



Envision for Sustainable Water Infrastructure

Thursday May 31, 2018
1:00 - 2:30 PM ET

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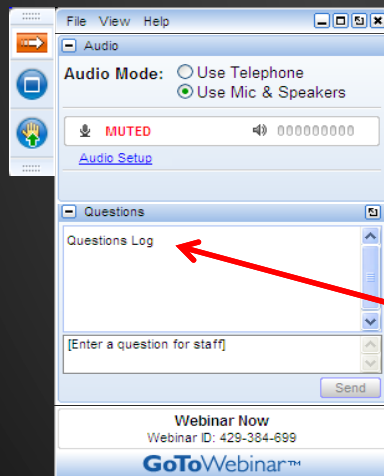
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If you're trusted to protect public health or the environment, **we can help.**

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How to Participate Today



- Audio Modes
 - Listen using Mic & Speakers
 - Or, select "Use Telephone" and dial the conference (please remember long distance phone charges apply).
- Submit your questions using the Questions pane.
- A recording will be available for replay shortly after this webcast.

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Today's Moderator



Bruce Husselbee
Director of Engineering



Today's Speakers

- Evan Bowles
 - Overview of Envision
- Christopher Sheppard
 - LA County Adoption of Envision
- Erika Jozwiak
 - New York City Application of Envision

Our Next Speaker



Evan Bowles
Sustainability Service Group
Leader



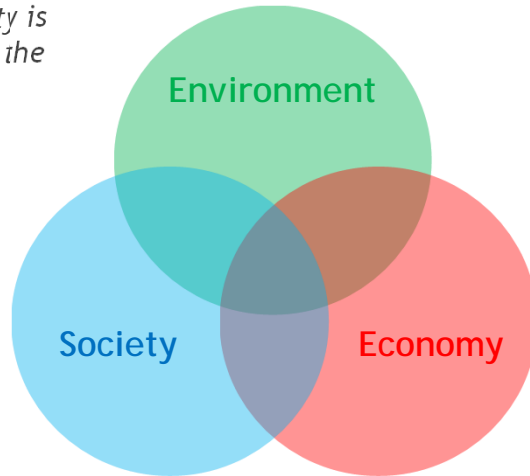
Overview of Envision Sustainable Infrastructure Rating System and Version 3 Updates

Evan Bowles, PE, ENV SP
Sustainability Service Group Leader



What is Sustainability?

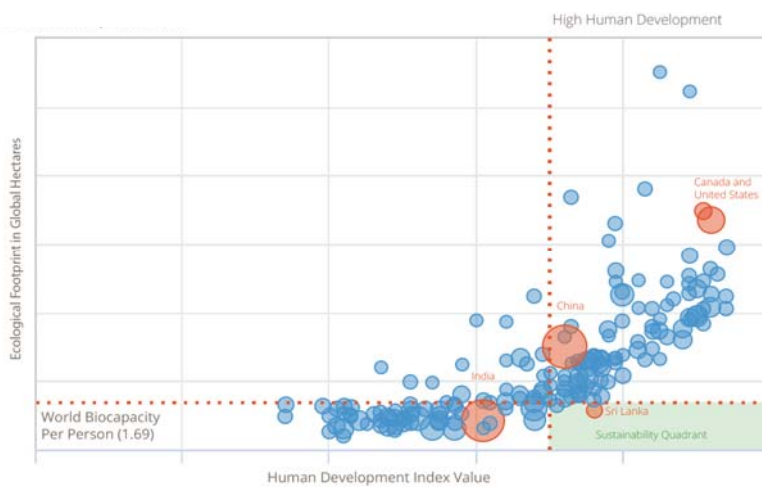
" To pursue sustainability is to create and maintain the conditions under which humans and nature can exist in productive harmony to support present and future generations."
 - U.S. EPA



Sustainability means different things to different people



Sustainability: Global Biocapacity vs. Development



Source: Global Footprint Network, ISI



Geographically Driven Infrastructure Sustainability Concerns



Storm Surge /
Sea Level Rise



Extreme Weather
Events



Aging Workforce /
"Brain Drain"



Energy Efficiency
/ Carbon Emission



Economy and
Population Dynamics



Social Equity /
Engagement



Infrastructure Age
/ Reliability



Water Resource
Availability

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Why was Envision Created?

- Infrastructure is vital to modern civilization - need to consider full life cycle
- Other sustainability rating systems not highly applicable to infrastructure
- Move from siloed to full-spectrum thinking



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Envision Sustainable Infrastructure Rating System



Created and
Maintained by:



Institute for
Sustainable
Infrastructure

ISI founded by:



ZOFNASS PROGRAM
FOR SUSTAINABLE INFRASTRUCTURE

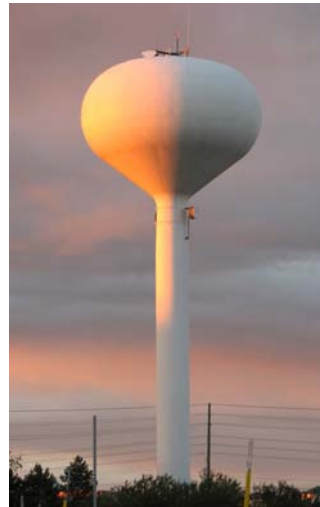
Graduate School of Design
Harvard University

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Why is Envision Unique?

- Directly and highly applicable to civil infrastructure projects
- Applicable in all project phases
- Addresses full spectrum of sustainability
 - Social
 - Environmental
 - Economic
 - Resilience



Source: Wikipedia.com

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Envision's Strategies

- Mitigation Hierarchy
 - *Avoidance*
 - *Minimization*
 - *Abatement*
 - *Offsetting*
- Restoration
- Innovation
- Higher Performance
 - *Incremental sustainable achievement*
 - *Full project life cycle*
 - *Stakeholder engagement*
- Education and Knowledge Sharing

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Envision's Five Categories

	Quality Of Life	Wellbeing, Community
	Leadership	Collaboration, Planning, Economy
	Resource Allocation	Materials, Energy, Water
	Natural World	Siting, Conservation, Ecology
	Climate and Resilience	Emissions, Resilience

Source: ISI

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Category: *Quality of Life*



Source: foresthillsconnection.com

Wellbeing

- QL1.1 Improve Community Quality of Life
- Rev QL1.2 Enhance Public Health and Safety
- New QL1.3 Improve Construction Safety
- QL1.4 Minimize Noise & Vibration
- QL1.5 Minimize Light Pollution
- New QL1.6 Minimize Construction Impacts

Mobility

- QL2.1 Improve Community Mobility & Access
- QL2.2 Encourage Sustainable Transportation
- QL2.3 Improve Access & Wayfinding

Community

- New QL3.1 Advance Equity & Social Justice
- QL3.2 Preserve Historic & Cultural Resources
- QL3.3 Enhance Views & Local Character
- QL3.4 Enhance Public Space & Amenities

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Category: *Leadership*



Source: shorham-port.co.uk

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 System
- New LD2.2 Plan for Sustainable Communities
- LD2.3 Plan for Long-Term Monitoring and Maintenance
- Rev LD2.4 Plan for End-of-Life

Economy

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

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Category: *Resource Allocation*



Source: pcs-instruments.com

Materials

- RA1.1 Support Sustainable Procurement Practices
- RA1.2 Use Recycled Materials
- RA1.3 Reduce Operational Waste
- New** RA1.4 Reduce Construction Waste
- RA1.5 Balance Earthwork On Site

Energy

- RA2.1 Reduce Operational Energy Consumption
- New** RA2.2 Reduce Construction Energy Consumption
- RA2.3 Use Renewable Energy
- RA2.4 Commission & Monitor Energy Systems

Water

- Rev** RA3.1 Preserve Water Resources
- RA3.2 Reduce Operational Water Consumption
- New** RA3.3 Reduce Construction Water Consumption
- RA3.4 Monitor Water Systems

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Category: *Natural World*



Source: miradna.com

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

- New** NW2.1 Reclaim Brownfields
- Rev** NW2.2 Manage Stormwater
- NW2.3 Reduce Pesticide & Fertilizer Impacts
- NW2.4 Protect Surface & Groundwater Quality

Ecology

- Rev** 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

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Category: *Climate & Resilience*



Source: cedwardpitt.com

Emissions

- Rev CR1.1 Reduce Net Embodied Carbon
- CR1.2 Reduce Greenhouse Gas Emissions
- CR1.3 Reduce Air Pollutant Emissions

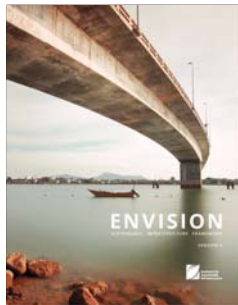
Resilience

- Rev CR2.1 Avoid Unsuitable Development
- CR2.2 Assess Climate Change Vulnerability
- New CR2.3 Evaluate Risk & Resilience
- New CR2.4 Establish Resilience Goals and Strategies
- Rev CR2.5 Maximize Resilience
- CR2.6 Improve Infrastructure Integration

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Major System Components







- ENV SP Professional credential
- Guidance manual
- Pre-assessment checklist
- Online scoresheet
- Optional third-party Verification
- Project certification

Source: ISI

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Infrastructure Sector Applicability

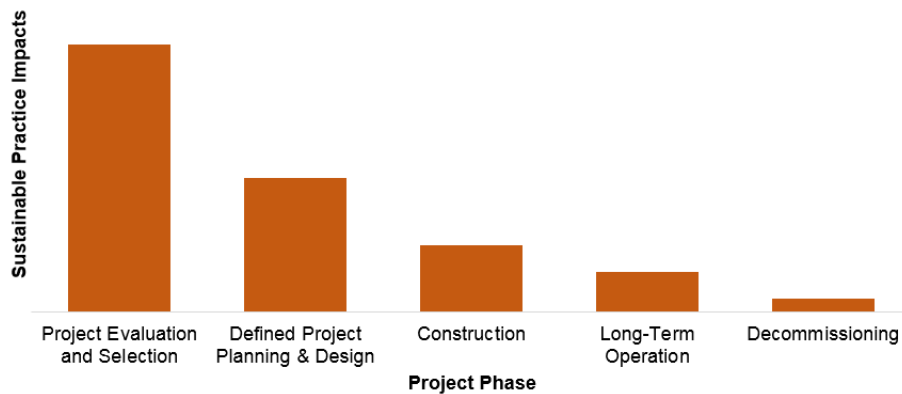
 <u>Water</u>	 <u>Energy</u>	 <u>Waste</u>	 <u>Landscape</u>	 <u>Transportation</u>	 <u>Information</u>
Treatment	Distribution	Solid Waste	Public Realm	Airports	Telecom
Distribution	Hydroelectric	Recycling	Parks	Roads / Highways	Cables
Storage	Coal	Hazardous Waste	Ecosystem Services	Bikes / Pedestrians	Internet
Stormwater	Natural Gas	Collection & Transfer	Natural Infrastructure	Railways	Phones
Flood Control	Wind		Environmental Remediation	Transit	Data Centers
Nutrient Management	Solar			Ports	Sensors
	Biomass			Waterways	

Source: ISI

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Using Envision at all Project Phases



Starting early provides greatest benefit

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Alignment with Other Frameworks



EPA's "Moving Toward Sustainability: Sustainable and Effective Practices for Creating Your Water Utility Roadmap"

Ten Core Management Areas

1. Utility Business Planning
2. Product Quality and Operational Optimization
3. Customer Satisfaction and Stakeholder Understanding & Support
4. Employee & Leadership Development
5. Financial Viability
6. Infrastructure Stability
7. Operational Resiliency
8. Water Resource Adequacy
9. Community Stability
10. Performance Measurement and Continual Improvement

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Alignment with Other Frameworks

WaterEUM's "Effective Utility Management: A Primer for Water and Wastewater Utilities"

Ten Attributes

1. Product Quality
2. Customer Satisfaction
3. Stakeholder Understanding and Support
4. Financial Viability
5. Operational Optimization
6. Employee and Leadership Development
7. Enterprise Resiliency
8. Infrastructure Strategy and Performance
9. Community Sustainability
10. Water Resource Sustainability



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Alignment with Other Frameworks



"Water Resources Utility of the Future Today" Joint Recognition Program

Utility of the Future Today Activity Areas

1. Beneficial Biosolids Use
2. Partnering and Engagement
3. Energy Efficiency
4. Energy Generation and Recovery
5. Nutrient Reduction and Materials Recovery
6. Water Reuse
7. Watershed Stewardship



Benefits of Using Envision

- Sustainability initiatives into action
- Consistent, transparent approach
- Benchmark and track performance
- More robust decision evaluation
- Long term thinking through resiliency and preparedness principles



Benefits of Using Envision

- Development of best practices / standards
- Strengthen interdepartmental cooperation
- Increased public confidence and involvement in decision making
- Use of industry-recognized and vetted third party framework

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What's new in Envision Version 3?

- Many revised v2 credits
- New v3 credits
 - QL1.3 Improve Construction Safety
 - QL1.6 Minimize Construction Impacts
 - QL3.1 Advance Equity and Social Justice
 - LD2.2 Plan for Sustainable Communities
 - LD3.3 Conduct a Lifecycle Economic Evaluation
 - RA1.4 Reduce Construction Waste
 - RA2.2 Reduce Construction Energy Consumption
 - RA3.3 Reduce Construction Water Consumption
 - CR2.3 Evaluate Risk and Resilience
 - CR2.4 Establish Resilience Goals and Strategies
 - CR2.5 Maximize Resilience

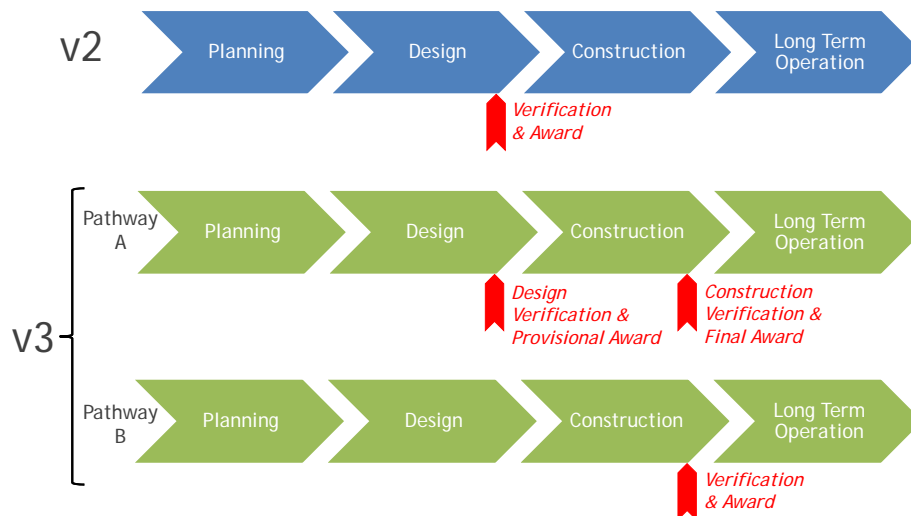
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What's new in Envision Version 3?

Item	Envision v2	Envision v3
Number of Credits	60	64
Maximum Total Points	809	1,000
Categories	5 Categories <ul style="list-style-type: none"> • Quality of Life • Leadership • Resource Allocation • Natural World • Climate and Risk 	5 Categories <ul style="list-style-type: none"> • Quality of Life • Leadership • Resource Allocation • Natural World • Climate and Resilience
Envision Award Levels (based on % of applicable points earned)	20% - Bronze 30% - Silver 40% - Gold 50% - Platinum	20% - Verified 30% - Silver 40% - Gold 50% - Platinum

What's new in Envision Version 3?



What's new in Envision Version 3?

Project Size	Project Registration Fee	Project Verification Fee			
		Pathway A: Design + Post Construction		Pathway B: Post-Construction	
		ISI Member	ISI Non-Member	ISI Member	ISI Non-Member
< \$5m	\$2,000	\$12,000	\$14,000	\$9,000	\$11,000
\$5m - \$25m	\$2,000	\$17,000	\$20,000	\$14,000	\$17,000
\$25m - \$100m	\$2,000	\$26,000	\$30,000	\$21,000	\$25,000
\$100m - \$250m	\$2,000	\$33,000	\$39,000	\$28,000	\$34,000
\$250m - \$500m	\$2,000	\$41,000	\$48,000	\$35,000	\$42,000
\$500m - \$1,000m	\$2,000	\$48,000	\$56,000	\$42,000	\$50,000
> \$1,000m	\$2,000	Contact ISI for quote			

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What's new in Envision Version 3?

Item	ENV SPs That Received Their Credential Before 10/1/2017	ENV SPs That Received Their Credential After 10/1/2017
Action Required for Enrollment into Credential Maintenance Program	Must enroll prior to 10/1/2018	Enrolled automatically
Annual Cost for Credential Maintenance Program	\$80/year (paid by 10/1/2018) (\$50/year for ISI Members)	\$80/year (paid by 10/1/2019) (\$50/year for ISI Members)
Annual Education Requirements	7 hours/year • 2 hours prescribed by ISI • 5 hours users choice (ISI courses or activities and qualifying content provided by other industry entities)	7 hours/year • 2 hours prescribed by ISI • 5 hours users choice (ISI courses or activities and qualifying content provided by other industry entities)
When Access is Granted for Envision v3 Overview Webinar	After \$80 payment	Immediately
One-time 2-hour Online Envision v3 Overview Webinar	Viewing is required	Viewing is required

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Our Next Speaker



Christopher Sheppard
Senior Civil Engineer



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County of Los Angeles Department of Public Works' Adoption of Envision



Christopher Sheppard, PE, EnvSP
Strategic Planning and Sustainability Office
May 31, 2018

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County of Los Angeles



- 10 + million residents - 25% of State CA population
- Total Area 4752 sq. miles
- Density 2,427 people / sq mile
- 88 cities
- 140 Unincorporated Communities

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Department of Public Works



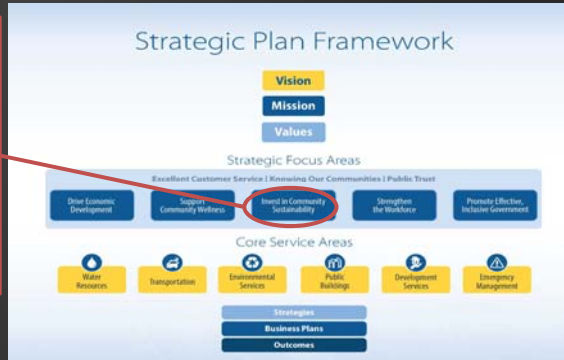
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2017 Public Works Strategic Plan

Invest in Community Sustainability

Preserve the long-term well-being and the resiliency of our communities and the environment by investing in infrastructure, promoting, economically sound, socially, desirable, and environmentally healthy projects, programs, and services.

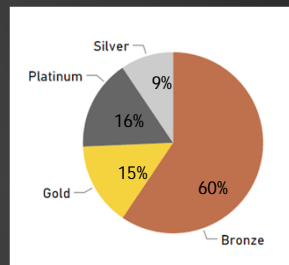


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Public Works' History with ENVISION

- Rating projects since 2011
- Over 100 projects rated



- 60% of projects qualified for an award level
 - 70% of qualified projects rated bronze or silver
 - 30% of qualified projects rated gold or platinum

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County Adopts ENVISION

August 2016 Board Motion adopted the ENVISION rating system for all County infrastructure projects

- Expand the use of Envision
- Coordinate with cities and other agencies
- Continue to participate in ISI

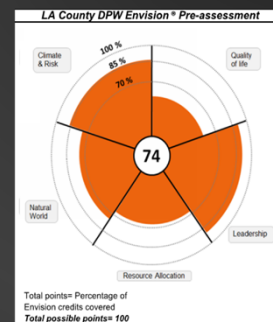


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Expanding the use of ENVISION

- Integrate and Enhance Sustainability
- Incorporated into Project Design Concept Reports
- Consistent Evaluation
- Programmatic Approach



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Analysis of Public Works' Water Works Projects

Category	Project Type	Description	Notes
Significant	Pipe Lines	Install various size diameter pipe below grade	PCR Process – Uses as-needed design contract
	Pump Stations	Construct pump station inc. the building	5 consultants – Uses select list process
	Reservoirs (Water Tanks)	Construct steel/concrete reservoir	
	Reservoir Repairs (Water Tanks)	Repair/upgrade existing reservoir to current AWWA standard	
	Pressure Reducing Regulating Stations	Construct pressure reducing regulating station including the building	
	Groundwater well(s)	Drill and construct groundwater well approx. 500 to 1500 feet below grade	
Routine	Solar Carport or field	Construct a solar carport or field projects to reduce the Districts' energy costs and be more sustainable	
	Valve Maintenance	Field staff exercise existing below ground valves	Programmatic approach. Federal funding supports local purchasing. Identify local products
	Routine leak repairs	Field staff and/or emergency contractor doing leak-induced repair work	Programmatic approach.
	Routine Reservoir Recoating/Painting and other tank maintenance tasks	-Recoating the interior of steel tanks is required every 20 years to maintain the expected service life -Painting the exterior of steel tanks is necessary every 10 years to maintain the expected service life - routine visits, condition assessment and minor repairs	Programmatic approach. NSF approved products only. Check on material specs for things like paint. Choose the environmentally sustainable option.
	Groundwater well rehabilitation	Existing groundwater wells require routine maintenance to maintain production over its service life	Programmatic approach. Local products and recycled materials.
Water Meter Replacement	Existing water meters need to be upgraded to smart or wireless meters		



Programmatic Rating of Public Works' Pavement Preservation Program

Pavement Program Template - Envision Rating Exercise*				POINT
1	QUALITY OF LIFE	PURPOSE	QL1.1 Improve Community Quality of Life	2
2			QL1.2 Stimulate Sustainable Growth and Development	1
3		COMMUNITY	QL1.3 Develop Local Skills and Capabilities	2
4			QL2.1 Enhance Public Health and Safety	2
5			QL2.4 Improve Community Mobility and Access	4
6		WELLBEING	QL3.3 Enhance Public Space	3
7			TOTAL	14
8	LEADERSHIP	COLLABORATION	LD1.1 Provide Effective Leadership and Commitment	17
9			LD1.2 Establish a Sustainability Management System	7
10			LD1.3 Foster Collaboration and Teamwork	15
11			LD1.4 Provide for Stakeholder Involvement	5
12		MANAGEMENT	LD2.1 Pursue By-product Synergy Opportunities	6
13			LD2.2 Improve Infrastructure Integration	1
14		PLANNING	LD3.1 Plan for Long-term Monitoring and Maintenance	10
15	LD3.3 Extend Useful Life		3	
		TOTAL	64	
16	RESOURCE ALLOCATION	MATERIALS	RA1.1 Reduce Net Embodied Energy	18
17			RA1.3 Use Recycled Materials	14
18			RA1.4 Use Regional Materials	10
19			RA1.5 Divert Waste from Landfills	11
20			RA1.6 Reduce Excavated Materials Taken off Site	6
21		RA1.7 Provide for Deconstruction and Recycling	12	
22		ENERGY	RA2.1 Reduce Energy Consumption	18
	TOTAL		89	
23	CLIMATE	EMISSION	CR1.1 Reduce Greenhouse Gas Emissions	13
24			CR1.2 Reduce Air Pollutant Emissions	2
			TOTAL	15
		Grand total points	182	

* These minimum ratings are based on current Los Angeles County Public Works standards, policies, and guidelines for pavement preservation and reconstruction projects for local streets.



Sustainable Infrastructure Design Guidelines

The Guidelines utilize and integrate sustainable best practices and design criteria into the following elements:

- Integrative Design
- Site
- Water
- Energy
- Materials
- Climate Mitigation and Resilience
- Construction
- Operations and Maintenance

Provides templates to achieve various levels of sustainability based on the Envision framework.

Designing a project following the steps and elements in the Guidelines will automatically implement the sustainability principles of Envision, leading to a high Envision rating.



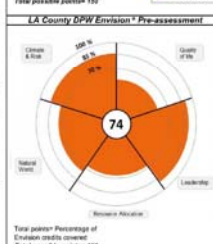
LA County Department of Public Works Sustainable Guidelines Performance Summary-Infrastructure

Project Name:	Date:
Project ID:	
Project Manager:	
Design phase submission:	
Completed by (include email):	

DRAFT

Strategies	Achieved	Y	N	NA
C1. Hold Stakeholder Kick-Off Meeting	X			
C2. Promote Stakeholder Engagement	X			
C3. Incorporate Community Outreach	X			
C4. Incorporate Sustainability Awareness	X			
C5. Integrative Design Innovation	X			
S1. Incorporate Smart Master Planning	X			
S2. Maximize Site Access and Circulation	X			
S3. Incorporate Ecosystems Mitigation	X			
S4. Incorporate LID and Storm Control	X			
S5. Optimize Landscape Design	X			
S6. Optimize Horticulture Design	X			
S7. Optimize Street Design	X			
S8. Site Innovation	X			
W1. Improve Water Quality	X			
W2. Restore Natural Hydrology	X			
W3. Reduce Flooding	X			
W4. Optimize Stormwater Reuse	X			
W5. Reduce Potable Water Consumption	X			
W6. Water Innovation	X			
E1. Minimize Light Pollution	X			
E2. Reduce Energy Consumption	X			
E3. Incorporate Energy Run-Meeting	X			
E4. Commission Energy System	X			
E5. Incorporate Renewable Alternative Energy	X			
E6. Optimize Traffic Signal Systems	X			
E7. Optimize Street Lighting	X			
E8. Energy Innovation	X			
M1. Low-Volatile Materials	X			
M2. Reduce Air Pollutants	X			
M3. Enhance Process Control	X			
M4. Reduce Materials on Project Site	X			
M5. Minimize Construction and Sealing	X			
M6. Materials Innovation	X			
CH1. Identify GHG Emissions Reductions	X			
CH2. Identify Climate Vulnerabilities	X			
CH3. Design for a Changing Climate	X			
CH4. Climate Mitigation and Resilience Innovation	X			
C1. Minimize Pollution Run-Construction Activity	X			
C2. Manage Storms and Flooding	X			
C3. Minimize Trucking	X			
C4. Protect Existing Natural Systems	X			
C5. Reduce Noise and Vibration	X			
C6. Reduce Air Pollutants	X			
C7. Incorporate Climate & Risk into Construction Plans	X			
C8. Construction Innovation	X			
OMP. Plan for Long-Term Monitoring and Maintenance	X			
OMP. Provide Preventative Maintenance	X			
OMP. Provide Asset Class Performance & Maintenance	X			
OMP. Provide Funding	X			
OMP. Reduce Air Pollutants	X			
OMP. Operations and Maintenance Innovation	X			

See County of Los Angeles Sustainable Infrastructure Guidelines, Pre-Final January 2017, implementation section for more information.



Contract Language for New RFPs

- Developing specific scoring criteria
- Requiring Envision credentialed team members
- Requiring Envision experience on previous projects



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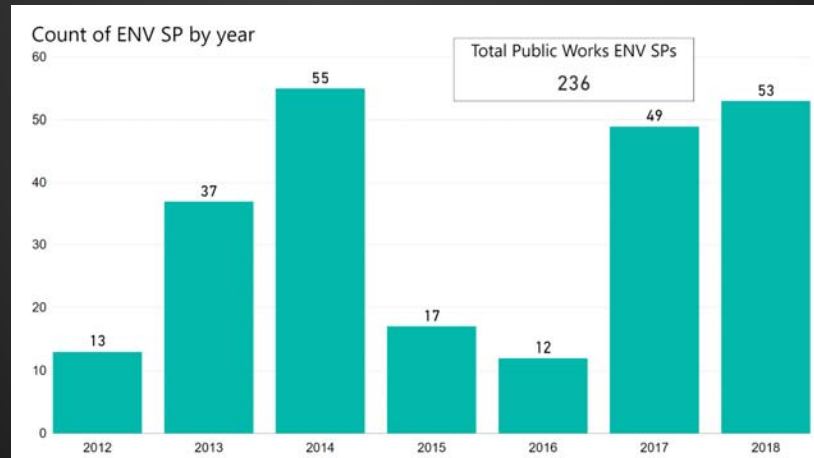
Additional Uses of ENVISION

- Planning Level Discussions (Specific Plans, Community Plans)
 - Incorporate sustainable principals into planning documents
- Evaluating existing County sustainability programs and policies
- Developing funding or grant proposals to regional, State, and Federal agencies
- Assisting with California Environmental Quality Act compliance

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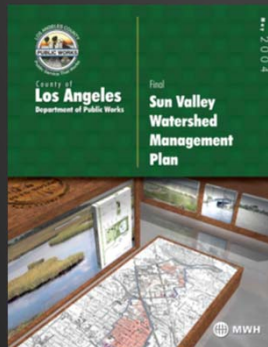
Envision Training



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Sun Valley Watershed Management Plan



- Flood Protection
- Water Quality
- Water Conservation
- Open Space and Recreation
- Habitat

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SUN VALLEY PARK DRAIN AND INFILTRATION SYSTEM

Envision Award Rating Criteria

- **Quality of Life:** Enhance Public Health & Safety, Enhance Public Space
- **Leadership:** Foster Collaboration & Teamwork, Plan for Long-Term Monitoring & Maintenance
- **Resource Allocation:** Protect Fresh Water Availability
- **Natural World:** Manage Stormwater, Prevent Groundwater Contamination
- **Climate and Risk:** Prepare for Long-Term Adaptability, Prepare for Short-Term Hazards



Construction of 1.7 acre infiltration chambers which are 5



Underground infiltration chambers at



Installation of water treatment system at Sun Valley Park



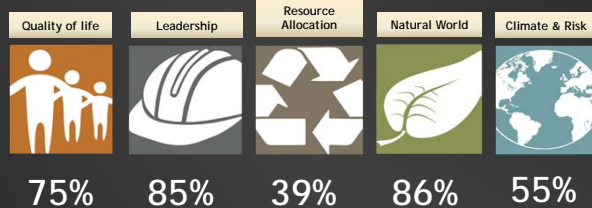
AFTER: Park space above infiltration basins at Sun Valley Park

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Sun Valley Watershed Management Plan

Envision Rating Results



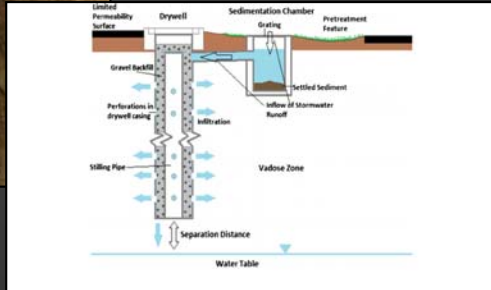
Final Score = 67%



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PROPOSED PROJECT: DRY WELLS

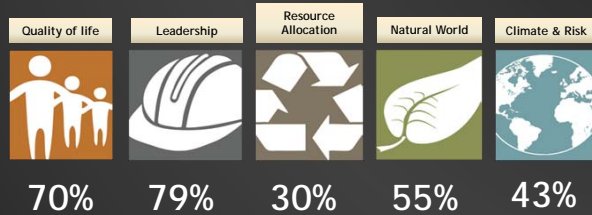


PROPOSED PROJECT: DRY WELLS



East Los Angeles Sustainable Median Stormwater Capture Project

Envision Rating Results



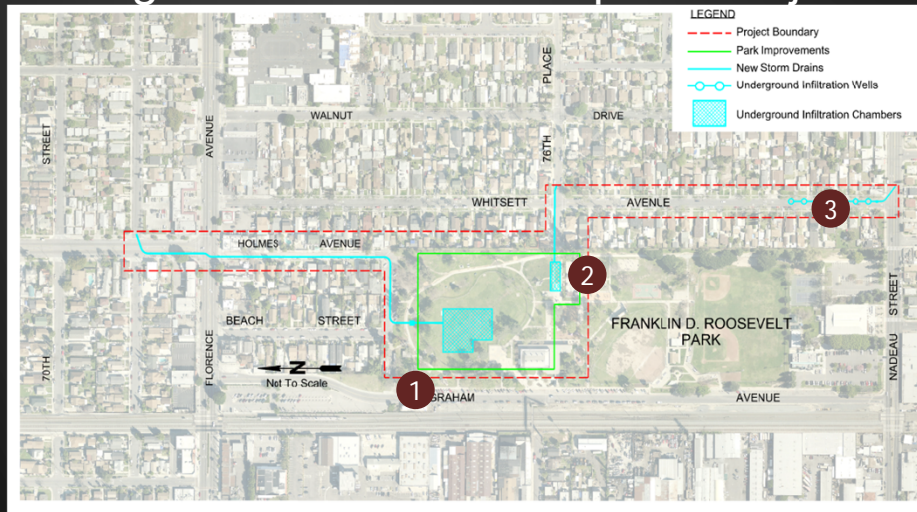
Final Score = 55%



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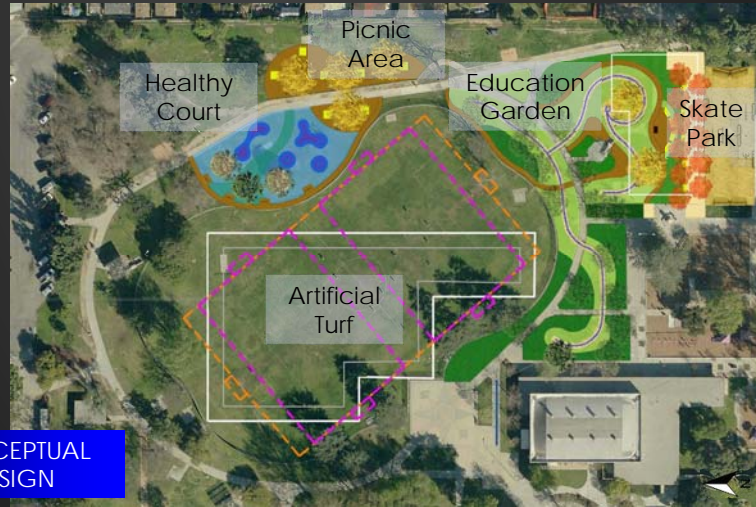
Franklin D. Roosevelt Park Regional Stormwater Capture Project



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OVERVIEW OF PROPOSED PARK IMPROVEMENTS



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PROFILE VIEW OF SOCCER FIELD

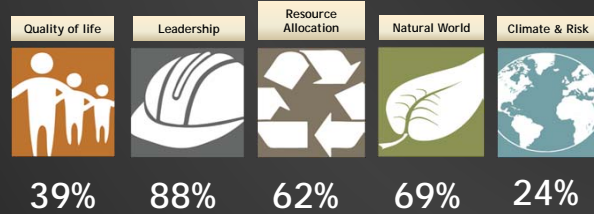


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Franklin D. Roosevelt Park Regional Stormwater Capture Project

Envision Rating Results



Final Score = 57%



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Continuing Efforts

- Integrate into key infrastructure operations
- Update policies and programs to integrate Envision
- Develop analytic tools (database)
- Outreach and assist small business and construction communities
- Communicate with cities and other public agencies



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Questions?

Additional Info

<http://dpw.lacounty.gov/adm/sustainability/>

Contact

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Strategic Planning and Sustainability Office
CSHEPPARD@dpw.lacounty.gov



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Our Next Speaker



Erika Jozwiak
Acting Sustainability Lead



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Strengthening New York City DEP's Sustainability Through Programmatic Application of Envision

Erika Jozwiak, LEED GA, ENV SP
NYC Department of Environmental Protection

WEF Webcast
May 31st, 2018



Agenda

- **DEP Mission**
 - Vision
 - Purpose
- **Regulatory Incentives**
 - OneNYC
 - Local Laws
 - Introduction to Envision
- **Using Envision at DEP**
 - Sustainability Program
 - Culture Change
- **Case Studies**
 - Waste Water Treatment Plant Process Upgrade
 - Bridge Replace at Reservoir



DEP Mission

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DEP Vision Statement

To be the safest, most efficient, cost-effective,
resilient, and transparent water utility in the nation.



Water Supply



- Deliver one billion gallons of drinking water per day to nine million New Yorkers
- Manage 19 reservoirs and three controlled lakes with a storage capacity of 580 billion gallons
- Protect water quality to maintain our Filtration Avoidance Determination

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Wastewater Treatment



- Treat an average of 1.3 billion gallons of wastewater per day
- Operate 14 in-city wastewater treatment plants

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Sustainability



- Implement the *NYC Green Infrastructure Plan*
- Accelerate regulatory reform to incorporate sustainability principles into clean water regulations and initiatives
- Monitor and protect the water quality of New York Harbor

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Capital Construction



- Manage \$21 billion of projects in construction or design
- Provide in-house engineering and design services to DEP's water supply, distribution, and treatment divisions
- Provide information to the public through DEP's capital projects website

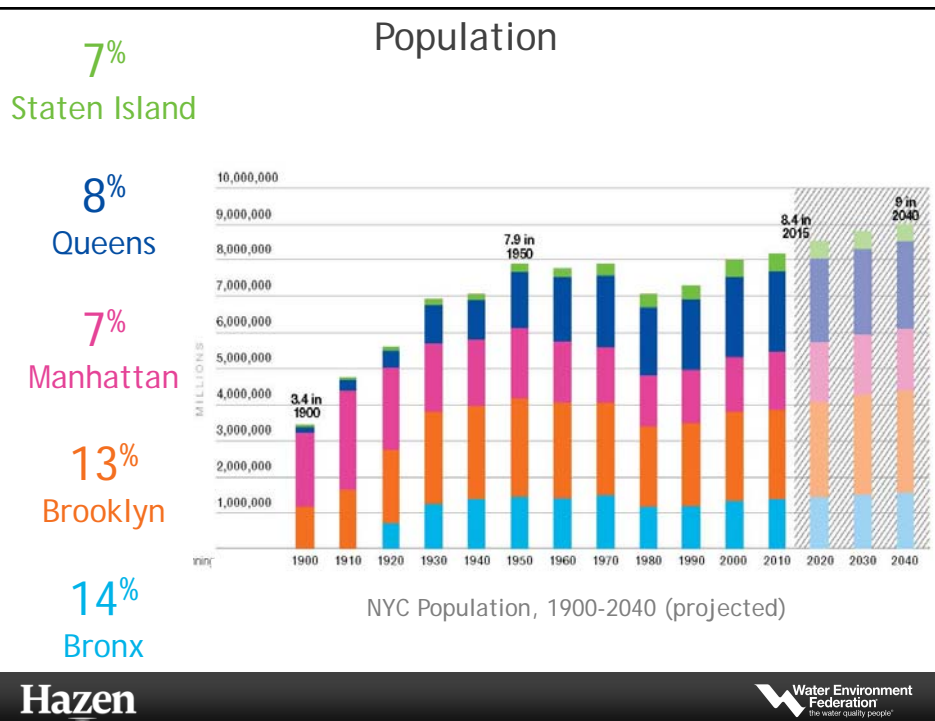
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Regulatory Incentives

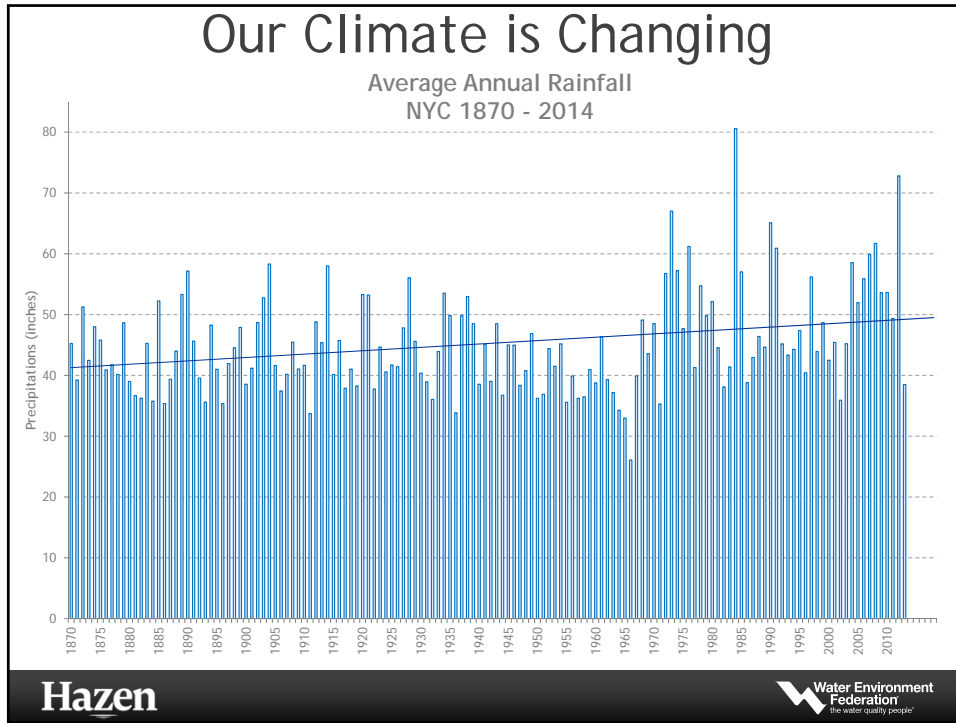
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OneNYC

Growth

Vision 1: Our Growing, Thriving City

New York City will continue to be the world's most dynamic urban economy where families, businesses, and neighborhoods thrive.

Equity

Vision 2: Our Just and Equitable City

New York City will have an inclusive, equitable economy that offers well-paying jobs and opportunity for all to live with dignity and security.

Sustainability

Vision 3: Our Sustainable City

New York City will be the most sustainable big city in the world and a global leader in the fight against climate change.

Resiliency

Vision 4: Our Resilient City

Our neighborhoods, economy, and public services are ready to withstand and emerge stronger from the impacts of climate change and other 21st century threats.

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NYC Local Laws



- Local Law 86 of 2005 - First Green Building Local Law, encourages LEED building
- Local Law 22 of 2008 - 30% Reduction in Energy / GHG from City Funded Projects by 2030
- Local Law 57 of 2010 - Increased water efficiency standards
- Local Law 20 of 2011 - Rooftop solar analysis
- Local Law 10 of 2013 - Stormwater BMPs
- Local Law 130 of 2013 - Electric vehicle charging stations
- Local Law 66 of 2014 - 80% Reduction in Energy / GHG from City Funded Projects by 2050
- Local Law 24 of 2016 - Solar panel feasibility study for City buildings
- Local Law 31 of 2016 - Low Energy Intensity Building
- Local Law 32 of 2016 - Updates Green Building Policy, expands jurisdiction

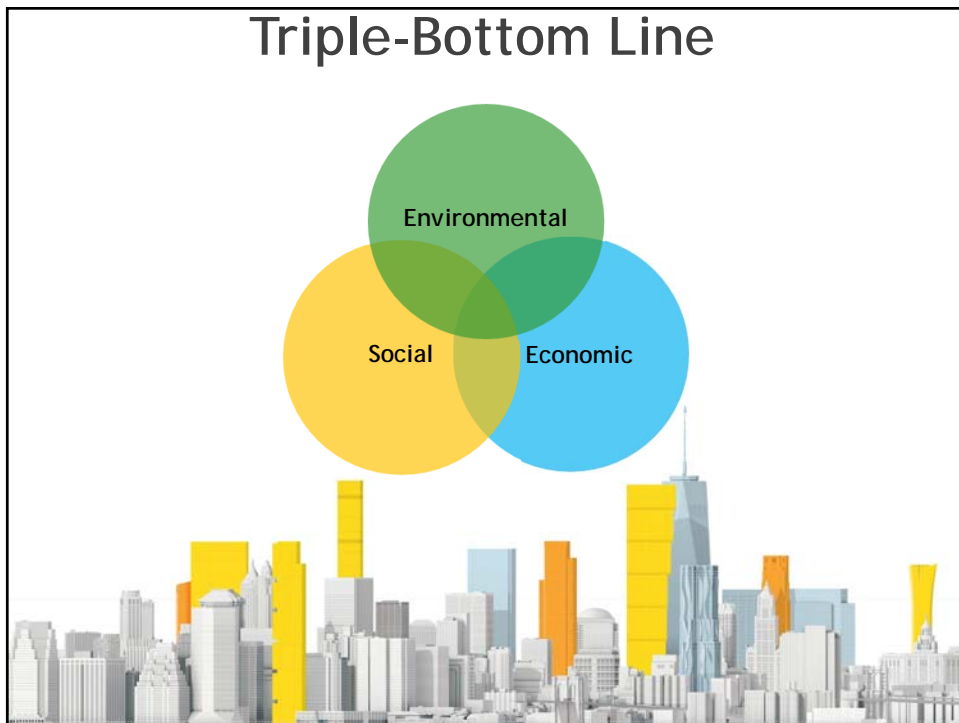
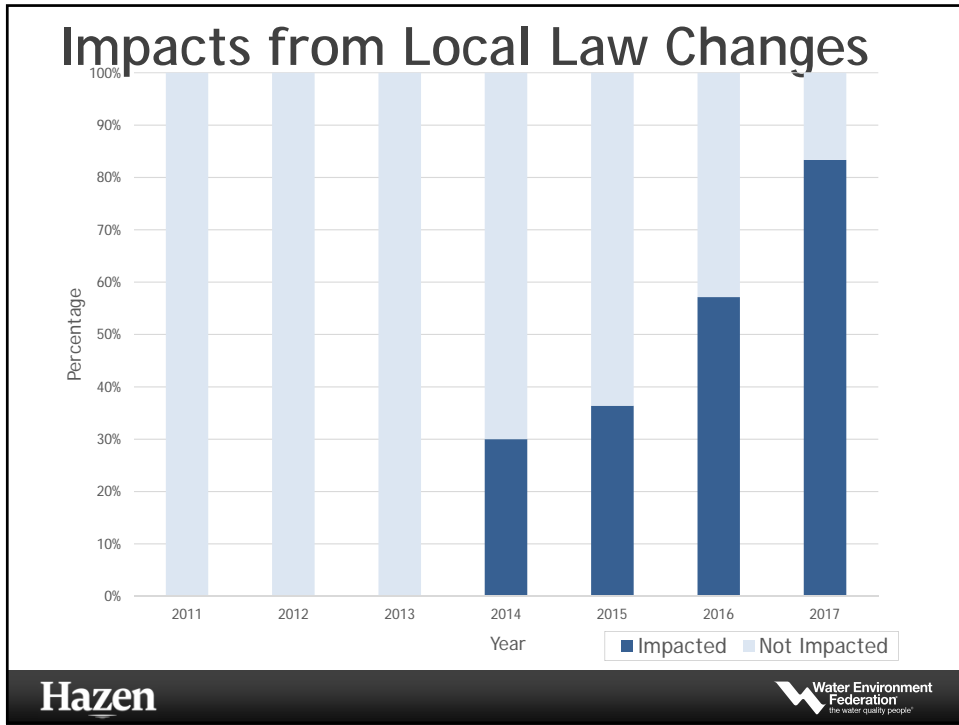


NYC Local Laws

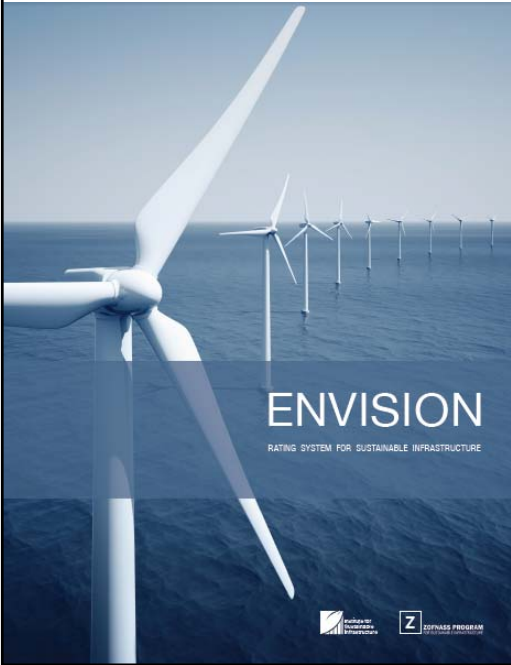


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Envision Infrastructure Rating System




- Sustainability rating system for civil infrastructure
- Core: Triple Bottom Line
- Development:
 - Harvard Graduate School of Design, Zofnass Institute
 - Institute for Sustainable Infrastructure (ASCE, APWA & ACEC)
- Applicability:
 - Project's full lifecycle
 - Variety of assets
- Credentialed Training and Third Party verification










INSTITUTE FOR SUSTAINABLE INFRASTRUCTURE



ZOFNASS PROGRAM



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Using Envision at DEP





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Approach to Sustainability



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DEP personnel



1905

DEP Founded
Board of Water Supply

6,000

Employees

1,850

Field Staff

12K

Consultant Staff

250

Contracts per Year

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DEP Culture

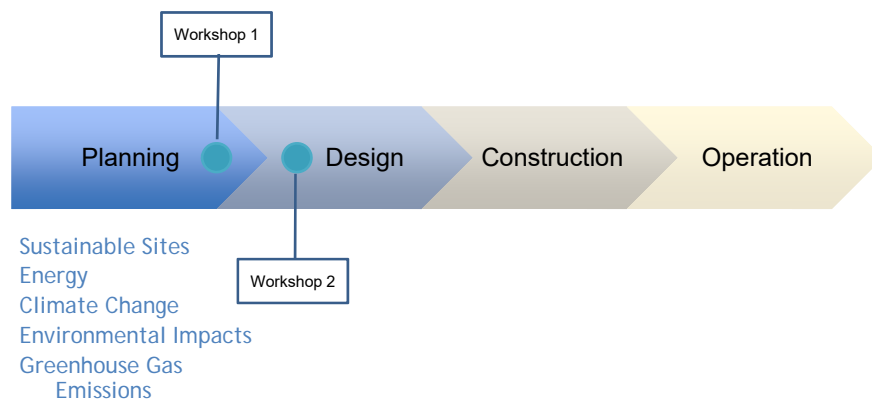
- Workforce Development
 - Online Training
 - In-Person Classes
 - Project Specific Workshops
 - 80 registered ENV SPs
 - 6 registered LEED APs

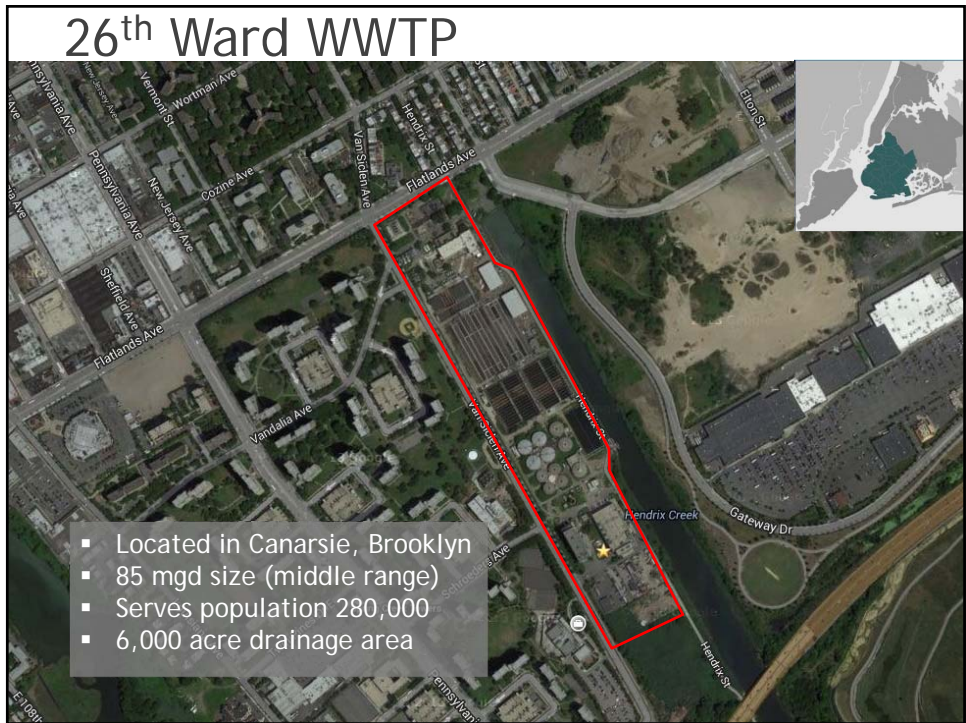


How does your project compare:



Project Delivery Timeline





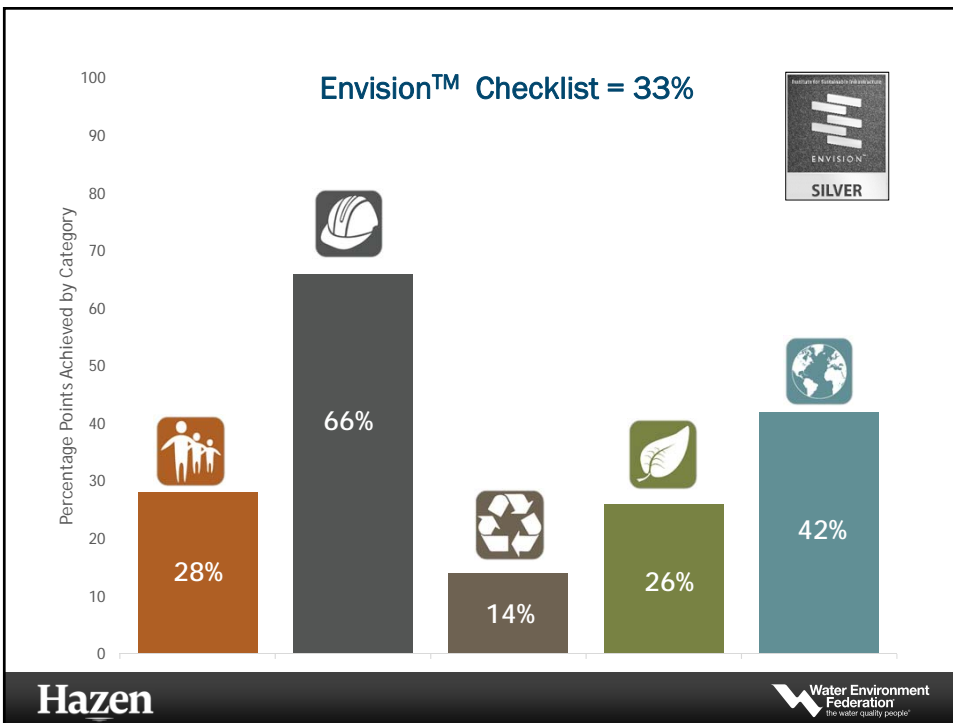
26th Ward Waste Water Treatment Plant








- Plant-wide upgrade: addition of fifth preliminary treatment tank, upgrade main sewage pumps lighting, process air blowers
- Upgrading equipment for efficiency and providing critical redundancies
- Active collaboration with variety of stakeholders
- Long term reliability and climate resilience, planning for future increase in served population



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26th Ward Waste Water Treatment Plant


 <p>QUALITY OF LIFE 13 Credits</p>	<ul style="list-style-type: none"> • Restorative development of local skills • Noise studies conducted for surrounding community • Minimize light pollution through LED
 <p>LEADERSHIP 10 Credits</p>	<ul style="list-style-type: none"> • Robust sustainability management system • Designed for flexibility and increased population • All stakeholders involved
 <p>RESOURCE ALLOCATION 14 Credits</p>	<ul style="list-style-type: none"> • 72% recycled material for new construction • Daylighting, solar shading, natural cooling used • Energy efficient equipment
 <p>NATURAL WORLD 15 Credits</p>	<ul style="list-style-type: none"> • Managing stormwater through green roof system • Project located on an existing greyfield • No pesticide or fertilizer used
 <p>CLIMATE AND RISK 8 Credits</p>	<ul style="list-style-type: none"> • 36% reduction in greenhouse gas emissions • Designed to most stringent FEMA standards • Prepared for long and short term hazards






2016 ASCE GAMECHANGER







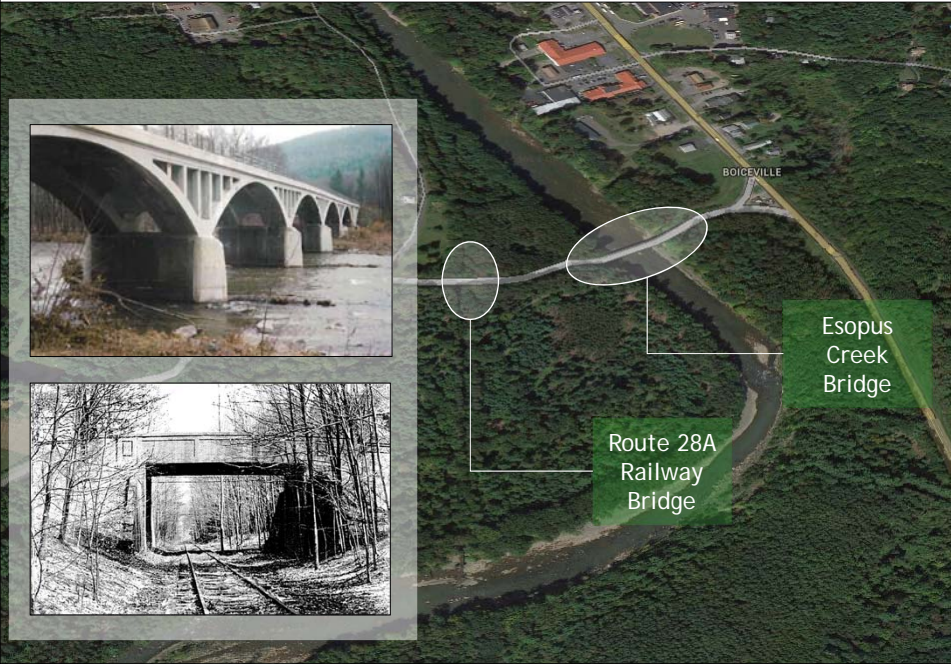





Esopus Creek
Bridge Replacement
Olive, NY

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Esopus Creek Bridge Replacement



BOICEVILLE

Esopus Creek Bridge

Route 28A Railway Bridge

Esopus Creek Bridge Replacement



Scope

- Replace Esopus Creek Bridge & Rte. 28A Railroad Bridge
- Maintain Travel
- Provide connection between town & rail trail
- Reconfigure Rt. 28 and Rt. 28A intersection



Esopus Creek Bridge Replacement

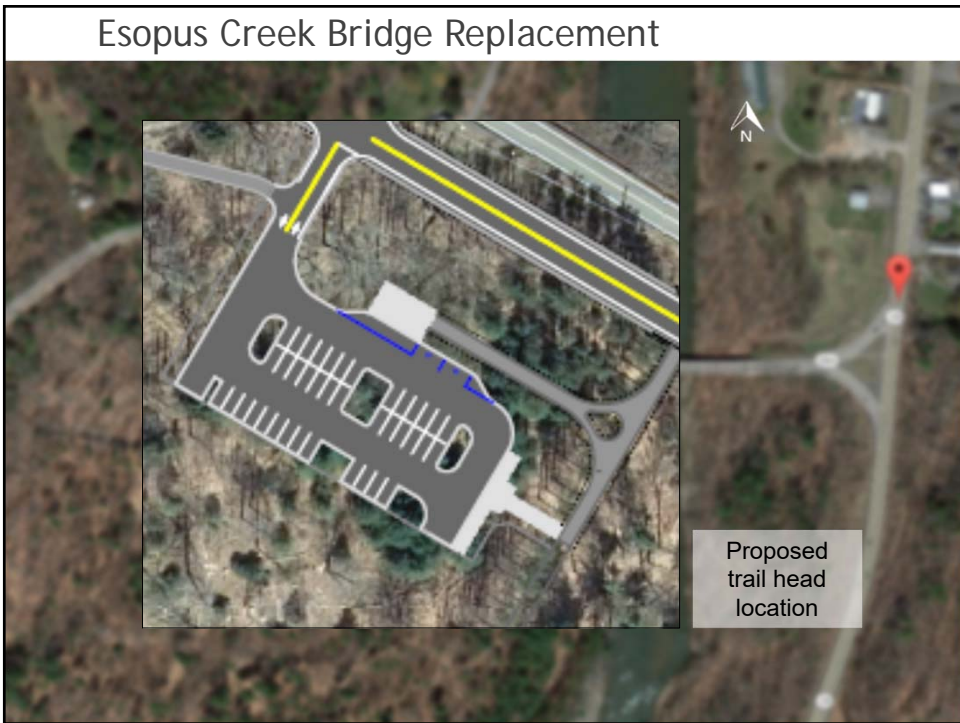


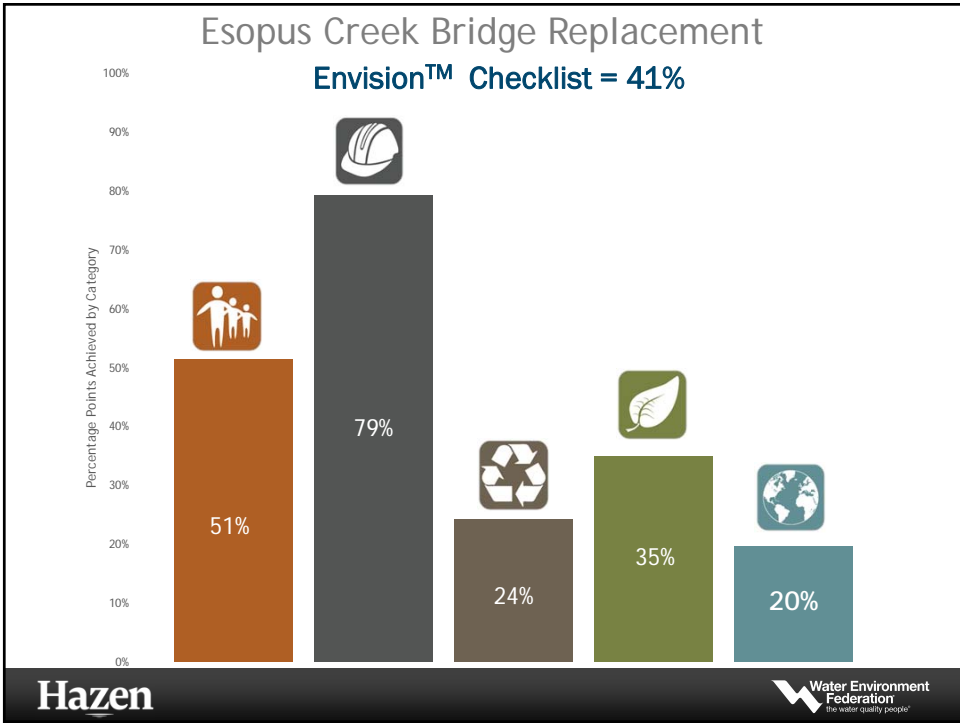
Esopus Creek Bridge Replacement








Esopus Creek Bridge Replacement









Esopus Creek Bridge Replacement

 <p>QUALITY OF LIFE 13 Credits</p>	 <p>LEADERSHIP 10 Credits</p>	 <p>RESOURCE ALLOCATION 14 Credits</p>	 <p>NATURAL WORLD 15 Credits</p>	 <p>CLIMATE AND RISK 8 Credits</p>	<ul style="list-style-type: none"> • Enhances public space / Improve access • Preserving views and local character • Signage and wayfinding improvements <ul style="list-style-type: none"> • Establish sustainability management system • Active stakeholder involvement • Long term maintenance • Improve infrastructure integration <ul style="list-style-type: none"> • Sustainable procurement practices • Divert waste from landfills • Use recycled materials (asphalt) <ul style="list-style-type: none"> • Sustainable stormwater management • Preserve Greenfields • Permeable pavement <ul style="list-style-type: none"> • Reduce heat island effect • Assess climate threat
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Next Steps for Envision at DEP

- Integrating construction credits tracking
 - Water
 - Energy
 - Waste
- Updating training for staff for new Envision credits
- Standard verifier for DEP projects



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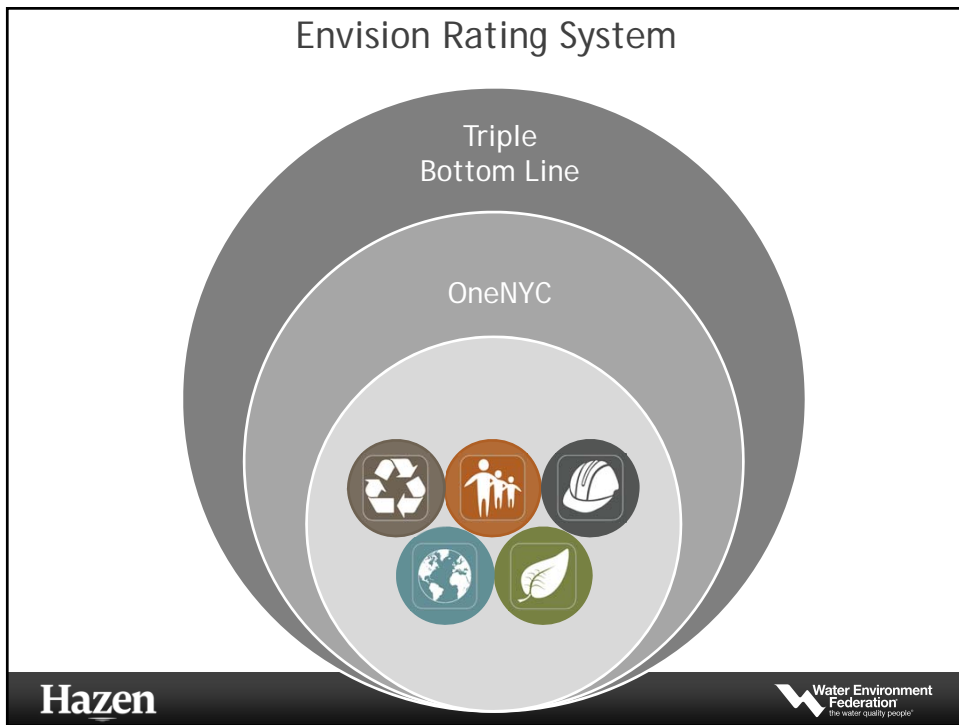
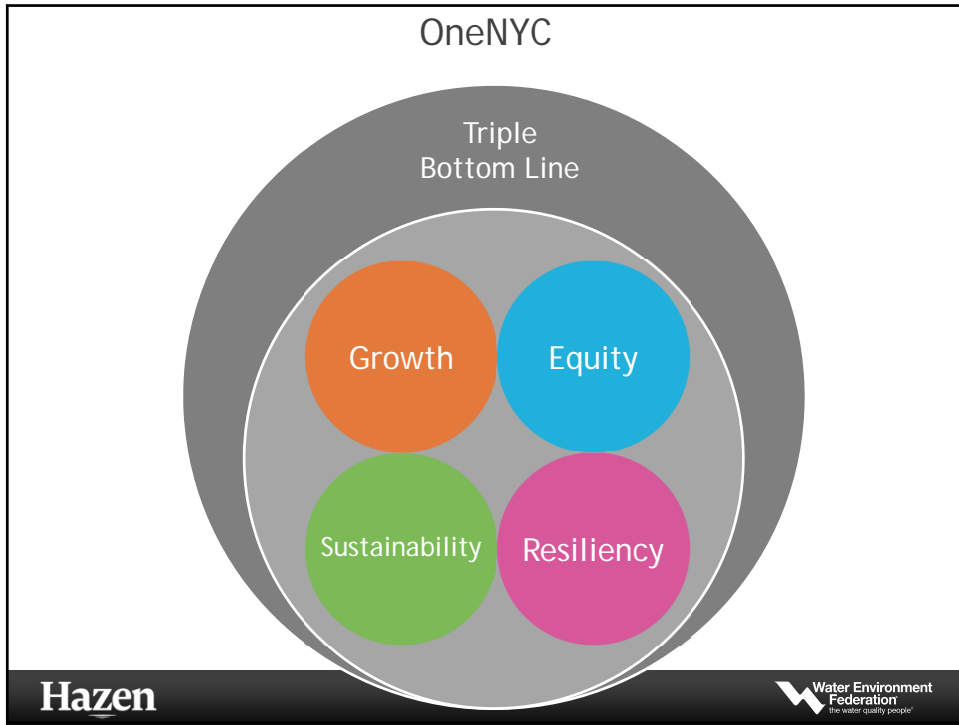


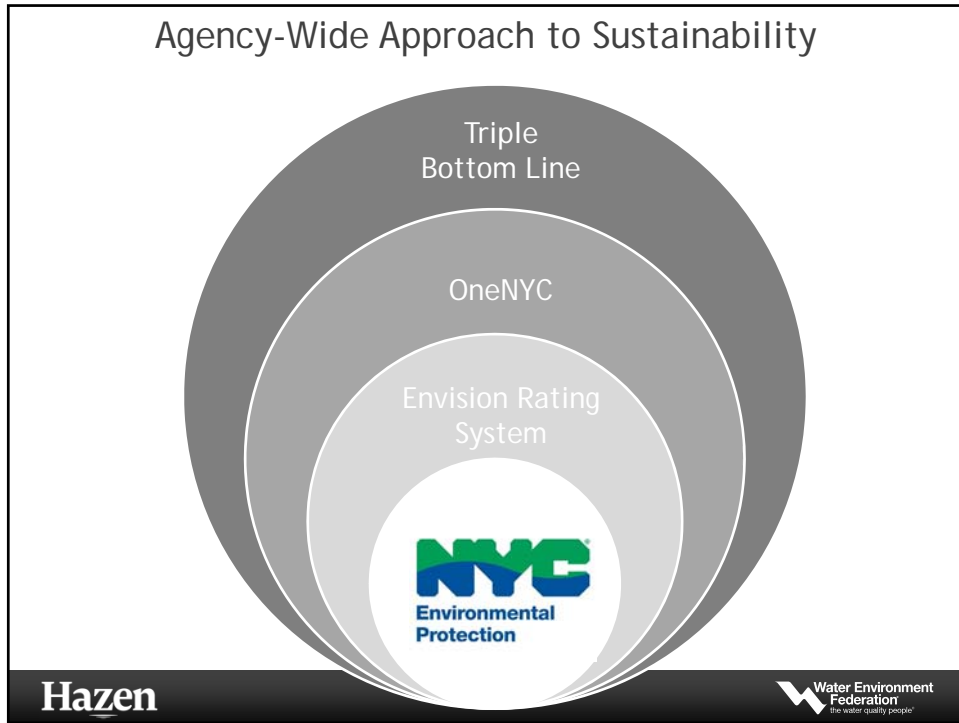
Triple Bottom Line



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DEP Vision Statement


To be the safest, most efficient, cost-effective, resilient, and transparent water utility in the nation.

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Sustainability Section Lead, **BEDC**
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www.nyc.gov/dep facebook.com/nycwater twitter.com/nycwater

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If you're trusted to protect public health
or the environment, **we can help.**

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Questions?

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