Long Beach, NY

SUSTAINABLE NEIGHBORHOOD ASSESSMENT

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SUSTAINABLE NEIGHBORHOOD ASSESSMENT USING LEED-ND

Through the Sustainable Neighborhood Assessment Tool developed by Global Green USA, public officials and local government staff are using the LEED for Neighborhood Development (LEED-ND) rating system to determine ways for future development in their communities to achieve high levels of environmental, economic, and social sustainability. LEED-ND integrates the principles of smart growth, walkable urbanism and green building into the first national rating system for neighborhood design. In Long Beach,NY, Global Green used the tool as a means to evaluate existing conditions and plans for the West End Neighborhood, in order to identify opportunities to augment current revitalization efforts and develop recommendations to increase the neighborhood's overall level of sustainability.

ENVIRONMENTAL PROTECTION AGENCY

Technical Assistance provided by Global Green USA with the US Green Building Council to Long Beach was made possible through funding from the US EPA's Office of Sustainable Communities Building Blocks for Sustainable Communities Grant Program.

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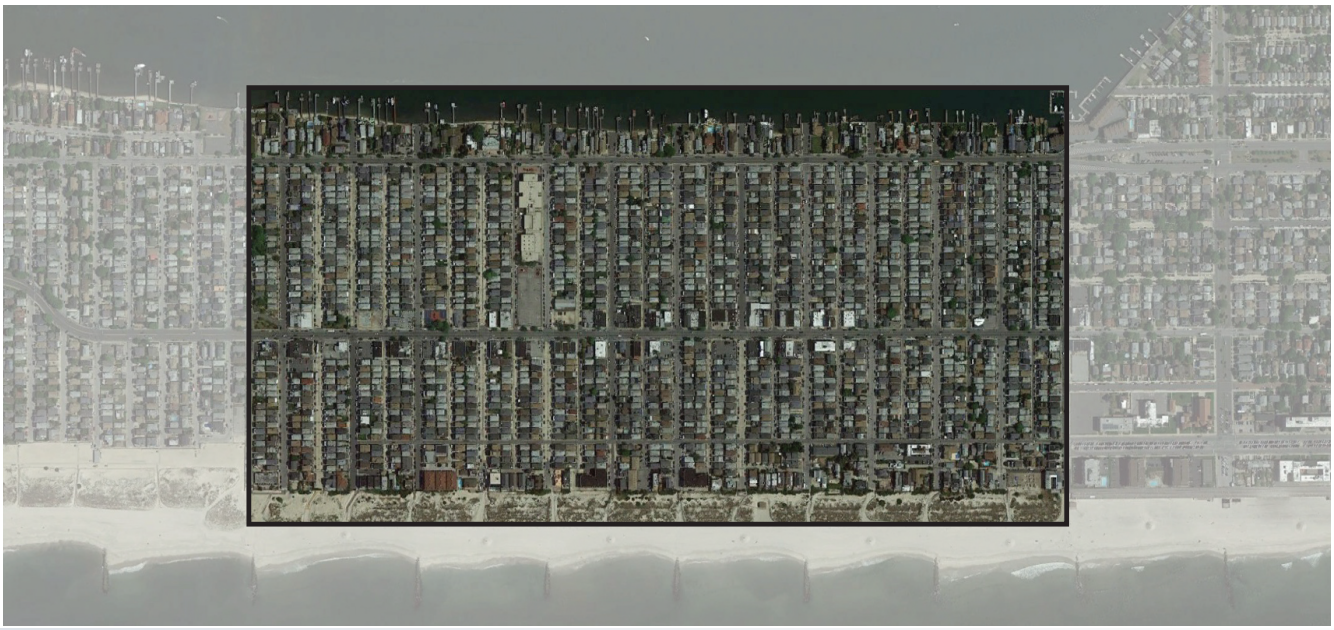


NEIGHBORHOOD LOCATION

NEW YORK STATE

LOCATION IN NEW YORK

NASSAU COUNTY

THE WEST END

SUSTAINABLE NEIGHBORHOOD ASSESSMENT PROCESS

The goal of the Sustainable Neighborhood Assessment process is to identify topical and physical focus areas where policy or planning changes will promote sustainable urban development over the short and long term. These interventions will improve the neighborhood's day-to-day sustainability as well as increase its resilience during future weather events. To define these focus areas, Global Green USA and its team members utilize the Sustainable Neighborhood Assessment Tool, which is based on the LEED for Neighborhood Development (ND) criteria and checklist.

The site visit to Long Beach's West End is part of a special effort to respond to Superstorm Sandy affected communities- expanding the scope of the Sustainable Neighborhood Assessment to include resiliency. Resilient neighborhoods are better prepared to withstand, respond to, and recover from extreme weather events associated with global climate change. The assessment provides insight on how neighborhoods can reduce impact risks, facilitate a swift recovery, and increase their adaptive capacity. These attributes are embedded within sustainable neighborhoods, thus establishing a balance for future generations.

Prior to visiting the assessment area, the team conducted a thorough baseline review of existing planning documents, code requirements, flood maps, and stakeholder priorities. An initial assessment was then completed, with the credits in each of the three LEED-ND categories (Smart Location & Linkages, Neighborhood Pattern & Design, and Green Infrastructure & Building) marked as "achieved," "not achieved," "unknown," or "not applicable." Each credit is further ranked for the degree that it correlates to regional or local policy priorities, regulatory support, technical feasibility, market support, and stakeholder input.

This initial assessment serves as the point of departure for the Global Green team's three-day site visit and evaluation. During the visit, the team walks each block of the target neighborhood, photographs examples of positive qualities and areas for improvement, and conducts a series of meetings with targeted stakeholders, city staff, and representatives of relevant public agencies. Throughout the process, the preliminary checklist is edited and refined to incorporate the team's visual observations and contextual issues raised by stakeholders. The initial findings of the evaluation are grouped into broad categories noted on the next page. The final augmented checklist for the West End can be found on pages 17-20.

The assessment process then enables the team to identify a series of recommendations based on LEED-ND credits that are applicable to disaster risk reduction. Recommendations also cover policy, planning, and development changes which aim to realize a more resilient and sustainable future for Long Beach. Some recommendations can be implemented fairly quickly, while others will require long-term collaboration among public agencies, local institutions, and private sector partners, as well as multiple sources of funding.

NEIGHBORHOOD BACKGROUND

Long Beach's West End is defined by Reynolds Channel to the north, the Atlantic Ocean to the south, New York Avenue to the east, and Nevada Avenue, the city boundary, represents the western border of the study area. The extensively built out West End is only a half mile wide from ocean to bay, and nearly all of the neighborhood is within the FEMA 100 year floodplain. Three roadways follow an east-west axis in the West End - arterials Park Avenue and Beech Street, each with one travel lane in either direction, and Oceanview, a one-way street that the city has converted into a semi-protected pedestrian and bicyclist passageway. The West End has a fire station, an elementary school, a community center and houses of warship, but the overwhelming majority of the neighborhood is comprised of residential structures. Beech Street is the exception, and contains a mix of restaurants, bars and retail establishments, though the distribution is heavily skewed towards restaurants and bars. The West End is a historically working class community that has experienced a pronounced demographic and characteristic shift as it is transformed by market pressures while simultaneously being rebuilt in the wake of Superstorm Sandy.

Long Beach as a whole, and the West End in particular, were devastated by Superstorm Sandy, with the West End being one of the hardest hit communities in the nation. Nearly all of the West End was inundated, with water enveloping the neighborhood from the Atlantic as well as the Bay side. The resulting damage left residents without electricity, water or sewage for two weeks and the majority of bungalow-style homes typical to the neighborhood were flooded. Much of the disproportionate level of damage experienced in the West End as opposed to Long Beach as a whole can be attributed to four key characteristics: 1) Nearly the entire neighborhood lies within a FEMA Special Flood Hazard Area, 2) all structures, pipes and roadbed are laid directly on sand, 3) the coastal dunes were not maintained at the necessary height (as discussed in Costal Planning and Engineering Inc.'s [CPE] 2009 Costal Protection Study), and 4) bulkheading along the bay side is inconsistent (also identified in the 2009 CPE study). In addition to its low lying nature, lack of bedrock and inconsistent bulkheading, the West End is also characterized by a particularly high water table - as high as 1 feet in most locations, with a maximum depth of 5 feet. This fact, coupled with the lack of unpaved open space contributes to an extremely tenuous relationship with stormwater management in the West End during rainfall levels typical to the region, let alone catastrophic storm events. Rebuilding efforts following the storm have progressed steadily and are on track to continue for several years as recovery funds and city reinvestment is worked out. West School, which was severely damaged by flood waters recently rebuilt its entire ground floor with materials capable of resisting major water damage. Many homeowners in the neighborhood have begun raising their homes above the floodplain - either by literally raising the existing structure on top of driven piles or completely rebuilding.

The West End's ease of access to the beach is a major asset and challenge

NEIGHBORHOOD HIGHLIGHTS

CYCLING ROUTE

TRANSPORTATION

URBAN CHARACTER

DAILY USES

APPROACH AND STRATEGY

The recommendations presented over the following pages were developed through careful study of regional and local planning documents, city staff and stakeholder interviews and thorough on-the-ground analysis of community characteristics. Each of the resulting recommendations have been produced with specific attention given to long-term sustainability and resilience, and have been informed by best practices as identified by LEED-ND.

Six key overarching themes represent the underlying specific recommendations: 1) Living with Water, 2) Green Space / Active Space, 3) Rebranding and Reinvesting, 4) Cyclist and Pedestrian Infrastructure, 5) Parking Management and 6) Additional Recommendations. Living with Water recognizes that in addition to being built in a low-lying area with very little permeable surfaces and a high water table, models demonstrate that over the next 100 years, extreme weather events and storm flooding will become far more frequent. As a result, these recommendations accept this eventuality and help position the neighborhood to adapt to, and rebound from, the consequences of major storm events. Green Space / Active Space addresses the overwhelming lack of open space in the West End. These recommendations not only seek to connect residents with the bay side of their neighborhood, but also encourages areas that foster recreation and serve to absorb stormwater. Reinvesting turns an eye towards the West End's economic vitality, which, along with some opportunities, has experienced pronounced difficulties in the wake of Sandy. These recommendations focus on investments and improvements that can help foster an identity for the neighborhood and create a business environment that invites and encourages a diverse mix of offerings. Cyclist and Pedestrian Infrastructure confronts a West End that is dominated by private vehicle use, and as a result has clogged the streets and propelled lack of parking to its position as one of the greatest annoyances in the neighborhood. The recommendations contained within this theme work toward accommodating those experiencing the neighborhood outside of automobiles and encouraging others to follow suit. Parking Management takes on the long standing challenge of providing adequate parking for a neighborhood that is not only densely developed, but also home to many bars and restaurants without private lots. The implementation of these proposed recommendations will help alleviate these pressures and maximize parking efficiency.

Perhaps the most significant challenge facing the implementation of these recommendations, and indeed the long-term sustainability of all of Long Beach, is the reality of rising sea levels and increased occurrences of catastrophic storm events. EPA data reveals that by 2100, New York City will see a 2.3 foot rise in surrounding sea level and an increase in major storm events. An increase in flooding will accompany these changes as what are characterized as floods today will be described as high tides in years to come. All of this will be compounded by Long Beach's high water table and low permeability. To achieve resiliency in this new era, Long Beach must begin laying infrastructure now that can withstand and bounce back from frequent inundation without continual rebuilding funding from external sources. A prevalent theme throughout the Assessment was a lack of connection to the natural processes of the island. Long Beach has been vastly altered from its natural state over its existence, but it's role as an barrier island on the Atlantic Coast remains - frequent storms, surge flooding, overwash and pooling water are normal, natural processes that are to be expected. As the frequency of these events increases, however, the city must make infrastructure upgrades and rebuilding efforts now that contribute to its long-term sustainability.

RECOMMENDATIONS

Six thematic recommendation elements have guided the development of specific opportunities for intervention and transformative change. Through the implementation of the recommendations made in the following pages, Long Beach's West End can shift towards a more resilient and adaptive neighborhood, better equipped to handle future major storm events.

Recommendation 1: Living with Water
Recommendation 2: Green Space / Active Space
Recommendation 3: Reinvesting
Recommendation 4: Multi-Modal Infrastructure
Recommendation 5: Parking Management
Recommendation 6: Additional Recommendations

Damage caused by Superstorm Sandy included major infrastructure disruption due to the sandy foundation of the West End

LIVING WITH WATER

Recommendation 1

Long Beach's position on a barrier island coupled with the projected increase of major storm events dictates that as a matter of self preservation, the city must take major steps to adapt to and live with this new reality. Compounding this increase in vulnerability is the West End's low-lying nature, high water table and insufficient stormwater management infrastructure.

While on their site visit, the team observed localized flooding and backed-up storm drains during relatively weak rainfall. Though the city routinely cleans the drains in the West End, the prevalence of sand in the neighborhood as a result of its proximity to the beach combined with foundations built upon sand demonstrates that more robust water management solutions are needed. This observation highlights the need for a major overhaul of the stormwater network in order to prevent inundation during larger storms. LEED-ND's Green Infrastructure and Building (GIB) category addresses these issues with credit 8, Stormwater Management. This credit seeks to reduce flooding through infiltration, evapotranspiration and reuse, encouraging developers to retain on site stormwater from an 80th percentile rainfall event. Smart Location and Linkages (SLL) pre-requisite 5, Floodplain Avoidance, requires previously developed land in the 100 year floodplain be built according to the National Flood Insurance Program's (NFIP) requirements, and that critical facilities- in this case, the fire station on Park and Indiana- be built to be protected and operable during a 500 year event as defined by FEMA.

Extrapolating this approach and applying it to the West End, the most critical strategy is for green infrastructure best management practices to be integrated into every upgrade and rebuild the city is currently pursuing.

Through the integration of creative facade treatments for non-habitable spaces, a welcoming pedestrian environment can be retained while protecting structures from flooding

RESPONSIBLE DEPARTMENTS

Building
Public Works
Transportation
Water + Sewer

1 LIVING WITH WATER

Action Items:

1. **Streets:** Develop a Green Streets ordinance designed to capture, clean and store stormwater. As a result of the West End's high water table, creative storage solutions such as underground cisterns must be developed. The integration of bioswales along Beech Street would help store and clean stormwater with minimal maintenance while simultaneously introducing noticeably absent landscape elements along the West End's commercial corridor. Finally, a concerted street tree planting effort along the neighborhood's north to south running residential streets would assist with stormwater management through increased infiltration, interception and transpiration.

2. **Infrastructure:** As identified in the New York Rising Community Reconstruction Plan (CRP), much of the West End's stormwater management infrastructure must be upgraded, both to reduce flooding and repel storm surges. Specifically, the capacity of the West End's pump station must be increased to accommodate larger loads and outfall pipes and inlets should be engineered to prevent back flow and closely maintained to ensure they are not clogged with sand. The US Army Corps of Engineer's sand dune reconstruction effort is absolutely critical, but as discussed in the CRP, without a continuous bulkheading effort along the Bay side of the West End, the community is still highly vulnerable to inundation, particularly because this is the lower-lying side of the neighborhood. Finally, all improvements on city owned property should be viewed as an opportunity to simultaneously introduce stormwater management strategies.

3. **Structures:** In addition to raising houses to meet NFIP requirements, private structures within the west end should be built in a manner that preserves the streetscape through facade treatments. The city should consider requiring the use of water resistent construction materials for any building components located below the 100 year floodplain and develop incentive programs to encourage homeowners to install stormwater capture devices such as green roofs, rain barrels and rain chains.

Backed up stormwater inlet during minor storm

Stormwater outfall into Bay

GREEN SPACE / ACTIVE SPACE

Recommendation 2

While the beach and Atlantic Ocean are major draws for residents and visitors alike, there remains a disconnect between the West End and the Bay, a deficiency of street trees and a critical lack of open space, both for passive and active recreation. The playground at West School, the largest site for recreational opportunities in the West End, is entirely made of asphalt, simultaneously contributing to stormwater runoff and the urban heat island effect while presenting an opportunity to introduce green space into the community through the inclusion of a playfield.

The LEED-ND category Neighborhood Pattern and Design (NPD) pays particular attention to creating community assets that connect residents with nature and provide opportunities for recreation. NPD Credit 9, Access to Civic and Public Spaces, Credit 10, Access to Recreation Facilities, and Credit 14, Tree-Lined and Shaded Streets, highlight the value of communities with abundant open and active space. Credit 9 calls for parks and plazas at least 1/6 an acre in size and with a 1/4 mile walk distance of 90% of dwelling units. Credit 10 shifts attention towards the creation of indoor or outdoor facilities for active recreation within a 1/2 mile walk distance of 90% of dwelling units. Credit 14 seeks to create an abundant urban canopy by providing street trees on both sides of at least 60% of streets within the project boundary.

Taken in aggregate, these credits embody the principles of biophilic design and foster an urban realm that connects residents and visitors with their natural surroundings and improves physical and mental health. As mentioned above, despite the West End's adjacency to the ocean, it lacks the connectivity to both passive and active opportunities to interact with other members of the community and with nature.

Common streetscape found in the West End, demonstrating a lack of green space

RESPONSIBLE DEPARTMENTS

Public Works

Recreation

2 GREEN SPACE / ACTIVE SPACE

Action Items:

1. **Bayside Access:** Currently, the West End is effectively cut off from the Reynolds Channel- both physically as well as visually. This lack of connectivity was brought up during many of our interviews, and many view the channel as an untapped resource. While nearly the entire northern side of Park Avenue in the West End is comprised of private houses, the fire station on Park and Indiana presents an opportunity for a small dock at the terminus of Indiana. While specific design strategies and approaches abound, the creation of a small civic space cantilevered over the bulkheads would provide West End residents with an opportunity to engage with the bay and fellow residents.

2. **West School Playground:** As mentioned previously, the West End is marked by a critical lack of green space and recreational facilities. Though the physical constraints and built out nature of the neighborhood makes creating new recreational facilities difficult, the West School's 3/4 acre asphalt playground presents an opportunity to create an active recreation facility with field space. The introduction of active green space in a neighborhood sorely lacking it would provide a mutually beneficial arrangement for both West School students and West End residents alike.

3. **Urban Green:** Though Beech Street has a lively canopy of street trees, the rest of the West End's offering of trees and plantings is sporadic at best. The city should consider requiring street tree installation concurrent with the raising of structures to meet FEMA standards. The community garden on Beech and Michigan is a good start, and this model should be followed at each of the public parking lots in the neighborhood as well as at the Georgia Avenue playground. Finally, the city can encourage the introduction of more green space into the neighborhood by holding a green your block contest as part of a West End Arts event.

Publicly owned parking lots in the West End provide an opportunity for introducing trees and plants into the neighborhood

MULTI-MODAL INFRASTRUCTURE

Recommendation 3

Many of the environmental, social and economic gains found within LEED-ND are achieved through the deliberate integration of urban design principles that yield a walkable and bikeable community with nearby destinations, opportunities for engagement and supportive infrastructure. Key characteristics of this vision include densities of at least 7 dwelling units per acre, at least 140 intersections per square mile, sidewalks with minimum intrusions for driveways, a clearly delineated bicycling network and a robust network of bicycle storage options. With these attributes in place, residents and visitors are less likely to rely on private vehicles to satisfy their daily needs, and in turn, reduce the emissions associated with these trips.

In addition to a variety of shops and restaurants along Beech Street, the West End has many of the characteristics conducive to a walkable urban realm mentioned above. The presence of continuous sidewalks, a connected and walkable street grid, and a centrally located school means that with a few strategic interventions, the West End can become the walkable and cycleable hub of Long Beach.

The partially segregated pedestrian / cyclist route along Oceanview is a great resource, and can become a cycling corridor connecting the West End to the rest of the city by connecting to the Boardwalk at New York Avenue. As highlighted by LEED-ND Smart Location and Linkage credit 4, Bicycle Network and Storage, however, is the lack of storage options for cyclists once they dismount- a critical element of any truly bikeable destination. While the West End is well served by bus- including the new trolly line- it's transit facilities lack clear signage, shelter or bicycle racks, which will help reinforce the neighborhood's identity as an area not reliant on private automobile use.

RESPONSIBLE DEPARTMENTS

Transportation

Prioritized bicycle access on Oceanview provides a popular and needed network, but can be dramatically improved with relatively simple interventions.

3 MULTI-MODAL INFRASTRUCTURE

Action Items:

1. **Walking:** While the neighborhood pattern found in the West End- a mixture of uses and a building height to street width enclosure of at least 1:3 on Beech Street, continuous sidewalks and a high level of intersections- is characteristic of a walkable community, there remains room for improvements that would further propel the neighborhood toward a safe and welcoming pedestrian environment. Signalized intersections along Beech are in need of more visible crossing lines and dedicated pedestrian signals. Many of the sidewalks along Beech are at least 10 feet wide, in line with NPD credit 1, though others are not and some are obstructed by traffic lights. The city should consider requiring all new construction along Beech to expand sidewalk width to a minimum of 10 feet. Strategically placed sidewalk bulbout extensions should also be considered along Beech Street.

2. **Biking:** Again, due to the limited land area in the West End and the existing cycling infrastructure along Oceanview, a few strategic improvements would dramatically improve cycling access and safety in the community. The city should transform Oceanview into a fully developed cycling facility with green painted bike lanes and a direct connection to the Long Beach Boardwalk bike path. The asphalt median between these lanes should be repaved with permeable pavers and graded to the center, creating a pleasant pedestrian amenity to help reinforce Oceanview's role as route prioritized for non-motorists. Finally, recognizing Oceanview's role as a circulator for the one-way streets between Beech and Oceanview, stop signs should remain in place for vehicles, but yield signs should be installed for cyclists to further reinforce their priority along this route.

3. **Transit:** The West End is well served by transit- even during evenings and weekends, as required by Smart Location and Linkage credit 3. The new trolly line will only help to reinforce this network. What is lacking, in part due to space constraints, is clear signage, covered shelters or secure bicycle parking at these locations. Addition of these elements should be considered with new development.

Bicycle storage options are typically few and far between

The pedestrian streetscape must be prioritized and accommodated with any improvements made along Beech Street.

PARKING MANAGEMENT

Recommendation 4

Throughout our visit, residents, stakeholders, business owners and city staff all identified a critical lack of parking as one of the West End's most pressing problems. A combination of a narrow strip of land, dense development, a limited number of public lots, and a massive influx of summer visitors has lead to an intractable and persistent parking crisis in the West End that has existed for generations.

Though LEED-ND is resolute on the need for a robust network of multi-modal transportation alternatives and a compact development pattern of mixed uses as a mode for reducing automobile dependency, the rating system recognizes that private vehicles remain an integral mode of travel. To reach a nuanced balance between this reality and the needs of pedestrians, cyclists and transit users, Neighborhood Pattern and Design (NPD) credit 5, Reduced Parking Footprint provides guidance on reaching this equilibrium. This credit seeks to limit the construction of new surface parking lots, and locate those that are constructed at the side or rear of structures so as not to interrupt the pedestrian environment. This credit also requires the construction of secured bicycle facilities to further encourage this mode of transportation. Smart Location and Linkage (SLL) credit 3, Locations with Reduced Automobile Dependence, again works toward mitigating parking pressures by providing reliable transit services and easily accessible stations. Given the influx of visitors arriving from the Long Island Rail Road and the draws of downtown, the city should explore the creation of a larger downtown parking structure and a focused circulator service to bring people to the West End without their vehicles.

Applying LEED-ND's specifications to the particularities of the West End's development pattern and seasonal swing of parking needs requires a nuanced and multifaceted approach. While working to improve pedestrian, cyclist and transit user accommodations in the neighborhood, the city should investigate the feasibility of constructing a two story stacked parking structure spanning Vermont Street. An alternative approach is the exploration of an underground structure- a very expensive, but effective method that has been accomplished in other densely built cities with high water tables.

At the West End's current level of build out and lack developable land, options are limited for the addition of new parking spaces within neighborhood boundaries. In essence, 4 strategies exist: 1) build multi-level parking decks on the 6 existing publicly owned lots, 2) build a large parking structure- either above or below grade- where the West School playground is currently sited, 3) purchase privately held parcels in order to raze structures and add parking or 4) build additional parking capacity elsewhere in the city and provide a shuttle service to the West End. Option 4 is the recommended strategy for adding an impactful number of physical parking spaces, as echoed by the city commissioned Level G Associates parking study conducted in 2008.

RESPONSIBLE DEPARTMENTS

Transportation

PARKING MANAGEMENT

Action Items:

1. **Lots:** In the short term, the city should investigate parking layout strategies in their existing lots in the West End as each may be able to yield a handful of more spaces with optimized striping patterns. Longer term attention should be given to building parking structures upon the 6 public lots in the neighborhood. The city should also seek funds to conduct a feasibility study for the construction of a multi-level parking structure on the West School playground - this can either be accomplished by building the structure below grade, or capping an above ground structure with a playground. Finally, there are several privately owned parking lots along Beech Street in the West End that the city should partner with to further increase vehicle storage capacity in the neighborhood.

2. **Management:** Given the intense parking demands found in the West End and the pervasiveness of this issue across a broad spectrum of stakeholders, it is clear that the city is in need of a holistic restructuring of its parking policies in the neighborhood. A parking management district can be established to help generate funds for construction of the multi-level structures recommended above. This parking management district may also be able to pool both public and private parking lot resources into a single neighborhood service. A weekend valet service, administered by the parking management district, can further help alleviate the visitor season crunch. The city should explore restricting parking along the state streets to residents only during the summer months while simultaneously raising parking permits for city facilities to a competitive rate. Finally, as discussed in this section's introduction, all of these interventions must be supplemented with a commensurate investment in improving public transportation services and facilities.

Some of the parking lots in the West End may be suitable for decked parking or alternative parking management strategies to maximize efficiency.

REINVESTING

Recommendation 5

The West End is a full time community that blossomed from a historical summer retreat and continues to grow and transform while simultaneously rebuilding and restructuring in the wake of Superstorm Sandy. To ensure the neighborhood's long-term economic sustainability, the services, amenities and characteristics of the community must reflect this transition.

The foundation of comprehensive neighborhood reinvestment lies in the creation of a Business Improvement District (BID) that can act as a champion for neighborhood improvements on behalf of the business community. Upon formation, the West End BID could advocate for a more diverse mix of business offerings, operate a parking management district and pool financial resources for maintenance, cleaning or rebranding efforts such as banners, signage and kiosks.

LEED-ND sets districts along a trajectory for economic sustainability through 3 credits in the Neighborhood Pattern and Design (NPD) category. NPD Credit 7, Transit Facilities, underscores the value in well designed transit shelters that include signage and information about the route and its surroundings- which presents a rebranding opportunity for the West End. NPD Credit 3, Mixed Use Neighborhood Centers, seeks to cluster a diverse array of land uses in a centrally located part of the neighborhood. A rich diversity in land uses helps support a community and local businesses while reducing reliance upon private automobiles and their associated carbon emissions to meet daily needs. In order to support a mix of land uses in the neighborhood, NPD Credit 2, Compact Development, awards points for residential dwelling unit densities above 10 per acre, which in turn provides the critical mass of residents and customers for these establishments.

RESPONSIBLE DEPARTMENTS

Community Development

Economic Development

REINVESTING

5 Action Items:

1. **Business Improvement District:** The city should encourage businesses and property owners to explore the creation of a West End Business Improvement District (BID). This BID would enable members to actively court desired businesses, collect and allocate funds towards street furniture and holiday lights, develop branding, and present a unified voice and vision for parking management decisions.

2. **Identity:** As the West End continues to evolve, a concerted branding effort should be undertaken in order to announce the community to visitors and evoke pride and ownership amongst residents. The existing pop-up shop and artistic events held throughout the West End should be encouraged and bolstered by a BID and local organizations. Additionally, a branding strategy with signage, banners and logos, tied in with the existing public transportation network, would help present a unified West End.

3. **Density:** Encourage the creation of residential units above ground floor commercial structures along Beech Street.

Though markets and daily needs such as hardware stores can be found, the West End is predominantly characterized by bars and restaurants

ADDITIONAL RECOMMENDATIONS

Recommendation

6

RESPONSIBLE DEPARTMENTS

Building
Economic Development
Public Works

Recognizing that Long Beach as a whole, and the West End in particular, are in need of strategic rebuilding and restructuring in order to attain a more resilient and sustainable community, the following action items are presented as additional recommendations capable of making the most significant impact.

LEED-ND is capable of guiding communities in a sustainable direction, but the implementation of these principles is reliant upon dedicated planning professionals in city hall to ensure appropriate application. As described throughout this document, the West End is most vulnerable to inundation from the Reynolds Channel. As a result, the city must have a consistent bulkhead height throughout the exposed area in order to protect against future storm surges. LEED-ND's Green Infrastructure and Building (GIB) category contains several prerequisites and credits relating to building energy and water efficiency as well as construction waste management. As the city rebuilds, new structures should be built to these standards in order to maximize efficiency over time. Finally, as described in the introduction, many of Long Beach's most pressing challenges relating to climate change are a result of its location on a barrier island in a hurricane prone part of the Atlantic Seaboard. Consequently, the city must make a concerted effort to educate members of the community about the associated implications of its positioning to encourage proactive retrofits by individual homeowners. Education can take many forms, from interpretive signs along the city boardwalk explaining the natural function of a barrier island to the messaging in official city documents reiterating the importance of retrofitting structures.

6 ADDITIONAL RECOMMENDATIONS

Action Items:

1. **Full Time Planning Staff:** Long Beach is in critical need of full time planning professionals that can help the city establish policies that engender vibrant, sustainable neighborhoods. Though planning positions have been funded through May 2015 with a grant, the city should consider a long term strategy to fund these critical positions.
2. **Consistent Bulkheading:** The channel side of the West End is the lowest lying part of the neighborhood and in turn, most prone to inundation. Without a uniform height and consistency in materials, bulkheads do not protect the community.
3. **Energy and Water Efficiency:** The city should establish building minimum energy and water efficiency standards for all new structures. NPD Prerequisites 2 and 3 require a 10% reduction over ASHRAE 90.1 for energy and a 20% reduction over baseline for water.
4. **Communication:** The reality of Long Beach's precarious position on a barrier island in an era of increasingly common extreme weather events cannot be understated. The city must make every effort to communicate the implications of this serious reality and the requirements for action to be taken.

Rebuilding presents an opportunity to construct resilient, efficient structures

SUSTAINABILITY ASSESSMENT

LEED-ND Checklist

The Sustainable Neighborhood Assessment tool includes an annotated LEED-ND checklist created by Global Green. It is a key component of the process used to document and compare the assessment area against the LEED-ND prerequisites and credits. Each credit within the three credit categories (Smart Location & Linkage, Neighborhood Pattern & Design, and Green Infrastructure & Building) is marked as "achieved," "not achieved," "unknown," or "not applicable" under baseline conditions. Additional analysis has been done based on local planning policy, regulatory support, technical feasibility, market support and stakeholder input. The preliminary checklist analysis was edited after site visits, stakeholder meetings, and conversations with city staff. This information was then translated into an overall assessment of sustainable neighborhood performance.

LEED for Neighborhood Development: Project Assessment Checklist

WEST END

LONG BEACH, NEW YORK

Baseline Conditions	Local/Regional Planning Priority	Regulatory Support	Technical feasibility	Market Support	Neighborhood Need/ Stakeholder Input

Legend	
✔	Achieved
?	Unkown
✕	Not Achieved
–	Does not exist/ NA
	Explicit support/ no technical issues
	Lack of explicit support/ minor technical issues
	Opposition/ signficant technical issues
	Not Applicable

Smart Location & Linkage			Total Points
✔	P 1	Smart Location	Required
–	P 2	Imperiled Species and Ecological Communities	Required
✔	P 3	Wetland and Water Body Conservation	Required
–	P 4	Agricultural Land Conservation	Required
✔	P 5	Floodplain Avoidance	Required
✔	C 1	Preferred Locations	
–	C 2	Brownfield Redevelopment	
✔	C 3	Locations with Reduced Automobile Dependence	
✕	C 4	Bicycle Network	
✕	C 4	Bicycle Storage	
✕	C 5	Housing and Jobs Proximity	
–	C 6	Steep Slope Protection	
–	C 7	Site Design for Habitat or Wetland and Water Body Conservation	
✕	C 8	Restoration of Habitat or Wetlands and Water Bodies	
✕	C 9	Long-Term Conservation Management of Habitat or Wetlands and Water Bodies	

SUSTAINABILITY ASSESSMENT

LEED-ND Checklist

LEED for Neighborhood Development: Project Assessment Checklist

WEST END

LONG BEACH, NEW YORK

Legend	
✔	Achieved
?	Unkown
✕	Not Achieved
_	Does not exist/ NA
	Explicit support/ no technical issues
	Lack of explicit support/ minor technical issues
	Opposition/ signficant technical issues
	Not Applicable

		Baseline Conditions	Local/Regional Planning Priority	Regulatory Support	Technical feasibility	Market Support	Neighborhood Need/ Stakeholder Input	
Neighborhood Pattern & Design								
✔	P 1							Required
✔	P 1							Required
✔	P 1							Required
✕	P 1							Required
✔	P 2							Required
✔	P 3							Required
✔	C 1a							
✔	C 1b							
✕	C 1c							
✕	C 1d							
✔	C 2							
✕	C 3							
✕	C 4							
✕	C 4							
✕	C 5							
✔	C 6							
✕	C 7							
✕	C 8							
✔	C 9							
✕	C 10							
✕	C 11							
✔	C 12							
✕	C 13							
✕	C 14							
✔	C 15							

SUSTAINABILITY ASSESSMENT

LEED-ND Checklist

LEED for Neighborhood Development: Project Assessment Checklist

WEST END

LONG BEACH, NEW YORK

Legend	
✔	Achieved
?	Unkown
✕	Not Achieved
–	Does not exist/ NA
	Explicit support/ no technical issues
	Lack of explicit support/ minor technical issues
	Opposition/ signficant technical issues
	Not Applicable

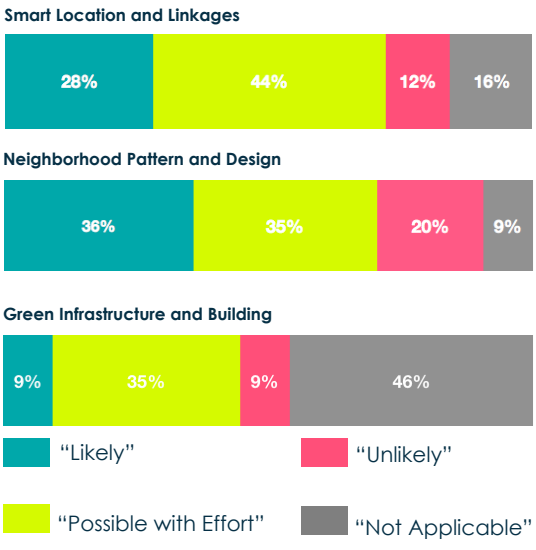
	Baseline Conditions	Local/Regional Planning Priority	Regulatory Support	Technical feasibility	Market Support	Neighborhood Need/ Stakeholder Input		
Green Infrastructure & Buildings								
✕							P 1	**Certified Green Building**	Required
✕							P 2	**Minimum Building Energy Efficiency**	Required
✕							P 3	**Minimum Building Water Efficiency**	Required
✔							P 4	**Construction Activity Pollution Prevention**	Required
✕							C 1	**Certified Green Buildings**	
✕							C 2	**Building Energy Efficiency**	
✕							C 3	**Building Water Efficiency**	
–							C 4	**Water-Efficient Landscaping**	
✔							C 5	**Existing Building Use**	
✕							C 6	**Historic Resource Preservation and Adaptive Reuse**	
–							C 7	**Minimized Site Disturbance in Design and Construction**	
✕							C 8	**Stormwater Management**	
✕							C 9	**Heat Island Reduction**	
–							C 10	**Solar Orientation**	
✕							C 11	**On-Site Renewable Energy Sources**	
✕							C 12	**District Heating and Cooling**	
✕							C 13	**Infrastructure Energy Efficiency**	
✕							C 14	**Wastewater Management**	
✕							C 15	**Recycled Content in Infrastructure**	
✕							C 16	**Solid Waste Management Infrastructure**	
✕							C 17	**Light Pollution Reduction**	

SUSTAINABILITY ASSESSMENT

LEED-ND SCORE

Based on the in-field assessment, planning document review, various stakeholder meetings, the Global Green team estimated which LEED-ND credits were "Likely," "Possible with Effort," "Unlikely" to be achieved, or "Not Applicable," considering existing conditions, technical feasibility, policy readiness, financial burden, and applicability to neighborhood conditions. The bar graph summary identifies the overall level of sustainable neighborhood performance for the West End. Many credits fall into the "Likely" category, and of the remaining credits, a significant percentage fall within the "Possible with Effort" category, which shows the large potential for improving the sustainability of the neighborhood, specifically by pursuing the high-priority recommendations described in this report.

The summary table below shows the numeric values extrapolated from the percentage of credits identified as "Likely" below. The recommendations listed in the previous pages are largely a response to LEED-ND criteria which achieving was identified as "Possible with Effort" by the assessment team. While these values do not correlate exactly to specific LEED-ND points, they provide an estimate of the neighborhood's potential level of future achievement. It should be noted that this is a rough measure of performance and not an exact representation of the neighborhood's level of possible certification. It should also be noted that all the prerequisites need to be achieved if certification will be pursued. While recognizing these constraints, the categories generated through the assessment serve as a useful metric for estimating formal LEED-ND certification. Given the presumption that all those designated as "Likely" would be achieved, providing a baseline point tally of 26, and those listed as "Possible with Effort", are aggressively pursued and achieved, affording an additional 37 points, the analysis shows that the West End would likely earn a rating of GOLD from the USGBC.



Long Beach New York, West End

LEED for Neighborhood Development

	Total	Achievable	Possible
Smart Location and Linkage	27	8	12
Neighborhood Pattern and Design	44	16	15
Green Building and Infrastructure	29	3	10
	100	26	37

Point Requirements for LEED-ND Certification

Certified: 40-49 **Gold: 60-79**

Silver: 50-59 Platinum:80+

APPENDIX

A. LEED for Neighborhood Development Credit Categories

Smart Location and Linkage [SLL]:
SLL focuses on preserving the environmental characteristics inherent to the site such as water body and steep slope protection and influencing development patterns to reduce sprawl and automobile dependence. Credits in this category encourage locating new developments near city centers with robust public transportation options and sites that have been previously developed or are immediately adjacent to existing development.

Neighborhood Pattern and Design [NPD]:
NPD influences the physical layout and design of the community in question through minimum thresholds for density, internal and external connectivity, and characteristics of a walkable community such as continuous sidewalks or building frontages that face public streets. Credits in this category reward projects that have nearby civic, educational and recreational facilities, limited surface parking and have transportation facilities complete with maps and bicycle racks.

Green Infrastructure and Buildings [GIB]:
GIB emphasizes the importance of the optimized performance of structural systems and city infrastructure through minimum building energy and water efficiency, water-efficient landscaping and on-site renewable energy production. Credits in this category promote the adaptive reuse of existing buildings, on-site stormwater management, recycled content in infrastructure such as roadbeds and energy efficient traffic lights, street lights and water pumps .

For more information, please visit www.usgbc.org

B. Glossary of Terms

Biophilic Design - Design principles founded upon the theory that all humans possess an innate affinity for the natural world.
Bioswale - Stormwater management element filled with vegetation, compost and stones in order to slow, clean and infiltrate runoff.
Cistern - An underground tank used for storing water.
Evapotranspiration - The natural process of water entering the atmosphere from soli and plants though evaporation.
Green Infrastructure - Stormwater management strategy that utilizes elements such as bioswales, permeable surfaces, rain gardens and constructed wetlands.
Infiltration - The gradual transfer of captured stormwater from basins into the ground.
National Flood Insurance Program (NFIP) - Federal flood insurance program. Requires flood mitigation construction strategies.
Permeable Paving - Specifically engineered asphalt, concrete or other materials which enable stormwater to infiltrate into the ground.
Rain Chain - An alternative downspout used to funnel stormwater from roofs into cisterns, rain barrels or rain gardens.
Urban Heat Island Effect - Describes the distinct heat differential between urban and rural areas due to the embodied solar energy stored in elements found in the built environment such as concrete and asphalt.

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