
WHAT IS ENVISION?

FOR LOWER EAST SIDE POWER PARTNERSHIP

NOV 25, 2019

Presentation Agenda

- Introduction to the Sustainable Infrastructure Unit
- Why use Envision?
- What is Envision?
- How Envision is used
- Example Projects
 - Sheldon Ave
 - Starlight Park
- East Side Coastal Resiliency



Introduction to The Sustainable Infrastructure Unit

NYC Department Of Design & Construction

Is the city's **primary capital Project Manager**

INFRASTRUCTURE



PUBLIC BUILDINGS



DDC INFRASTRUCTURE Project Typologies

- WATER MAIN
- SANITARY SEWER
- STORM SEWER
- CATCH BASINS
- CONSTRUCTED WETLANDS
- PLAZAS
- PEDESTRIAN BRIDGES
- STEP STREETS
- RETAINING WALL
- ROADWAY RECONSTRUCTION
- STREET SCAPE
- VISION ZERO / PEDESTRIAN SAFETY

Agency Collaboration

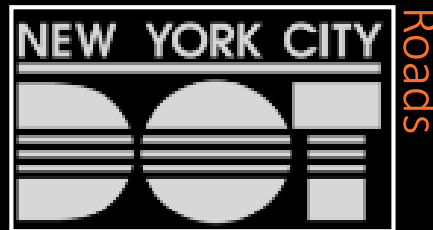
Parks



Sewer and Water Mains



Large Infrastructure
Projects Demand
Inter-agency
Collaboration



Why use Envision?

A STRATEGIC BLUEPRINT FOR CONSTRUCTION EXCELLENCE

Bill de Blasio
Mayor

Lorraine Grillo
Commissioner

INFRASTRUCTURE

The Infrastructure Division

delivers projects on behalf of the Department of Environmental Protection (DEP) and the Department of Transportation (DOT), and last year reconstructed 25 lane miles of New York City streets, and installed or replaced 118 miles of the City's sewers and water mains. The Infrastructure Division is also responsible for essential citywide programs strengthening the **resiliency, sustainability,** and livability of numerous connected communities. These include the City's Coastal Resiliency Program, the innovative Bluebelt stormwater management network in Staten Island, as well as the multi-year effort to make pedestrian ramps throughout the City **ADA compliant** and the \$1.9 billion initiative to improve streets and drainage in southeast Queens.

DDC'S COMPREHENSIVE PLAN TO IMPROVE CAPITAL PROJECT DELIVERY; LAYS OUT THEMES TO DELIVER PROJECTS FASTER AND WITHIN BUDGET.

DDC will leverage recent, significant advances in physical technologies to improve the constructability and **sustainability** of its projects. These include trenchless construction, allowing for the installation of underground infrastructure with minimal excavation, modular building techniques to reduce in-place construction, and porous pavement and concrete to improve ground permeability.

Another factor that DDC must now take into account for every project is **climate change**. The warming of the planet creates new infrastructure challenges related to higher temperatures, sea level rise, droughts, and storms.

VIBRANT DEMOCRACY
INCLUSIVE ECONOMY
THRIVING NEIGHBORHOODS

OneNYC
2050

MODERN INFRASTRUCTURE
HEALTHY LIVES
LIVABLE CLIMATE
EFFICIENT MOBILITY



NYC Parks



Communities



Neighborhood
improvement



Equitable
Vibrant City



Safety



Quality of Life

Innovate

Housing

Care - Not Just
Maintenance

Economic
Development

**Resiliency and
Sustainability**

Climate Resilient

Mobility
Project Delivery

Increase Public
Awareness

Organization
Excellence

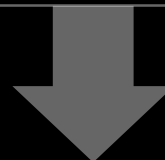
Improve
Performance

Public
Engagement

**Sustainable
Services**

Sustainability

**Address Climate
Change**



Quality of Life



Leadership



Resource Allocation



Natural World



Climate and Resilience

What is Envision?

**RESILIENCY
+ SUSTAINABILITY**

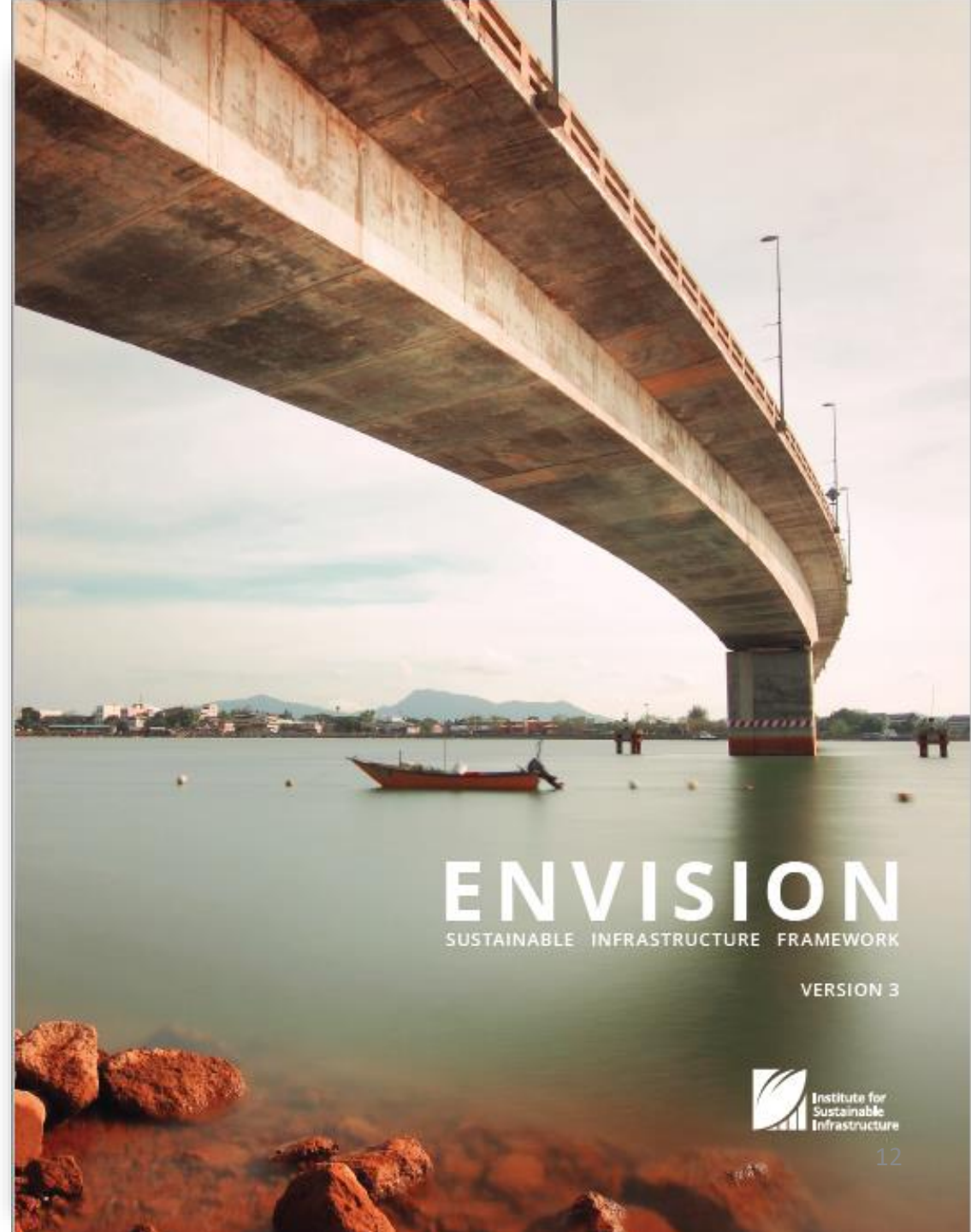
ENVISION

Envision Guidance Manual

The written framework for resiliency and sustainability created by a joint collaboration between:



<https://sustainableinfrastructure.org/envision-version-3/>



Envision Credit System

A framework that includes **64 sustainability and resilience indicators**, called 'credits', organized around five categories:



What does this mean to me and my community?



**Quality
Of Life**
14 Credits

WELLBEING

QL1.1 Improve Community Quality of Life

QL1.2 Enhance Public Health & Safety

QL1.3 Improve Construction Safety

QL1.4 Minimize Noise & Vibration

QL1.5 Minimize Light Pollution

QL1.6 Minimize Construction Impacts

MOBILITY

QL2.1 Improve Community Mobility & Access

QL2.2 Encourage Sustainable Transportation

QL2.3 Improve Access & Wayfinding

COMMUNITY

QL3.1 Advance Equity & Social Justice

QL3.2 Preserve Historic & Cultural Resources

QL3.3 Enhance Views & Local Character

QL3.4 Enhance Public Space & Amenities

WHAT DOES THIS MEAN TO ME?

- Identifies community needs, goals and issues through meaningful engagement
- Assess social, economic, and environmental conditions
- Considers the health and safety benefits are equitably distributed
- Considers the operational and construction noise impacts
- Expands mobility and access options
- Address neighborhood access and wayfinding
- Considers historic context of equity, social justice, and environmental justice
- Identifies historic/ cultural resources; views and local character



Leadership

12 Credits

COLLABORATION

- LD1.1** Provide Effective Leadership & Commitment
- LD1.2** Foster Collaboration & Teamwork
- LD1.3** Provide for Stakeholder Involvement
- LD1.4** Pursue Byproduct Synergies

PLANNING

- LD2.1** Establish a Sustainability Management Plan
- LD2.2** Plan for Sustainable Communities
- LD2.3** Plan for Long-Term Monitoring & Maintenance
- LD2.4** Plan for End-of-Life

ECONOMY

- LD3.1** Stimulate Economic Prosperity & Development
- LD3.2** Develop Local Skills & Capabilities
- LD3.3** Conduct a Life-Cycle Economic Evaluation

WHAT DOES THIS MEAN TO ME?

- project team commitment to sustainability/ resiliency; periodically address the social, environmental, and economic aspects of the project through meetings/ written reports
- interdisciplinary collaborative project; overall long-term sustainability of the community
- two-way line of communication to reply to inquiries; dialogue and partnership
- improve the socioeconomic conditions of the community; may involve training programs for local skill development



Resource Allocation

14 Credits

MATERIALS

RA1.1 Support Sustainable Procurement Practices

RA1.2 Use Recycled Materials

RA1.3 Reduce Operational Waste

RA1.4 Reduce Construction Waste

RA1.5 Balance Earthwork On Site

ENERGY

RA2.1 Reduce Operational Energy Consumption

RA2.2 Reduce Construction Energy Consumption

RA2.3 Use Renewable Energy

RA2.4 Commission & Monitor Energy Systems

WATER

RA3.1 Preserve Water Resources

RA3.2 Reduce Operational Water Consumption

RA3.3 Reduce Construction Water Consumption

RA3.4 Monitor Water Systems

WHAT DOES THIS MEAN TO ME?

- source materials and equipment from manufacturers and suppliers that implement sustainable practices
- avoid sending useful materials to landfills by specifying reused materials; divert construction and demolition waste streams from disposal to recycling and reuse
- conserve energy by reducing overall operational energy consumption throughout project life
- conserve resources and reduce greenhouse gases and air pollutant emissions by reducing energy consumption during construction
- reduce potable water consumption during construction and operation; encouraging the use of greywater, recycled water, and stormwater to meet water needs



**Natural
World**

14 Credits

SITING

NW1.1 Preserve Sites of High Ecological Value

NW1.2 Provide Wetland & Surface Water Buffers

NW1.3 Preserve Prime Farmland

NW1.4 Preserve Undeveloped Land

CONSERVATION

NW2.1 Reclaim Brownfields

NW2.2 Manage Stormwater

NW2.3 Reduce Pesticide & Fertilizer Impacts

NW2.4 Protect Surface & Groundwater Quality

ECOLOGY

NW3.1 Enhance Functional Habitats

NW3.2 Enhance Wetland & Surface Water Functions

NW3.3 Maintain Floodplain Functions

NW3.4 Control Invasive Species

NW3.5 Protect Soil Health

WHAT DOES THIS MEAN TO ME?

- minimize impact of stormwater runoff quantity, rate, and quality
- reduce non-point-source pollution by reducing the quantity, toxicity, bioavailability, and persistence of pesticides and fertilizers
- prevent pollutants from contaminating surface water and groundwater; includes spill and leak diversion systems, spill prevention plans, and cleanup



Climate and Resilience

10 Credits

EMISSIONS

CR1.1 Reduce Net Embodied Carbon

CR1.2 Reduce Greenhouse Gas Emissions

CR1.3 Reduce Air Pollutant Emissions

RESILIENCE

CR2.1 Avoid Unsuitable Development

CR2.2 Assess Climate Change Vulnerability

CR2.3 Evaluate Risk & Resilience

CR2.4 Establish Resilience Goals and Strategies

CR2.5 Maximize Resilience

CR2.6 Improve Infrastructure Integration

WHAT DOES THIS MEAN TO ME?

- reduce greenhouse gas emissions during operation; reduce project contribution to climate change
- reduce emissions of air pollutants: particulate matter (including dust), ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides, lead, and volatile organic compounds
- conduct a comprehensive/ multi-hazard risk and resilience evaluation; Acute Shocks (Short-term) Hurricanes - Heat Waves - Flooding; Chronic Stressors (Long-term) Sea Level Rise - Aging Infrastructure - Global Warming
- develop a comprehensive climate change vulnerability assessment; share climate threat findings with the community to develop resilience goals and strategies; maximize resilience to withstand hazards

Applicability

- Envision recognizes that not all credits will be applicable to all projects.
- Credits can be omitted from consideration by designating them as “not applicable”.

For example:

NW 1.3 Preserve Prime Farmland.

Projects that do not contain prime farmland may deem this credit “Not Applicable”.

Applicability: Projects that do not contain prime farmland, and for which no siting options containing prime farmland were possible or seriously considered, may apply to have this credit deemed not applicable with supporting documentation.

Levels of Achievements

64 credits with **multiple levels of achievement** represent the spectrum of performance goals from improving beyond conventional practice, to conserving and restoring communities and environments



RESTORATIVE

CONSERVING

SUPERIOR

ENHANCED

IMPROVED

NO POINTS



QUALITY OF LIFE: WELLBEING

QL1.1 Improve Community Quality of Life

26

POINTS

INTENT

Improve the net quality of life of all communities affected by the project and mitigate negative impacts to communities.

METRIC

Measures taken to assess community needs and improve quality of life while minimizing negative impacts.

LEVELS OF ACHIEVEMENT

IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
A + B	A + B + C + D	A + B + C + D + E	A + B + C + D + E + F	A + B + C + D + E + F + G
(2) Community Considerations	(5) Community Linkages	(10) Broad Community Alignment	(20) Holistic Assessment & Collaboration	(26) Protecting The Future

(A) The project team identifies and takes into account community needs, goals, and issues. For example, the project team has located and reviewed the most recent community planning information and assessed relevant community needs, goals, and/or issues.

(B) The project meets or supports community needs and/or goals.

(C) The project assesses the social impacts it will have on the host and affected communities' quality of life.

(D) The affected communities are meaningfully engaged in identifying how the project supports community needs and/or goals.

(E) Based on the social assessment, potential negative impacts on the host or nearby affected communities are mitigated following a hierarchy that prioritizes avoidance, minimization, restoration, and offsetting.

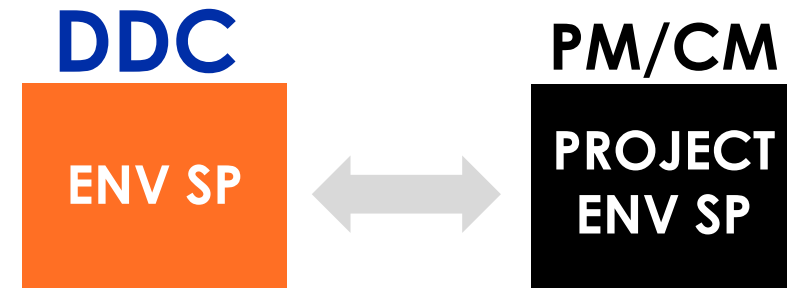
(F) Community satisfaction is demonstrated by feedback from the stakeholder engagement process verifying actions taken in criteria A, B, C, and D.

(G) The project proactively addresses trends in changing social, economic, and/or environmental conditions within the community in order to ensure a high quality of life over the long term.

Envision Sustainability Professional (ENV SP) Credential

Through its Envision Sustainability Professional (ENV SP) credential, Envision recognizes and brings attention to individuals trained and dedicated to developing more sustainable infrastructure.

Project Manager/Construction Manager (PM/CM)
ENV SP will conduct the Envision Pre-Assessment
checklist and upload supporting documentation for
third party verification.



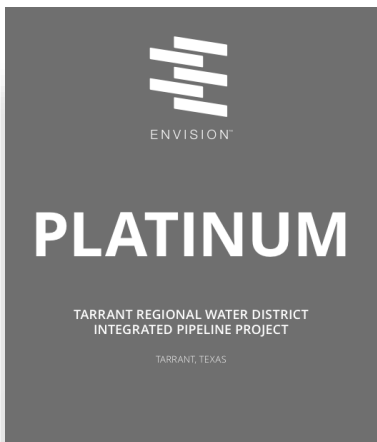
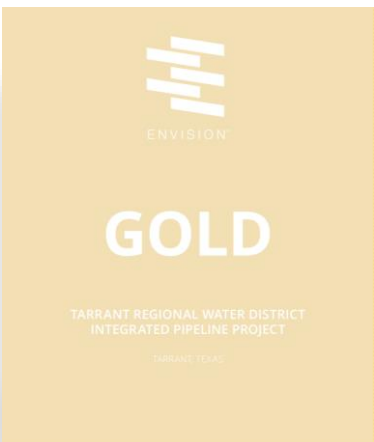
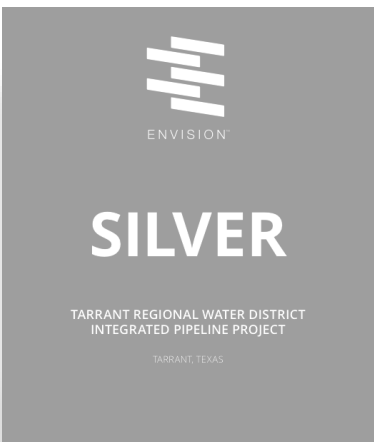
Envision Award Levels of Applicable Credits

20%

30%

40%

50%



How Envision is used



DDC Typologies & Anticipated Minimum Envision Rating

Typology I



Comprehensive Site Work

SILVER

Typology II



Engineered Wetland

SILVER

Typology III



Subsurface Linear Work

VERIFIED

Typology IV



Plazas

VERIFIED

Typology V



Pedestrian Bridges

VERIFIED

Typology VI



Step Streets

SILVER

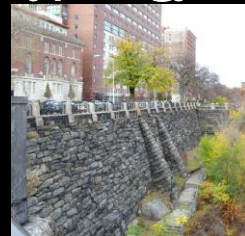
Typology VII



Typical Coastal Resiliency

SILVER

Typology VIII



Retaining Walls

VERIFIED

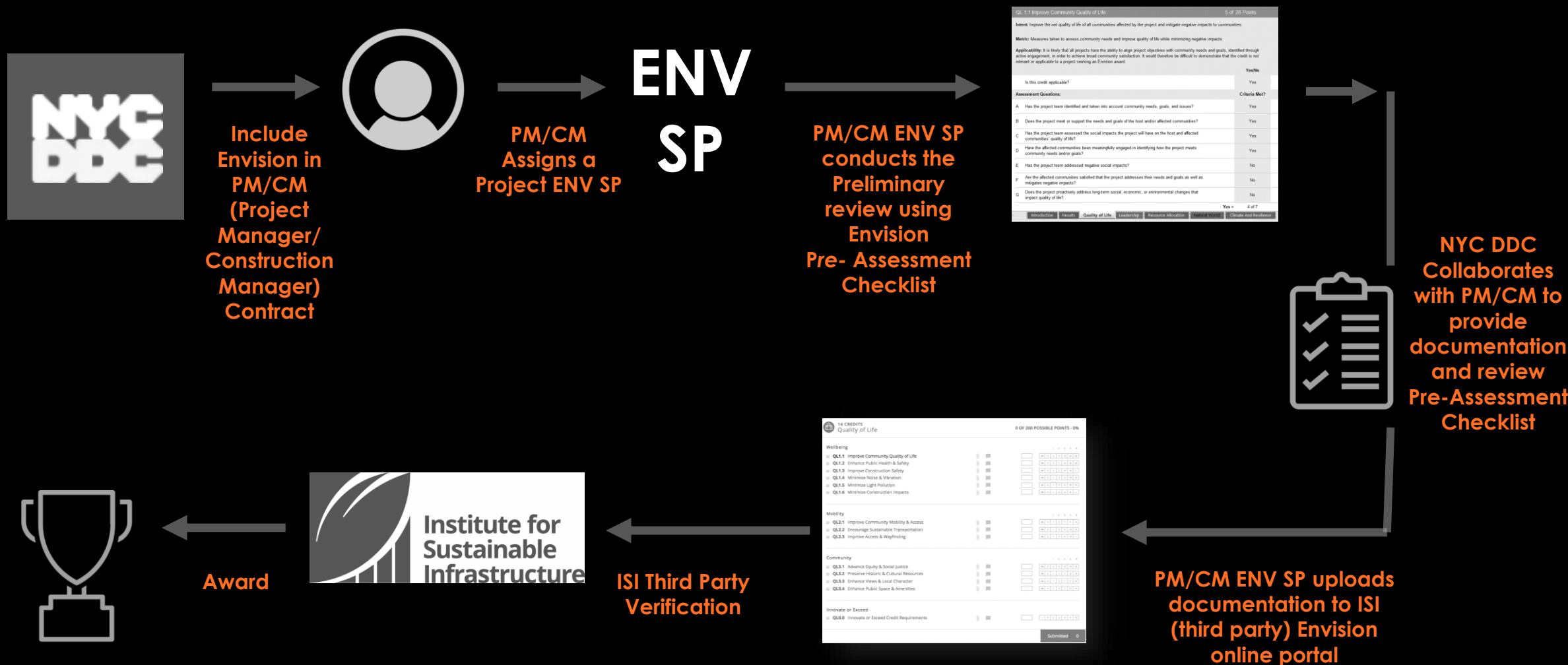
Typology IX



Street Reconstruction

SILVER

Envision Work Flow Diagram



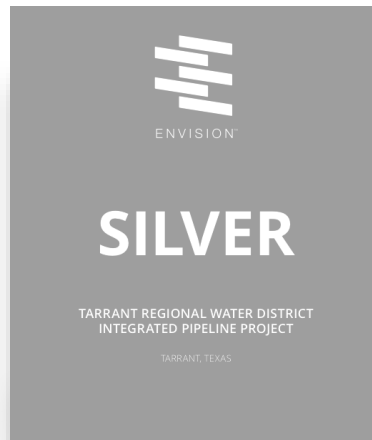
Envision Verification and Award (third party)

Documentation according to the level of achievement is uploaded on the online scoresheet and sent for ISI third party verification.

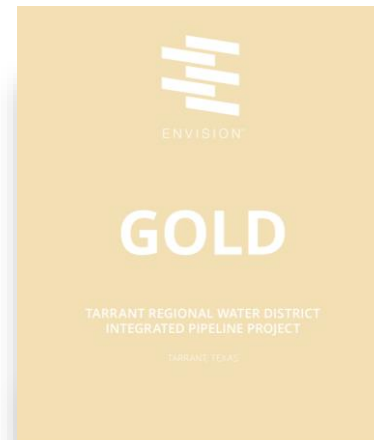
20%



30%



40%



50%



Example Projects

- Sheldon Ave
- Starlight Park





Sheldon Avenue, Staten Island

Project Description

- Remove residents from septic and connect to sewer system via sanitary sewer
- Provides ecologically sound and cost-effective storm water management for approximately one third of Staten Island's land area.

Project Results

- Reduced flooding
- Removed residences from septic
- Community roadway improvements

	Verified Score Information		
Credit Category	Applicable	Verified	Percentage
QUALITY OF LIFE	138	43	31%
LEADERSHIP	121	52	43%
RESOURCE ALLOCATION	80	4	5%
NATURAL WORLD	164	59	36%
CLIMATE AND RISK	122	60	49%
Total Points / %	625	218	35%





Starlight Park, Bronx

Project Description

- A park located in the South Bronx between Westchester Avenue and East Tremont Avenue along the banks of the Bronx River.

Project Results

- Continuous greenway
- Bike paths
- Pedestrian bridge
- Additional Seating
- Appropriate Lighting
- Clear Wayfinding Signage

Credit Category	Applicable	Pre-Assessment Review	Percentage
Quality of Life	200	182	91%
Leadership	182	114	63%
Resource Allocation	196	56	29%
Natural World	216	179	83%
Climate and Resilience	172	8	5%
Total Points/%	966	539	56%

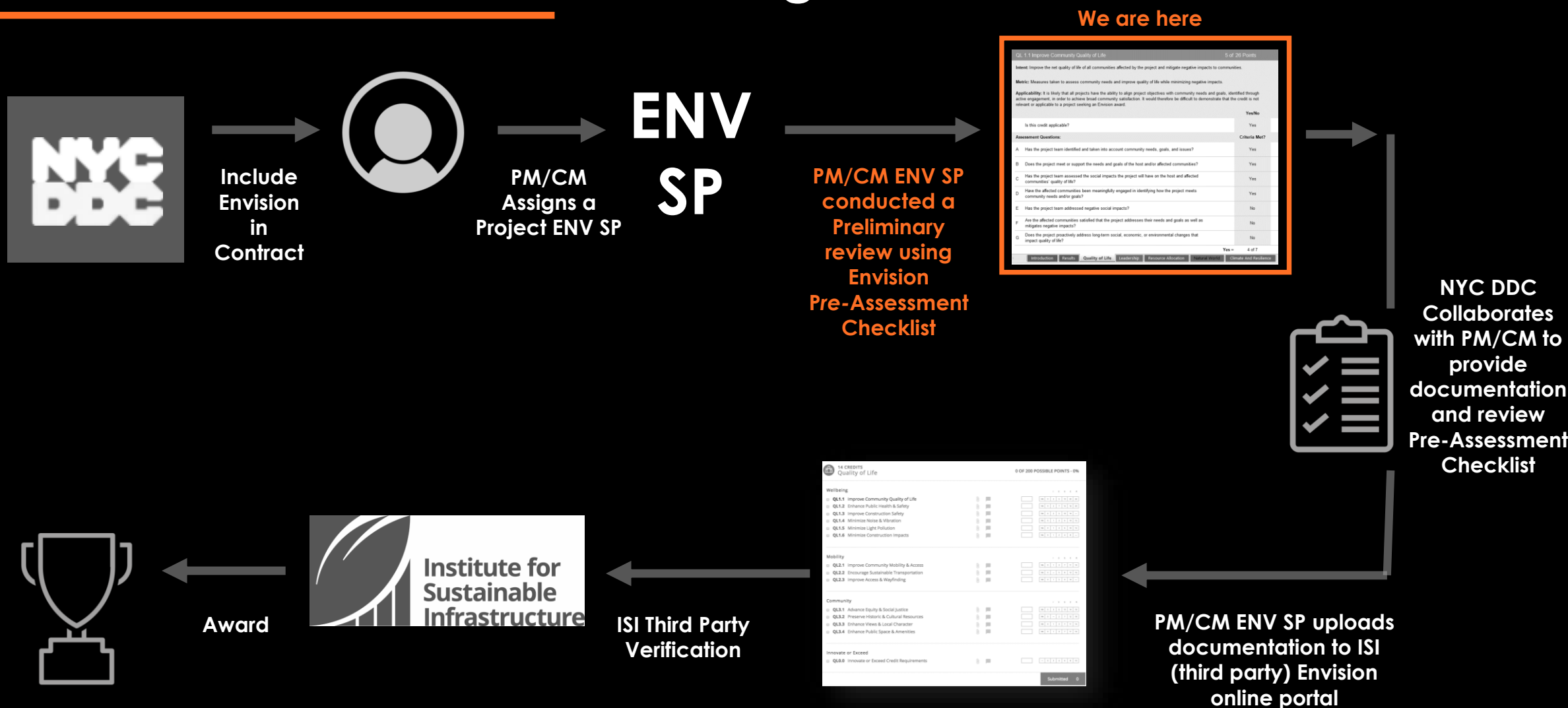


PLATINUM

An aerial photograph of the East Side Coastal Resiliency project in New York City. The image shows a large green park area with many trees and winding paths. A basketball court is visible on the left. A multi-lane highway runs along the bottom right, with a bridge crossing over it. The water of the harbor is visible in the background, with city buildings on the far shore.

East Side Coastal Resiliency

ESCR - Envision Work Flow Diagram



Preliminary Results of The ENVISION *Pre-Assessment Checklist* conducted by PM/CM

Credit Category	Applicable	Pre-Assessment Review	Percentage
Quality of Life	200	159	80%
Leadership	182	99	54%
Resource Allocation	196	25	13%
Natural World	194	64	33%
Climate and Resilience	146	121	83%
Total Points/%	918	468	51%



Restoring community connections to the East River Waterfront



Restoring community connections to the East River Waterfront



Balanced Passive & Active Waterfront Edge



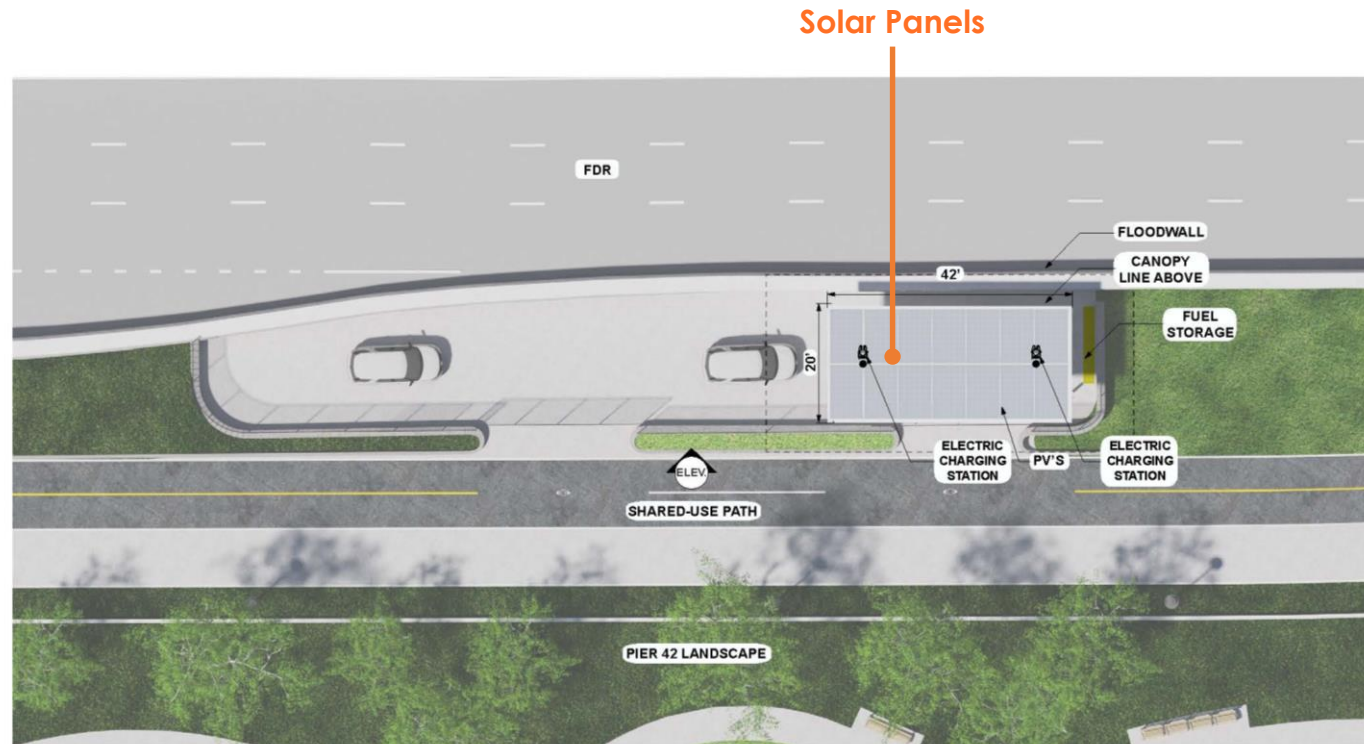
Improved Community Access & Connectivity



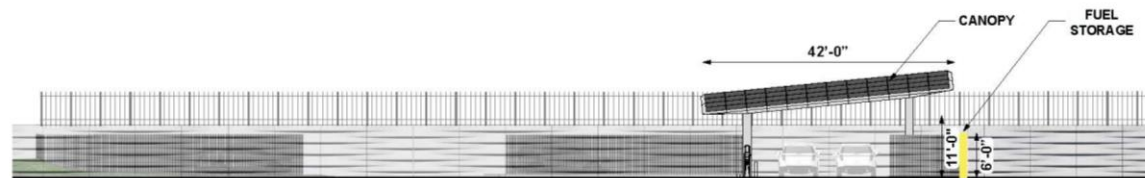
ENVISION
SUSTAINABLE INFRASTRUCTURE FRAMEWORK
VERSION 3

Institute for Sustainable Infrastructure

Use Renewable Energy

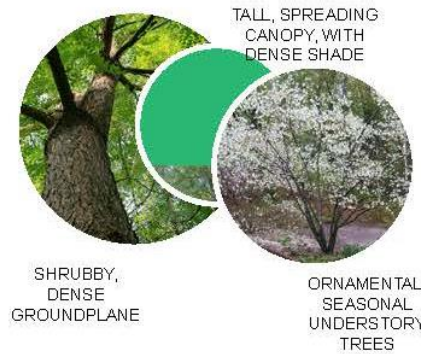


Pier 42 Maintenance Area Plan



Pier 42 Maintenance Area Elevation

Diverse Plant Species



**HIGH, FULL CANOPY
CREATES CONNECTED,
DAPPLED SHADE**



**WOODLAND
EDGES**

- Location: Western urban edge of park. Ornamental understory trees, conifers, shrubs, and perennials provide visual interest along paths and slopes while buffering views
- Maintenance: Trees, shrubs, groundcovers



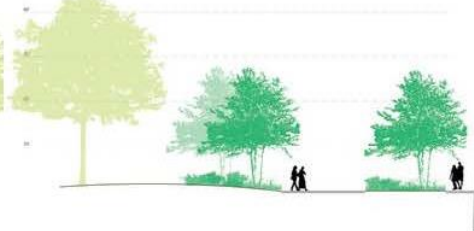
**PASTORAL
OPENINGS**

- Location: Open lawns and spectator areas
- Lawn groundplane maintains open sight lines and open circulation
- Maintenance: Trees, lawn



**LAYERED
GROVES**

- Location: Clearing edges and special areas
- Ornamental understory trees and a low perennial groundplane maintain veiled, eye-level sight lines
- Maintenance: Trees, garden beds



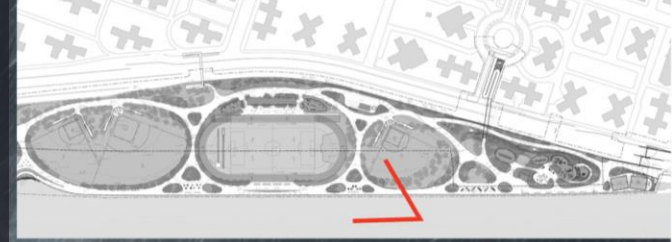
**MARITIME
EDGES**

- Location: Maritime edges of open spaces and esplanade
- Mid and Understory trees, maritime evergreens, shrubs, and grasses provide shade and interest along the river edge
- Maintenance: Trees, shrubs, grasses



Climate and
Resilience

Both neighborhood and elevated park will be protected from future storm surge



ACRONYMS

- **ENV SP** - Envision Sustainability Professional
- **PM/CM** - Project Manager/Construction Manager
- **ISI** - Institute for Sustainable Infrastructure

ENVISION V3 GUIDELINES

<https://sustainableinfrastructure.org/envision-version-3-downloadable/>

QUESTIONS AND COMMENTS

NYC DDC: WHAT IS ENVISION?

THANK YOU

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