach and vice versa. The various programs for the Glenwood Power Plant site will benefit from each other and adapt with each other over time. The following chapter will

describe the nuances that make for the design of these re-purposed flows of people, agriculture, water, transportation, and infrastructure.



## Chapter 9: Design

### Design Approach

The design approach for this thesis is very similar to its multi-scalar approach to the waterfront. The ultimate scheme will be both an amenity for the local community as well as a destination for tourists. Water, transportation, community needs, and connectivity are the values that carry this design.

Our treatment of the water's edge has been guided by different values over time. Water can be a vista, a medium of transportation, a healer, and a grower. Transportation can be by foot, bicycle, car, train, or boat. Community can emerge from an understanding of its past, its present, and potential benefits for the future. Lastly, connectivity can be ecological, physical, visual, and psychological. Each value comes with different prongs of influence and are all incorporated into the design of the waterfront and the Glenwood Power Plant.

The challenges were then to address the following questions: How can program address water's multi-faceted benefits? How can a building be for tourists while fulfilling the needs of a local community? How can this thesis act as an example for connectivity to this waterfront and for waterfront communities at large? How can the dichotomies amongst these values

become architectural? This thesis culminates from a quest to create design solutions by carefully seeking answers to these questions at multiples scales.

## Region Scale Design

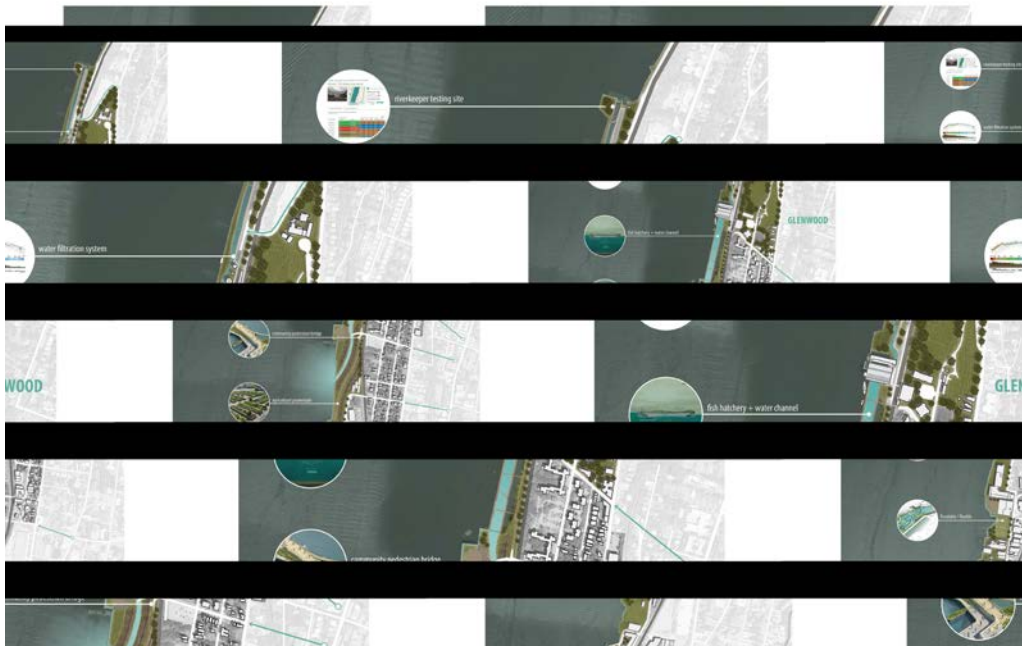
The proposed regional ferry network mimics the flow of daytime steamers of the Hudson River's past. The proposed nodes on the ferry line have been identified as sites with similar conditions to Yonkers and the Glenwood Power Plant. Ultimately this regional proposal looks to challenge most recent regional water transit flows that only flow south. This ferry network allows the Hudson River to return to being an artery of access into the Hudson River Valley.



**Figure 84: Regional Flows – Past + Proposed**  
Credit: Author

## City Scale Design

The design for the waterfront park is intended to be solutions to the problems identified at the city scale. The scheme creates connective flows both north-south and east-west. Beginning at the northern most end of the site, Hudson River water enters the park's filtration system. It is cleaned by the time it reaches the building, and the Glenwood Power Plant acts a hinge between cleansing and production. Clean water is celebrated at the building complex: a trough runs east west between the switch house and main building, then the water flows southward via a recreational pool, two cisterns that echo the shape of the smokestacks above, and a clean water channel. Walkways on either side of the clean water channel reflect the smokestacks in plan and allow visitors to follow the clean stream of water.



**Figure 85: Waterfront Park Proposal**  
Credit: Author

Clean water is utilized as a fish hatchery in the clean water channel and can also act to irrigate the crops to the south. The crop lines mimic the lines of the New York Central Railroad that once occupied this brownfield. Another primary component of the southern half of the waterfront park are the new connections. Two new bridges are proposed as part of the design – one pedestrian land bridge at Point Street, and one bridge that cars could utilize at Union Place. These new connections allow for a cadence of waterfront access for the surrounding community.



**Figure 86: PEOPLE FLOW from Alexander Street Park**  
Credit: Author

## Site Scale Design

Improved access at the site scale was paramount for the design approach, and access was broken down into four different flows:

**Water:** A water taxi part of the proposed ferry network will pull up to the power plant's southern face where boats previously dropped off coal to the power plant. This is reinstating a flow of the past but repurposing the use.

**Foot:** Pedestrians will be able to access the power plant from the southern Alexander Street District due to newly designed pathways and bridges. Pedestrians will also have access to the improved flows for cars and train passengers.

**Train:** A ramp and a grand stair have been added to improve access from the train platform, leaving the passenger on axis with the slot between the two buildings, and offering a vista to the river. Furthermore, a stair down from the existing train overpass links up with the pathways that extend southward from the building (mimicking a stairway that once existed to access the power plant that was discovered through analysis of Sanborn maps).

**Car:** This design proposal doesn't wish to ignore the car. It takes advantage of the structural integrity of the existing parking garage just east of

the power plant. A bridge of industrial character plugs into the third and fourth floors of the power plant. It provides access at two points to correspond with different levels of programmatic privacy (Glenwood Market on the third floor and private residences/offices on the fourth floor).



**Figure 87: Site Axon**  
Credit: Author

Overall the site scale design strives to be self-evident by creating connections in the x, y, and z axes.

## Building Scale Design

A large component of building design was designing the way the program pieced together. The ground plane throughout both buildings is meant to be one experience where building and landscape are one. The recreation center and the trade school are parallel to one another in the section of the building to create connections for similar users. Glenwood Market's program develops and gets more formal as the user ascends through the space. The upper most floors of both buildings and both bays in the main building is more privatized as working/living units that offers great views of the river, county, and NYC to the south. Other key design moves are evident through various moments and meanings that have been identified throughout the building.

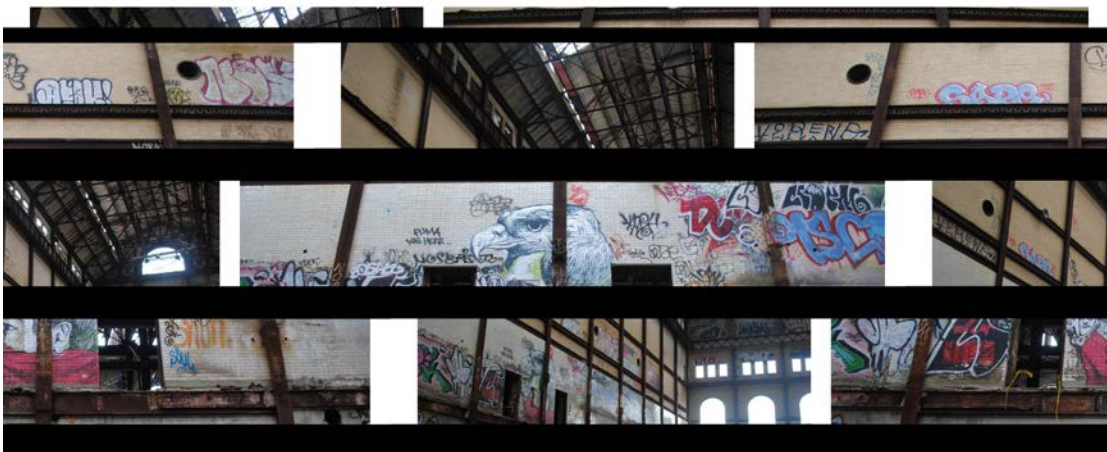
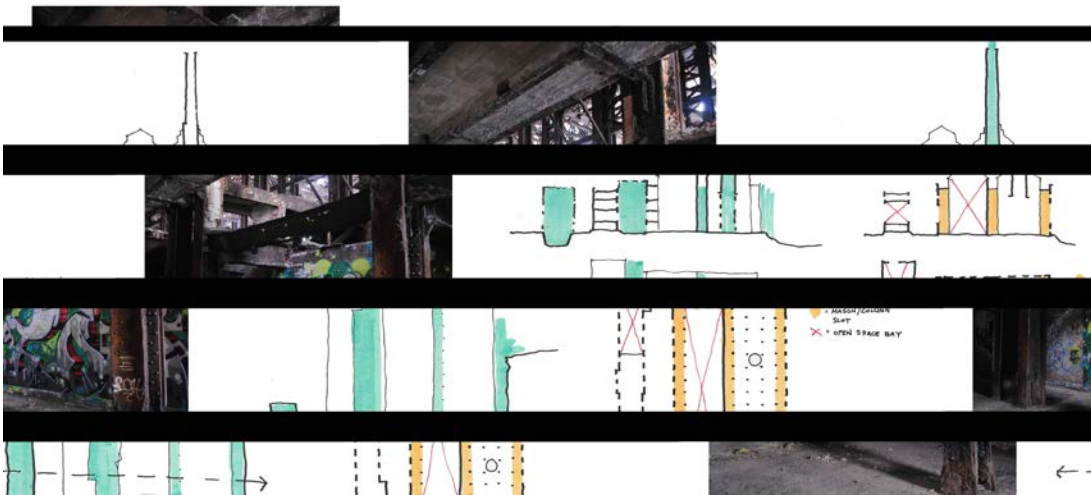


Figure 88: Masonry Wall as Palimpsest  
Credit: Author

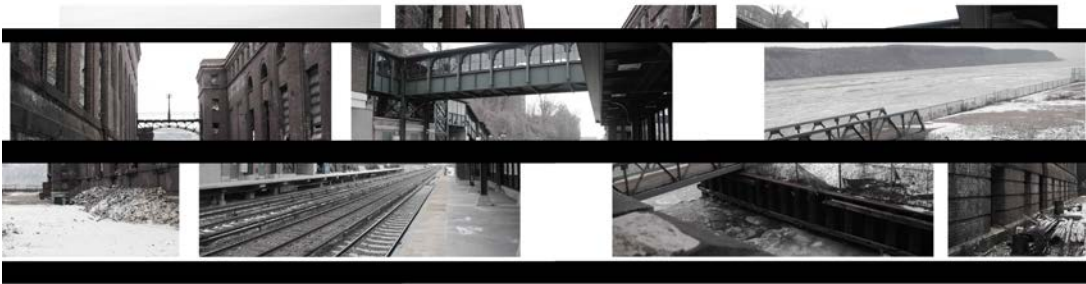


**Figure 89: Slots**  
**Credit: Author**

**Slots:** Diagramming the building led to a spatial understanding of several slots throughout the building complex. There is a slot between the switch house and main building, between the turbine hall and boiler room bays of the main building, and the smokestacks are high-reaching vertical slots. Design attention was given to these various slots, particularly the slot between the two bays of the main building.

The masonry wall between the two bays embodies the idea of palimpsest. When the building was in use it was penetrated by various circular openings to allow pipes to pass through. Since abandonment it has become a canvas for multiple layers of graffiti and artwork. For this proposal, its purpose is re-written once again while leaving those layers of the past. This slot is occupied by the major spine of circulation for the building: it winds through the slots and starts to make penetrations of its own at each level.

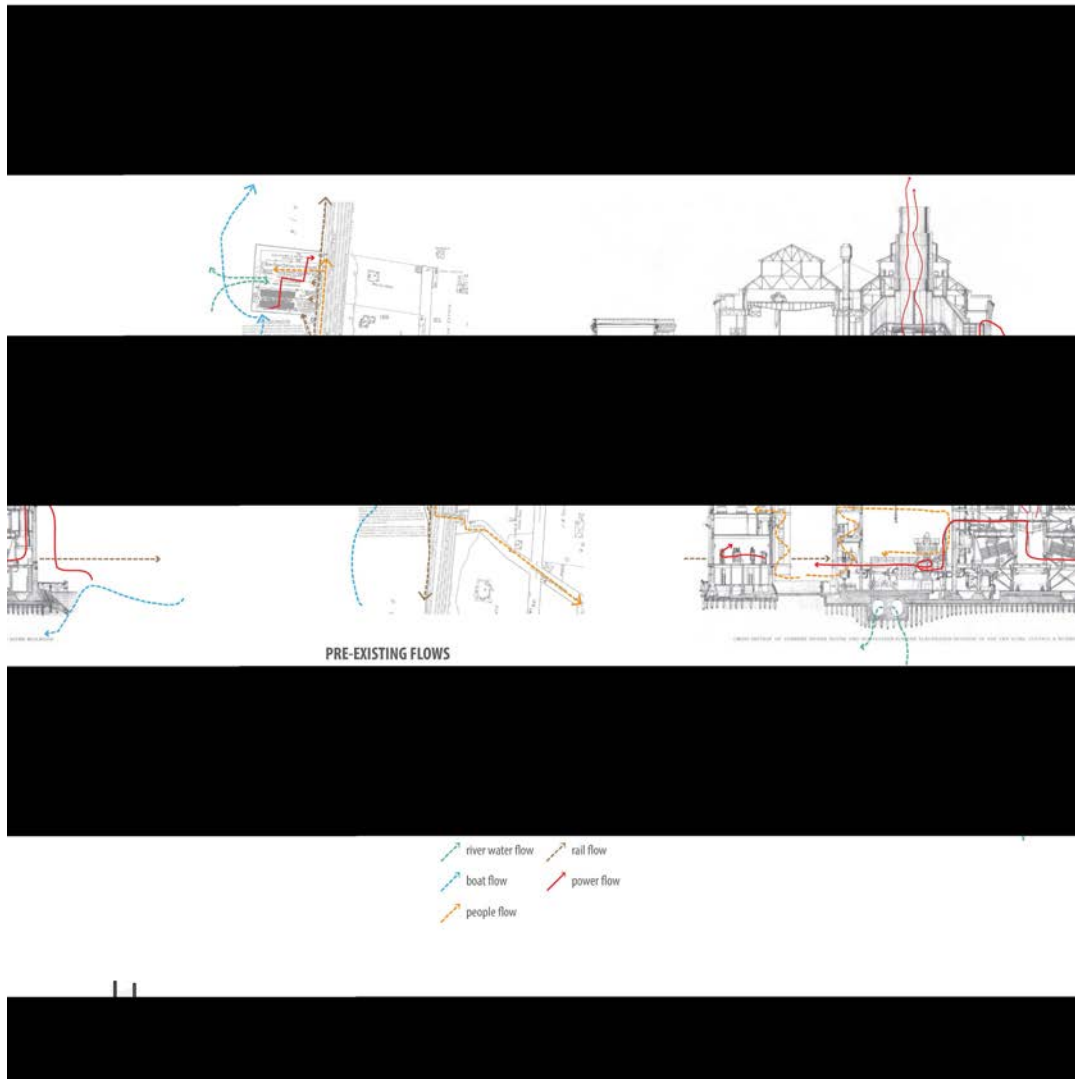




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**Figure 90: Bridging**  
Credit: Author

**Bridging:** Moments of bridging happen throughout the entire building complex. There are existing bridges over the tracks, between buildings, and over a boat slip on the northern side of the switch house building. The proposed design interventions mimic these connections. For the recreation center program, an elevated track was designed for the third floor. It is meant to mimic the circulation that previously existed along the perimeter of the building in the form of catwalks. Likewise, a new bridge is designed to connect the upper most levels of the building at the eastern end of the complex between the two buildings. This bridge mimics the existing connection that exist between the two buildings at the lower level where the trade school and recreation center are connected.



**Figure 91: Pre-Existing vs. Proposed Flows**  
 Credit: Author

**Flows:** The rethinking of flows has been concurrent throughout all scales of this thesis, and a similar approach was applied to the redesign of flows at the building scale. Water flows have been rethought for the x, y, and z axes of the building. As previously described for the city scale design, cleaned Hudson River water flows throughout the ground plane of the

building. In the z axis, a new rainwater flow has been designed for the same slot that the winding stair occupies. The roof of that slot is the valley between the two monitor roof systems, and a system of rainwater collection and filtering allows grey water to flow down the slot and be used for toilets, dishwashers, and spickets at the Glenwood Market level. This filtered water can also be used to irrigate the crops to the south of the building. Truly, the cross comparison of pre-existing flows with proposed flows show how uses have been rethought for the designed flows of the building proposal.

The following images demonstrate the design moves for the building scale of this thesis, and demonstrate how buildings can be one with landscapes and how new uses can be integrated with and enriched by connections with the fabric of the past.

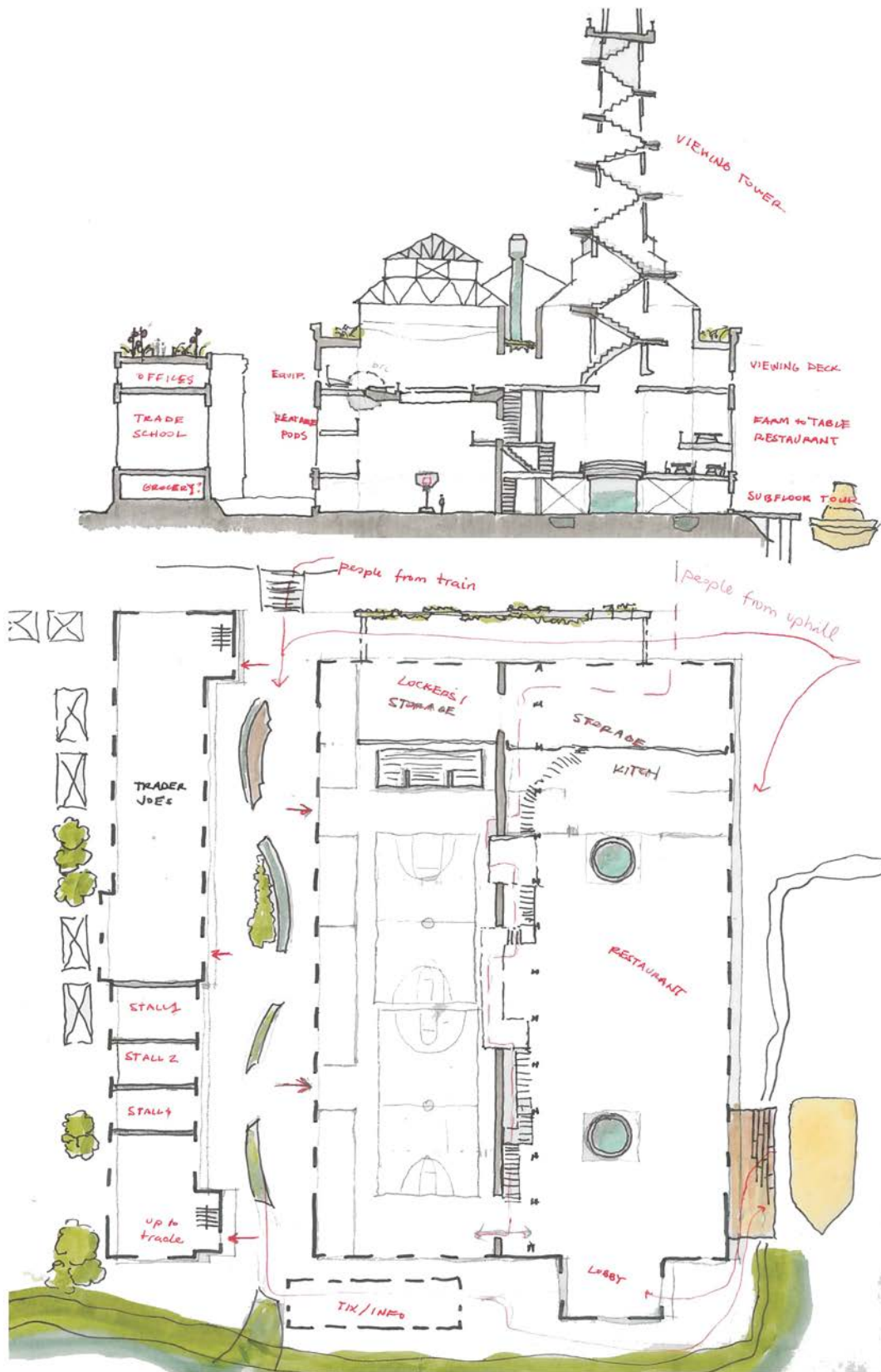


Figure 92: Building Design Process  
Credit: Author

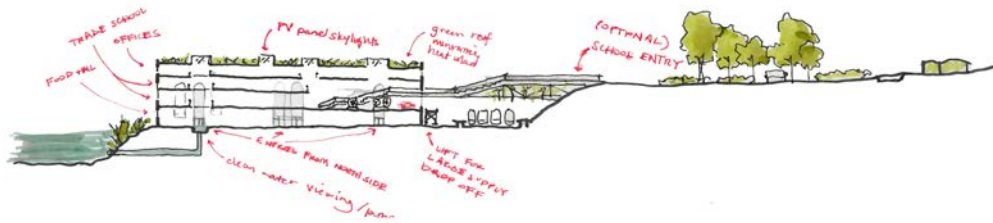
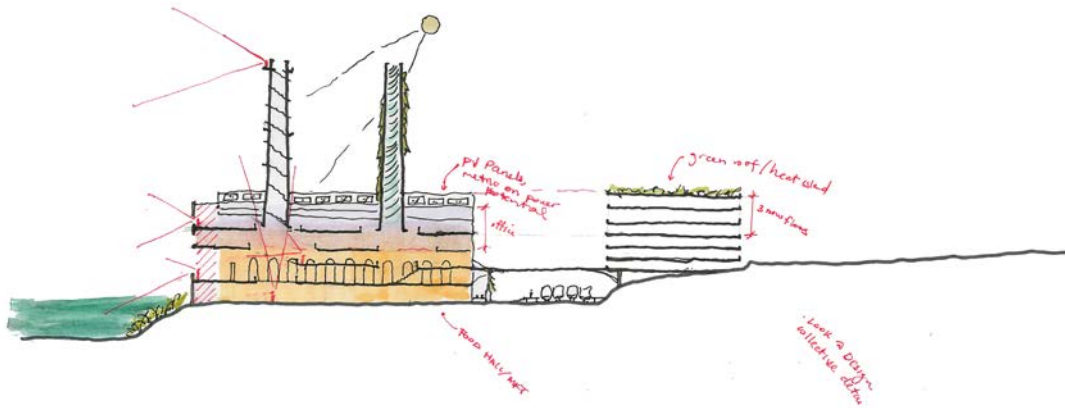
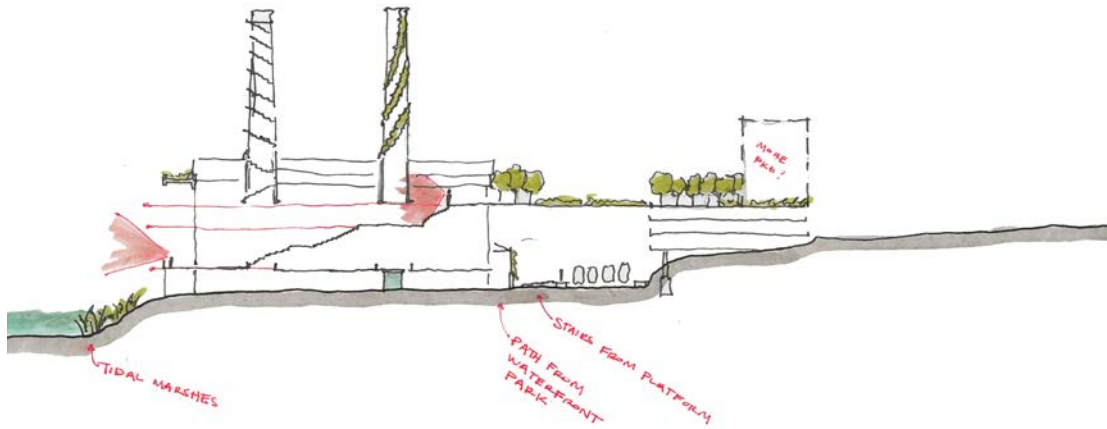
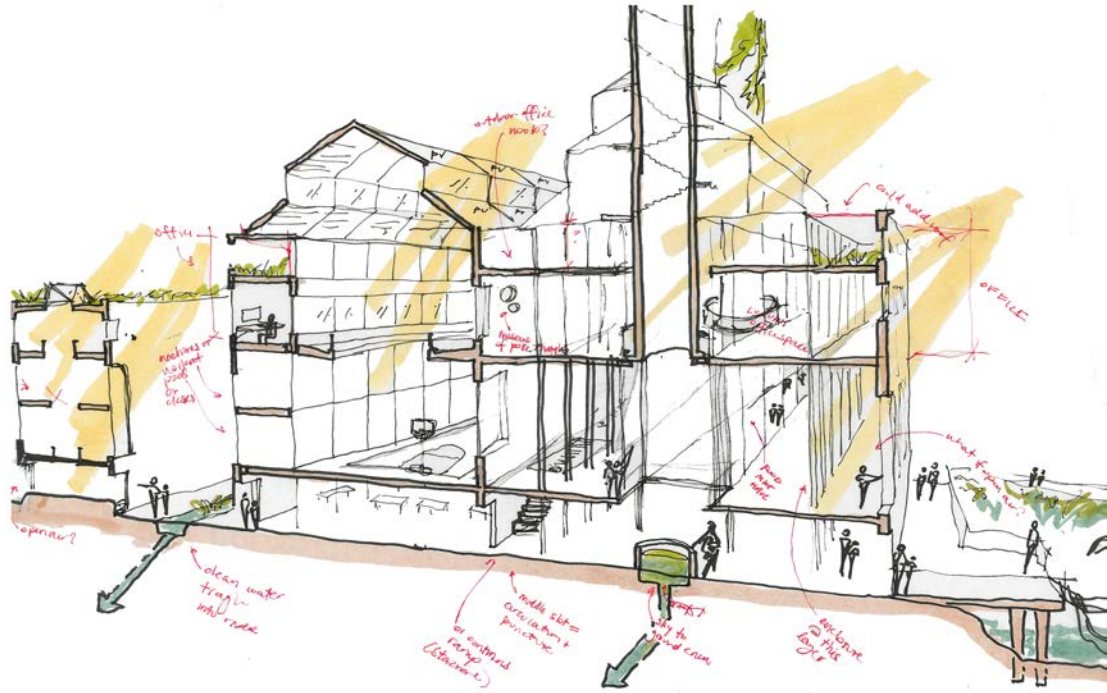


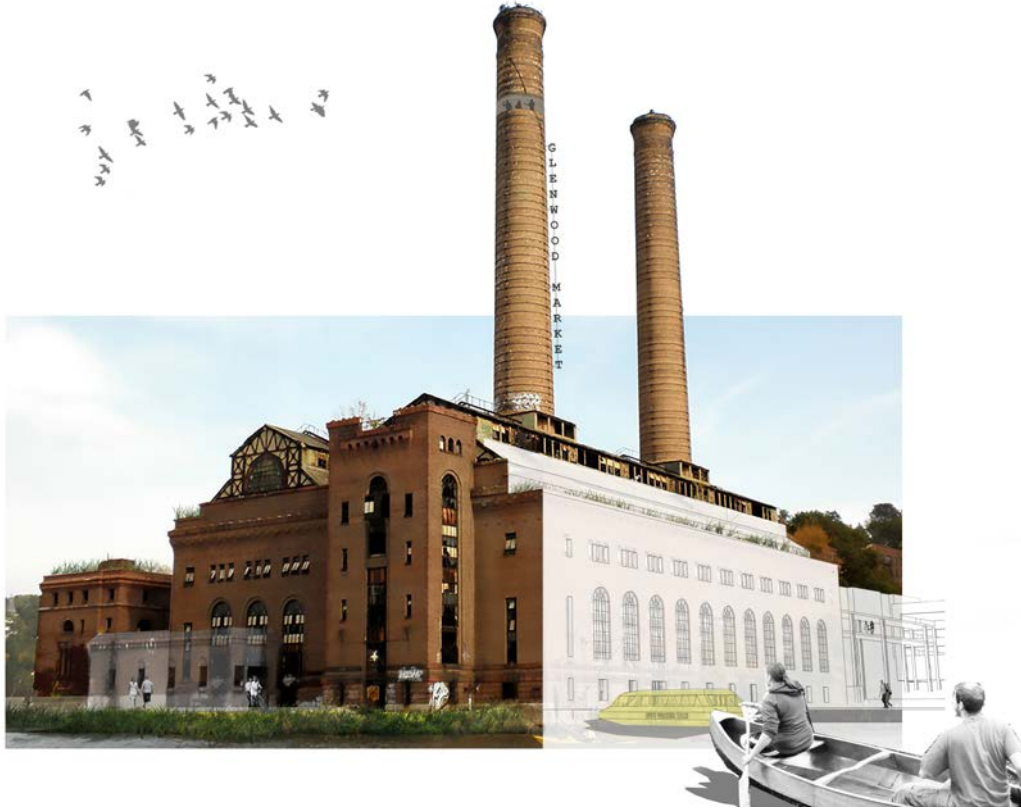
Figure 93: Site Section Process  
Credit: Author



**Figure 94: Section Perspective Process**  
 Credit: Author



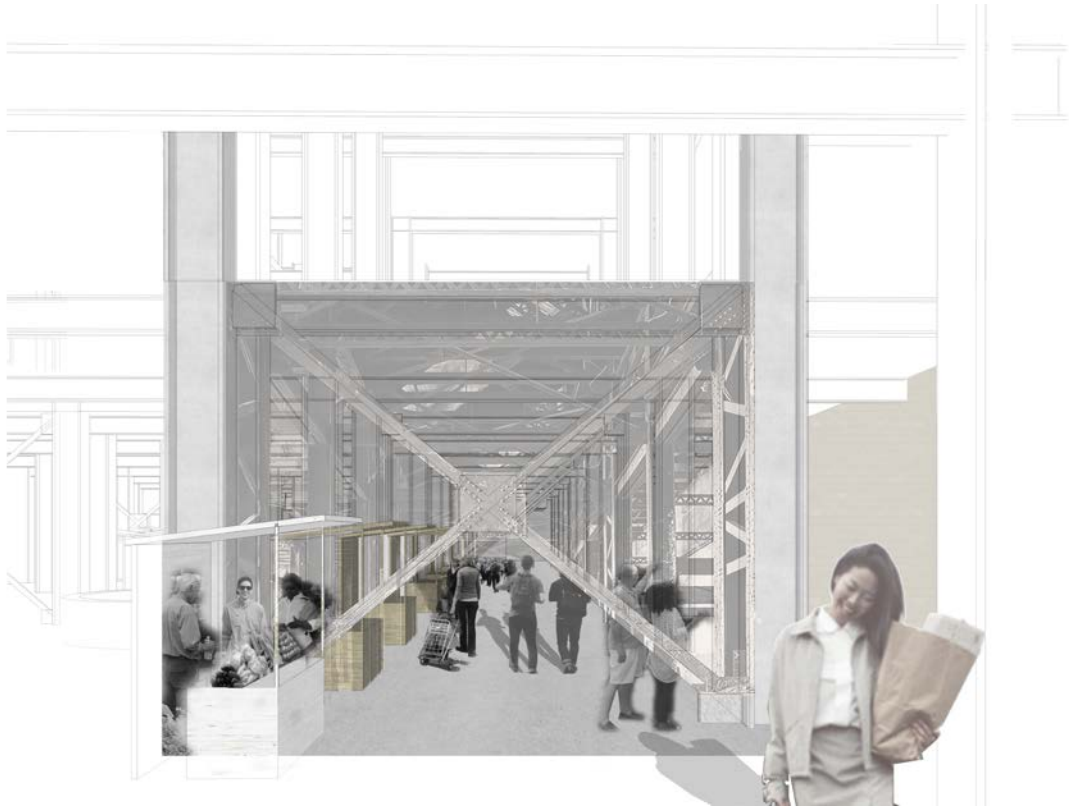
**Figure 95: Section Perspective Looking East**  
 Credit: Author



**Figure 96: WATER FLOW** approach from the Hudson River  
Credit: Author



**Figure 97: PEOPLE FLOW** inside Nepperhan Recreation Center  
Credit: Author



**Figure 98: AGRICULTURE FLOW at Glenwood Market**  
Credit: Author



**Figure 99: PRODUCTION FLOW at Turbine Trade School**  
Credit: Author



## Chapter 10: Conclusion

The discussion regarding how to approach waterfront redevelopment for abandoned industrial landscapes will continue as we continue to reclaim these edges in the future. By approaching these spaces with a preference for specificity of place, we can discover design solutions we hadn't thought of before through historical, present day, and community stakeholder analysis.

This thesis sought to demonstrate how this method could be applied to a specific building, landscape, and region. The process and lessons learned can inform the approach for similar sites (but the solutions mustn't simply be replicated). Waterfront redevelopment should not be formulaic, rather it should reflect on all scales and periods of previous use to make an informed decision after thorough analysis. The proposal for this thesis is the culmination of historical cues, discussions with community stakeholders at all scales, and responses to environmental conditions that have long been ignored.

Ultimately, this method has resulted in the integration of a building into a landscape so that it acts as part of a new infrastructure which cleans water, supports urban agriculture, and provides recreational and training opportunities for the surrounding community. Flows have been repurposed to knit connections in all axes, and begin to mend and heal the water's edge.



**Figure 100: Thesis Defense Boards**  
**Credit: Author**

The thesis defense discussion on May 14<sup>th</sup> emphasized the need to bring this thesis to the Yonkers community and stakeholders. After presenting the thesis to experienced architecture professionals, they emphasized that it would be fruitful to hear the opinions of the community to further refine this proposal, but even more importantly, to demonstrate to the community the exceptional possibilities for the reuse and revitalization of this site and building that honors both its past uses and present needs. Truly, there is a hopeful future for this site that is rich with history, community, and potential.

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