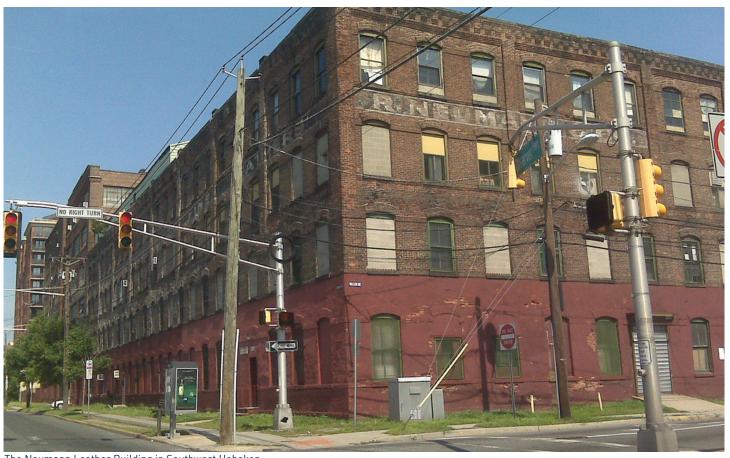
HOBOKEN, NJ

SUSTAINABLE NEIGHBORHOOD ASSESSMENT





The Neumann Leather Building in Southwest Hoboken



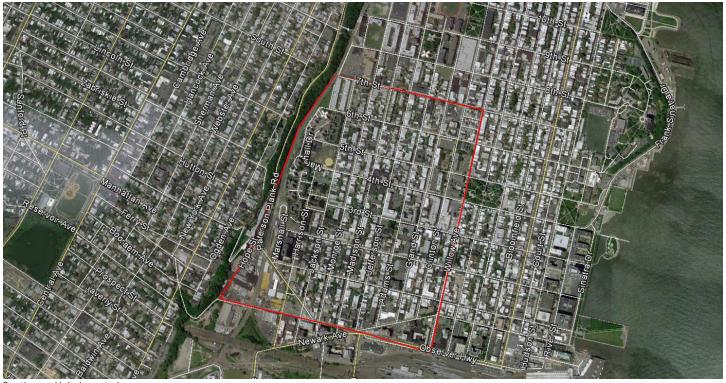


SUSTAINABLE NEIGHBORHOOD ASSESSMENT USING LEED-ND

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, new urbanism, and green building into the first national rating system for neighborhood design. Global Green used the tool as a means to evaluate existing conditions in Southwest Hoboken to augment future revitalization efforts and to develop recommendations to increase resiliency in the neighborhood.

ENVIRONMENTAL PROTECTION AGENCY

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



Southwest Hoboken study area

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FOCUS AREAS | Related LEED-ND Credits

Water

Category: Smart Location & Linkages

Housing and Jobs Proximity (credit 5)

Category: Neighborhood Pattern and Design Existing Building Reuse (credit 5)

Historic Preservation and Adaptive Reuse (credit 6)

Category: Green Infrastructure & Building Stormwater Management (credit 8)

Environmental Performance

Category: Green Infrastructure & Building

Certified Green Building (prerequisite & credit 1) Building Energy Efficiency (prerequisite & credit 2) Building Water Efficiency (prerequisite & credit 3) Infrastructure Energy Efficiency (credit 13) Recycled Content in Infrastructure (credit 15)

Housing

Category: Neighborhood Pattern & Design

Compact Development (prerequisite & credit 2) Mixed-Use Neighborhood Centers (credit 3) Mixed-Income Diverse Communities (credit 4) Access to Civic and Public Spaces (credit 9) Access to Recreation Facilities (credit 10) Community Outreach and Involvement (credit 12) Tree-Lined & Shaded Streets (credit 14)

Category: Green Infrastructure & Building

Certified Green Building (prerequisite & credit 1)

Building Energy Efficiency (credit 2) Water Efficient Landscape (credit 4) Solar Orientation (credit 10)

NEIGHBORHOOD LOCATION

NEW JERSEY







CITY OF HOBOKEN



SOUTH WEST HOBOKEN





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 resiliency 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 Southwest Hoboken is part of a special effort to respond to Hurricane 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 conducts a thorough baseline review of existing planning documents, code requirements, flood maps, and stakeholder priorities. An initial assessment is 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 in the grey box. These categories are presented and discussed at a community workshop. The dialogue and suggestions which emerge during the community workshop are incorporated into the final version of the checklist and this summary report of the assessment. The final augmented checklist for Southwest Hoboken can be found on pages 9-12.

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 Southwest Hoboken. Some recommendations can be implemented fairly quickly, while others will require long-term collaboration among public agencies, local institutions, and private sector partners.

The following documents were used by the assessment team to inform their recommendations:

2010 City Re-examination Report

2011 Sewer Monitoring Program Observations Southwest Hoboken Floding Analysis Hoboken Resiliency & Rediness Plan Hoboken Southwest Redevelopment Study

NEIGHBORHOOD BACKGROUND + IMPACTS FROM HURRICANE SANDY

The Southwest Hoboken assessment area is bound by Observer Highway to the south, Willow Avenue to the east, Seventh Street to the north, and the City's municipal boundary to the west. Southwest Hoboken is one of the lowest lying areas within the City of Hoboken and is home to Thomas G. Connors Elementary School, the Hoboken Housing Authority, Mama Johnson Field, the Hoboken Fire Department, and a Hudson-Bergen Light Rail Station.

Developed below sea level, Southwest Hoboken often experiences flooding during instances of heavy rain and high tide. During Hurricane Sandy, the neighborhood's low-lying elevation and high tides in the Hudson River exacerbated the storm's lasting impact. Parts of Southwest Hoboken endured up to seven feet of flood waters; stranding residents in their homes for over 72 hours. Basement level apartments were completely inundated, streets were impassable, and the electric and sewer utilities were not functioning for several days. With prolonged power outages and limited access to food, water, and other essentials, residents were heavily impacted during the week following the Hurricane. Southwest Hoboken is disproportionality populated by lowincome households and as such, sustained impacts during and after the Hurricane namely due to the age of the building stock difficult accessibility to higher ground and limited disposable income.

The impacts of Hurricane Sandy were intensified by the infrastructure and ground-water hydrology of the neighborhood, as Southwest Hoboken suffers from shortterm flooding multiple times a year, when a large amount of rainfall occurs over short period of time concurrent with a high tide. During these events, sewer outfalls from the Southwest neighborhood become blocked by tidal flow and water is not able to released into the Hudson River. Eventually, the storage capacity in the drainage system is exhausted and standing water accumulates in the neighborhood. This localized flooding often leads to street closures and traffic disruption. Low-lying basement or first floor spaces also suffer property damage or business closure due to flood waters. The severity of impacts from rain events have been reduced by the North Hudson Sewerage Authority's installation, in 2011, of a pump station near the intersection of Observer Highway and Washington Street. Additionally, the lack of open space in Southwest Hoboken minimizes the neighborhood's capacity to retain runoff, particularly because the water table is relatively high.

Looking forward, the City of Hoboken would like to integrate green infrastructure and low-impact development strategies into future redevelopment projects. goal is to reduce the impact of extreme weather events through incremental enhancements to public and private developments. Examples include the construction of curb extensions with bioswales, and rain gardens which will slow the rate at which water enters the combined sewer system and the water table. Multiple small-scale green infrastructure interventions will augment the larger scale grey water infrastructure investments that the City and other public agencies have already made. Just outside of the assessment area, the North Hudson Sewerage Authority has installed a surge pump near the Hudson River to push water from heavy rains and storm surge out from behind the River banks. Although this is helpful in heavy storm events, it is not effective when there is a combination of a high tide and heavy rains, as were the conditions during Hurricane Sandy.

A key parcel in the neighborhood, along Observer Highway, is occupied by the Neumann Leather building. This former industrial building provides an aesthetic connection to Hoboken's past while providing flexible creative, fabrication, media production, and general office space. The rehabilitation plan will explore options for preserving the density and diversity of uses in the Neumann Leather building, as well as neighborhood-wide options to update land use and zoning, establish environmental performance standards, preserve housing diversity, and integrate older structures into the new development.

Potential land use and zoning changes may also provide an opportunity for increased resiliency. A portion of the assessment area has been designated by the City as an "area in need of redevelopment." A designation which allows the collection of a tax increment to be reinvested within its boundaries to create greater opportunity for investment. (See map on next page) With that reinvestment the City can require more attention to resiliency and sustainability in future developments. Based on the team's review of the relevant regulations and plans for the neighborhood, a walking tour, and input from City staff and a number of community stakeholders, three short and long-term recommendations were identified. These recommendations are increasing flood preparation and neighborhood resiliency, maintaining and increasing housing and land use diversity, and improving the neighborhood's environmental performance.

NEIGHBORHOOD HIGHLIGHTS



TRANSIT OPTIONS



MATURE TREE COVER



COMMUNITY GARDEN



ACTIVE OUTDOOR SPACES



HISTORIC + MIXED USE STRUCTURES

INCREASE FLOOD PREPARATION AND NEIGHBORHOOD RESILIENCY

LEED-ND discourages new construction from being located in the 100-year floodplain. For existing neighborhoods, any development that is within the 100-year flood zone is required to meet the construction requirements of the National Flood Insurance Program. This typically means placing the first floor of any structure 3 feet above the base flood elevation. While this is possible for new construction, raising existing homes is often infeasible from either a cost or structural standpoint.

To reduce flood related impacts, Hoboken is in the process of adding a Flood Damage Prevention chapter to the municipal code that includes requirements for new construction. There are also exploratory discussions related to restricting residential uses on the ground floor of structures in the flood zone. These efforts will over time reduce property damage and disruption from stormwater related flooding. In the short-term there is an opportunity to adopt adaptive strategies in building use and construction.



COMMENDATION

RESPONSIBLE DEPARTMENTS

Departments of Public Works, Environmental Services, Planning and Zoning



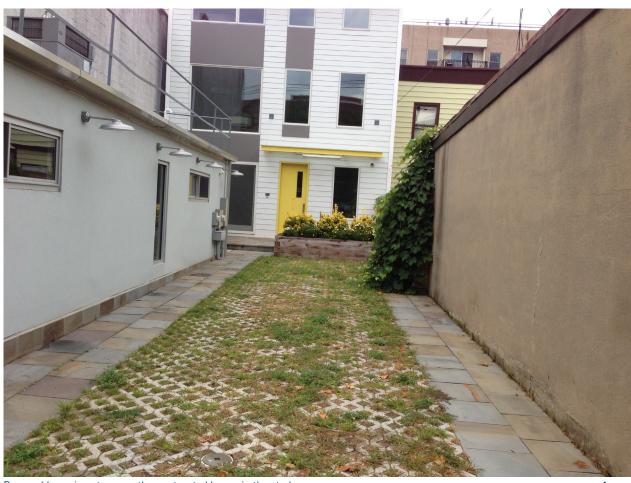
Flooding within the study area

INCREASE FLOOD PREPARATION AND NEIGHBORHOOD RESILIENCY

Recommendations:

- Establish a provision in the zoning code that allows for basement level apartments to be used for office uses. This would allow building owners to continue to earn revenue from the basement spaces, while reducing the risk to human life and personal property.
- Require the use of flood damage-resistant construction materials for any building components that are located below the Base Flood Elevation. These would include elements such as concrete or tile floors and paperless drywall.
- Promote the removal of impermeable surfaces and the installation of low-impact development (LID)

- features on residential property by establishing an incentive program with the North Hudson Sewerage Authority and by providing flexible standards for driveway, courtyard, or walkway paving.
- Add rain gardens and swales along public rights of way and through parkway planting, large tree wells, or the creation of landscaped traffic islands.
- Develop options to modernize and potentially expand the Neumann Leather building, while preserving the historic character and creative employment and light fabrication job base. Include LID measures in the frontage along Observer Highway.



Permeable paving at a recently constructed house in the study area

MAINTAIN AND INCREASE THE HOUSING AND LAND USE DIVERSITY OF THE NEIGHBORHOOD

Over-arching objectives of LEED-ND include supporting the social capital, physical health, and mental well-being within a neighborhood by providing a mix of land uses, diversity of housing types, and a variety of open spaces, to facilitate social networking, civic engagement, community cohesion, and physical activity.

As new development and renovations continue in the area, it is important to have development standards in place that preserve the current diversity and address emerging needs. It is also important to plan for residents to be able to either shelter in place or access shelter and emergency services in close proximity to their neighborhood.

LEED-ND encourages the provision of a diversity of housing types – single and multi-family, flats and townhouses, along with maintaining some dwellings for low-income residents. This helps create an economically and socially diverse community and enables people to remain in the neighborhood as their housing needs changes. LEED-ND uses the Simpson Diversity Index to determine the degree to which a neighborhood provides sufficient housing options. LEED-ND also encourages mixed use development, in order to place services in close proximity to residents and thus minimize or reduce vehicle trips. Additional credits are awarded in LEED-ND for communities that provide housing specifically for low-income residents.

In terms of open space and recreation, Madison Park and Mama Johnson Field provide a children's playground and playing fields. There is not currently an exclusively civic space, although there are several schools, churches, and social clubs that provide facilities for meetings and community events.

Southwest Hoboken currently features a good range of housing types and costs. The steady pace of development in the Southwest Hoboken neighborhood is creating significant changes to the land use pattern and generating new needs on the part of residents. Formerly industrial properties are being redeveloped primarily with multi-family housing. While these new investments are maintaining the neighborhood's physical attributes such as the street dimensions, block layout and orienting building entrances toward the sidewalk, there is a concurrent need to think holistically about the social, economic, and cultural needs of residents.

RESPONSIBLE DEPARTMENTS

Planning and Zoning,
Parks and Recreation

MAINTAIN AND INCREASE THE HOUSING AND LAND USE DIVERSITY OF THE NEIGHBORHOOD

Recommendations:

- 1. Conduct a comprehensive evaluation of the housing types, income ranges and number of incomerestricted units in the neighborhood, with the goal of preserving existing affordable housing units and encouraging the construction of diverse housing sizes and types to meet current and future housing needs.
- Provide clear and consistent application of the requirements and incentives for preserving or providing income-restricted units as part of new development.
- Complete the park planned for Block 12 to increase the amount of open space in the neighborhood. If possible, integrate water capture techniques into the park design to augment the neighborhood management and resiliency flood strategy.

- Explore opportunities to include a civic space in future renovation or expansion plans for the Neumann Leather building.
- Provide emergency shelter and critical facilities outside of the 500-year storm event floodplain as defined by FEMA. Ideally, this would be within one-half mile of Southwest Hoboken.



There is a diverse variety of housing types in the neighborhood

GO IN IN P

IMPROVE THE NEIGHBORHOOD'S ENVIRONMENTAL PERFORMANCE

Buildings and infrastructure in urbanized areas account for over 40% of energy consumption and represent significant investments in materials and their associated embodied energy. Development also typically changes hydrological patterns and results in higher ambient temperatures as result of the urban heat island effect. Local environmental quality, the vitality of regional ecosystems, and the well being of residents can all be negatively impacted. LEED-ND addresses these issues primarily in the Green Infrastructure and Building category, through credits related to green building, energy and water efficiency, stormwater management, landscape water use reduction, heat island reduction, infrastructure energy and materials efficiency, and solid waste and recycling.

As the State of New Jersey has adopted the IECC 2009 as part of the building code, any new construction will incorporate a baseline of energy performance measures. New buildings should be encouraged to pursue Energy Star and LEED certification. Environmental performance measures should also address existing buildings through weatherization, upgrades to heating and cooling systems, and plumbing fixture replacement. Standards should also be established for the repair and replacement of public infrastructure. When combined, building and infrastructure measures can reduce energy and water use and costs, aid the City's overall efforts to address localized flooding and combined sewer overflow, and augment the existing green attributes of the neighborhood.

Recommendations:

- Coordinate efforts between City departments, PSE&G, and neighborhood organizations to urge qualifying property owners to participate in weatherization programs. Target 50% adaptation by qualified property owners.
- Include energy and other green strategies into the conditions of approval for new construction and major remodeling projects, through reference to field-verified third-party standards such as LEED or Energy Star.
- Consider providing an FAR bonus to projects achieve performance high level energy building (Net Zero, green certification Passive House, **LEED** Gold Platinum).

- Require that construction major new renovation include on-site stormwater retention features such as rain barrels, drywells, gardens, swales. and permeable paving.
- Develop and implement a citywide standard for street lighting and traffic signal energy efficiency.
 LEED-ND requires at least a 15% improvement over city baseline energy consumption.
- Establish standards for recycled content for street paving, sidewalks, and streetscape features. LEED-ND assigns credit if 50% of the total mass of infrastructure is comprised of recycled materials.



RESPONSIBLE DEPARTMENTS

Department of
Community Development

IMPROVE THE NEIGHBORHOOD'S ENVIRONMENTAL PERFORMANCE

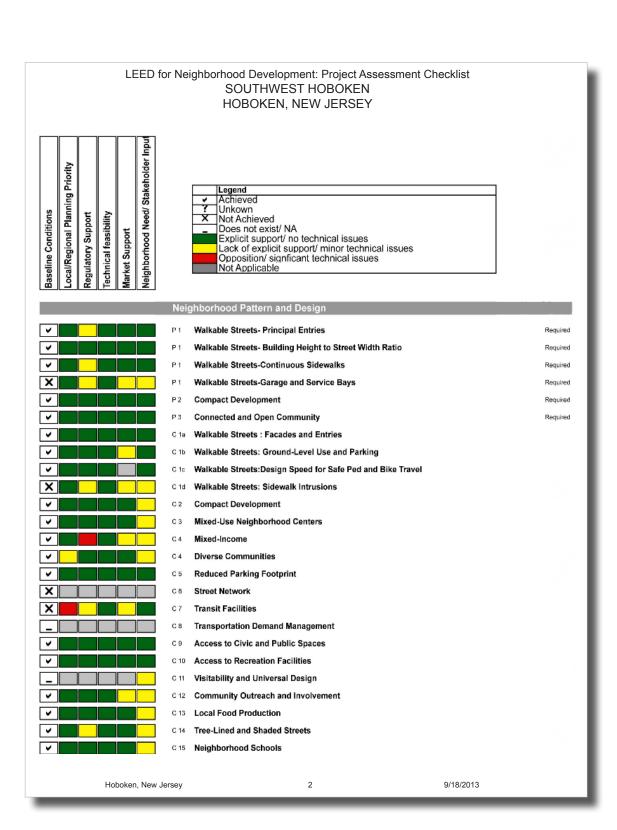




The Sustainable Neighborhood Assessment tool includes an annotated LEED-ND checklist created by Global Green. It is a key component of the process used to document and compare the assessment area against the LEED-ND prerequisites and credits. Each credit within the three credit categories (Smart Location & 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 and augmented during our site visit, stakeholder meetings, and after the community workshop. This information was then translated into an overall assessment of sustainable neighborhood performance.

	LEED for Neighborhood Development: Project Assessment Checklist SOUTHWEST HOBOKEN HOBOKEN, NEW JERSEY							
Baseline Conditions	Local/Regional Planning Priority	Regulatory Support	Technical feasibility	Market Support	Neighborhood Need/ Stakeholder Input		Legend V Achieved V Unkown X Not Achieved Does not exist/ NA Explicit support/ no technical issues Lack of explicit support/ minor technical issues Opposition/ signficant technical issues Not Applicable	
	i	i	i	i		Sma	art Location and Linkage	Total Points
						P1	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
X						P 5	Floodplain Avoidance	Required
~						C 1	Preferred Locations	
•						C 2	Brownfield Redevelopment	
v						C 3	Locations with Reduced Automobile Dependence	
v						C 4	Bicycle Network	
*						C 4	Bicycle Storage	
~						C 5	Housing and Jobs Proximity	
_						C 6	Steep Slope Protection	
_	C7 Site Design for Habitat or Wetland and Water Body Conservation					tion		
X	C 8 Restoration of Habitat or Wetlands and Water Bodies							
X	C9 Long-Term Conservation Management of Habitat or Wetlands and Water Bodies							
	Hoboken, New Jersey 1 9/18/2013							





LEED for Neighborhood Development: Project Assessment Checklist SOUTHWEST HOBOKEN HOBOKEN, NEW JERSEY

Baseline Conditions	Local/Regional Planning Priority	Regulatory Support	Technical feasibility	Market Support	Neighborhood Need/ Stakeholder Inpu	
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	Legend
~	Achieved
7	Unkown
X	Not Achieved
_	Does not exist/ NA
	Explicit support/ no technical issues
	Lack of explicit support/ minor technical issues
	Opposition/ signficant technical issues
	Not Applicable

Required Required Required

9/18/2013

Green Infrastructure and Buildings

P	1	Certified Green Building
X	2	Minimum Building Energy Efficiency
X	3	Minimum Building Water Efficiency
✓	4	Construction Activity Pollution Prevention
X c	1	Certified Green Buildings
X C	2	Building Energy Efficiency
X c	3	Building Water Efficiency
X 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
X	8 3	Stormwater Management
X C	9	Heat Island Reduction
✓	10	Solar Orientation
✓ c	11	On-Site Renewable Energy Sources
X	12	District Heating and Cooling

Hoboken, New Jersey 3

C 17 Light Pollution Reduction

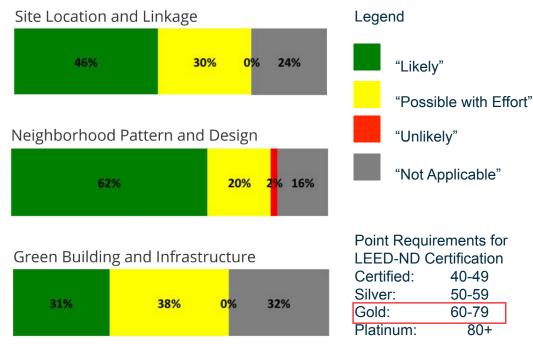
C 13 Infrastructure Energy Efficiency
C 14 Wastewater Management

Recycled Content in Infrastructure

Solid Waste Management Infrastructure

Based on the in-field assessment, planning document review, various stakeholder meetings, and the community workshop, 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 Southwest Hoboken. A high percentage of 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 49, and those listed as "Possible with Effort", are agressively pursued and achieved, affording an additional 28 points, the analysis shows that the Southwest Hoboken neighborhood would likely earn a rating of GOLD from the USGBC.



Hoboken, NJ								
LEED for Neighborhood Development								
Smart Location and Linkage	Total 27	Achievable 12	Possible 8					
Neighborhood Pattern and Design	44	27	9					
Green Building and Infrastructure	<u>29</u> 100	9 49	<u>11</u> 28					

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