

Envision™ Overview



David Taylor, President
Taylor | Future Solutions, LLC

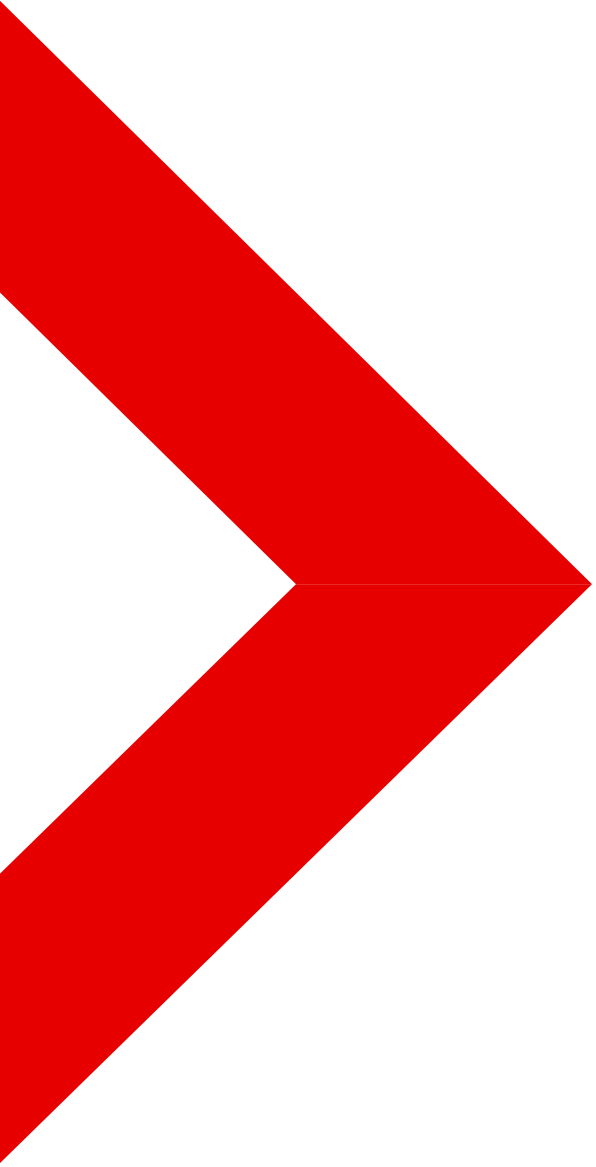
Anthony Kane, Vice President
Institute for Sustainable Infrastructure

TAYLOR



FUTURE SOLUTIONS, LLC

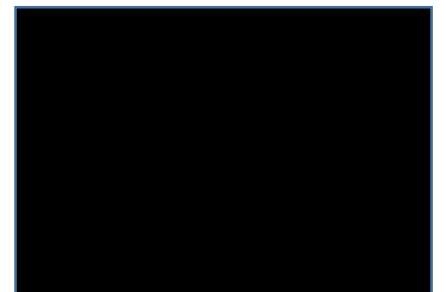
Sustainable Community and Transport Strategies



INTRODUCTIONS AND PURPOSE

Introductions

- **Anthony Kane**, VP, Research and Development, ISI
 - Oversees and directs the research and further development of Envision
 - Formerly research director at the Zofnass Program for Sustainable Infrastructure at Harvard University where he helped develop Envision
 - Bachelor of Architecture and Master in Design Studies
- **David Taylor**, ENV SP, President, Taylor | Future Solutions
 - Heads a consultancy that offers sustainable community and transport strategies to public and private clients
 - Formerly director of Sustainable Transportation Solutions at HDR
 - Actively involved with key professional associations in leadership roles



Purpose

- Understand the rationale for Envision™
- Set the stage for advancing sustainability in your infrastructure investments
- Give you an understanding of Envision™ and how it can benefit decision-making in your projects
- Show examples of how Envision™ is being applied
- Reinforce its importance to your project development process
- Provide you with information for accessing the suite of tools

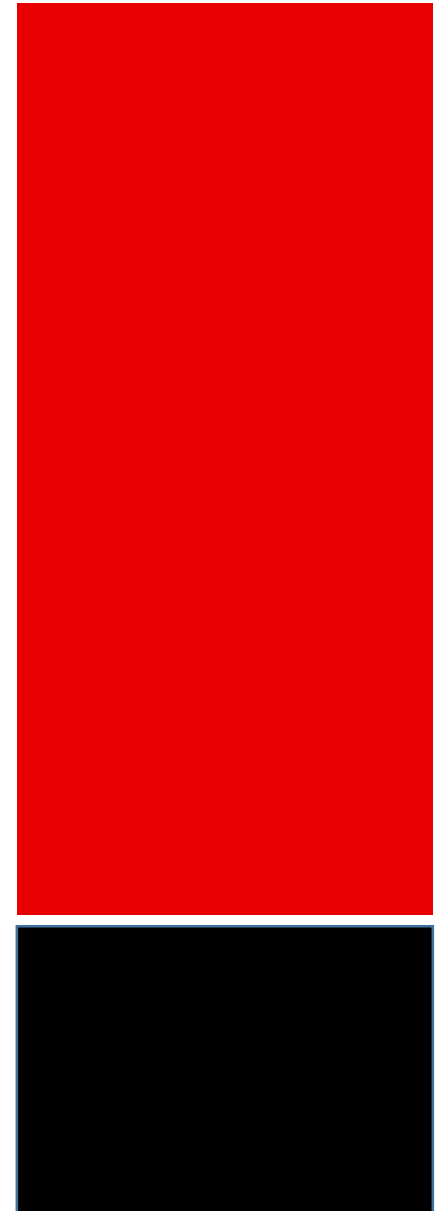




INFRASTRUCTURE AND THE NEED FOR A PLANNING AND RATING SYSTEM

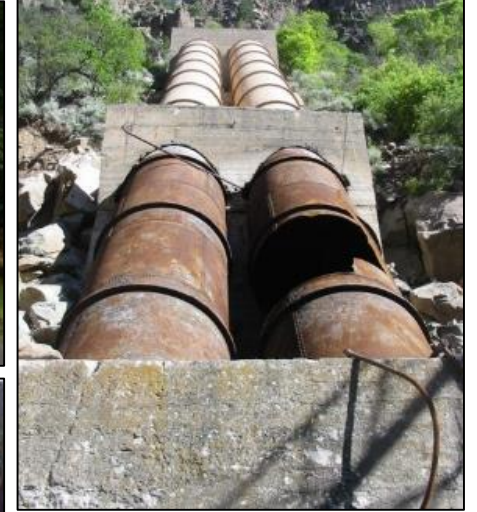
The Importance of Infrastructure

- **World is a dangerous place and infrastructure provides:**
 - **Realities of today's world**
 - **The new fact of life**
- A basis for public health
 - A quality of life worth
 - Population growth
 - Diminished resources
 - Climate change
 - Resilience and adaptation
 - It is not enough that infrastructure works, is constructed on time and within budget, or even that it lasts – it must now be ***sustainable***



State of Infrastructure and Need for Rating

- North American infrastructure in decline
- 900 rating systems worldwide
- No single system for all civil infrastructure across project development phases
- Inconsistent understanding of how to address triple bottom line impacts
- Need to keep pace with ever-changing sustainability concepts
- Envision is designed to fill the gap



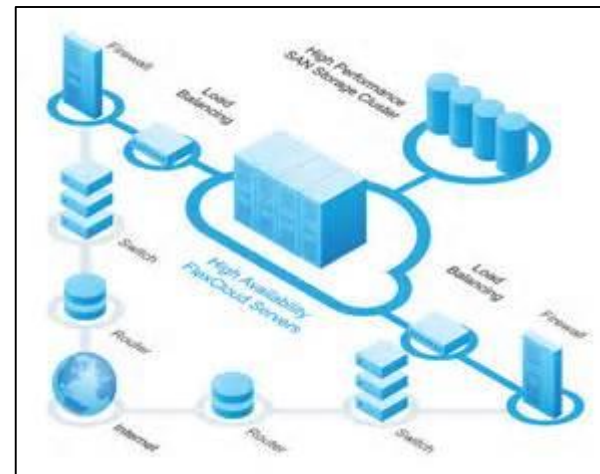
America's State of Bad Repair

- ASCE's 2013 Report Card
 - 16 categories rated
 - Overall grade of D+ (Up from "D" in 2012)
 - \$3.6 trillion investment needed by 2020 to maintain a state of good repair
- World Economic Forum *Global Competitiveness Report*
 - US ranked 25rd worldwide, just ahead of Qatar



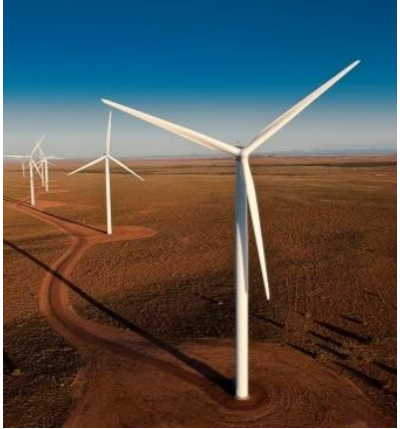


Challenge: Delivering Future Sustainable Infrastructure



Needed - A System for All Horizontal Infrastructure

ENERGY



- Geothermal
- Hydroelectric
- Nuclear
- Coal
- Natural Gas
- Oil/refinery
- Wind
- Solar
- Biomass
- Other

WATER



- Potable water distribution
- Capture and storage
- Water reuse
- Storm water management
- Flood control
- Other

WASTE



- Solid waste
- Recycling
- Hazardous waste
- Collection and transfer
- Other

TRANSPORTATION



- Airports
- Roads/highways
- Bike/pedestrians
- Railways
- Public transit
- Ports
- Waterways
- Other

LANDSCAPE



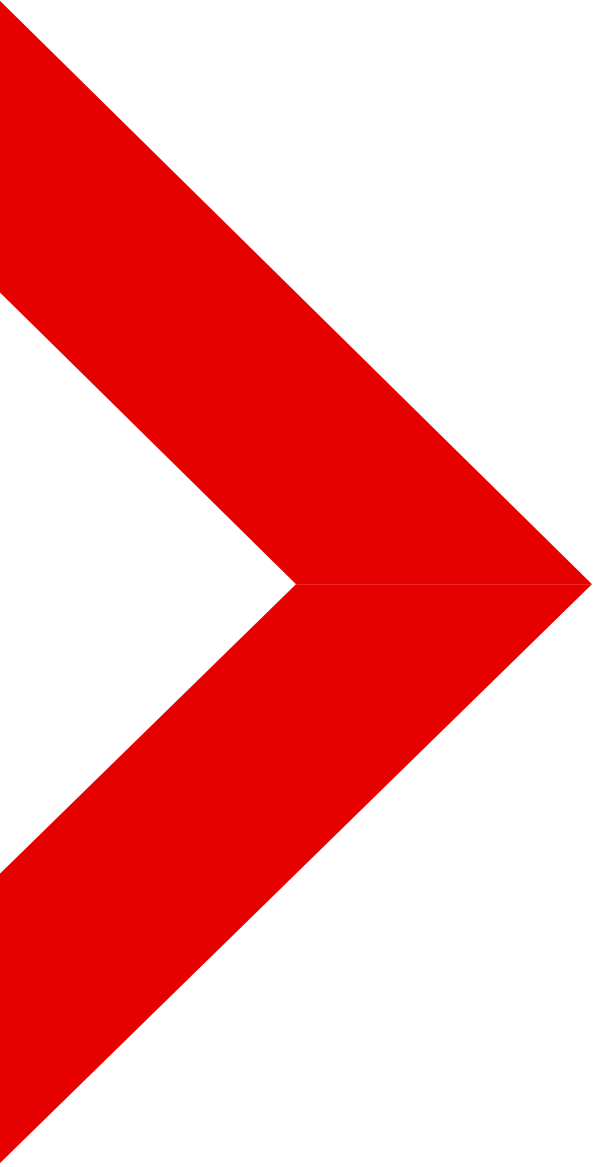
- Public realm
- Parks
- Ecosystem services
- Other

INFORMATION



- Telecommunications
- Internet/phones
- Satellites
- Data centers
- Sensors
- Other

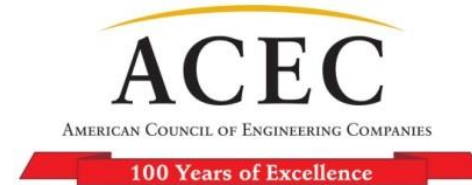




THE ENVISION RATING SYSTEM

Envision™ - Collaborative Development

ISI Founders



Envision Developers



What is Mission of Envision™?

- To help infrastructure owners make more informed decisions about the sustainability of their infrastructure projects
- Offer a system of tools for the planning, designing, constructing, operating and rating of civil infrastructure
 - A self-assessment Checklist
 - The Envision™ Rating Tool
 - A credential program for individuals
 - A Project Verification Program



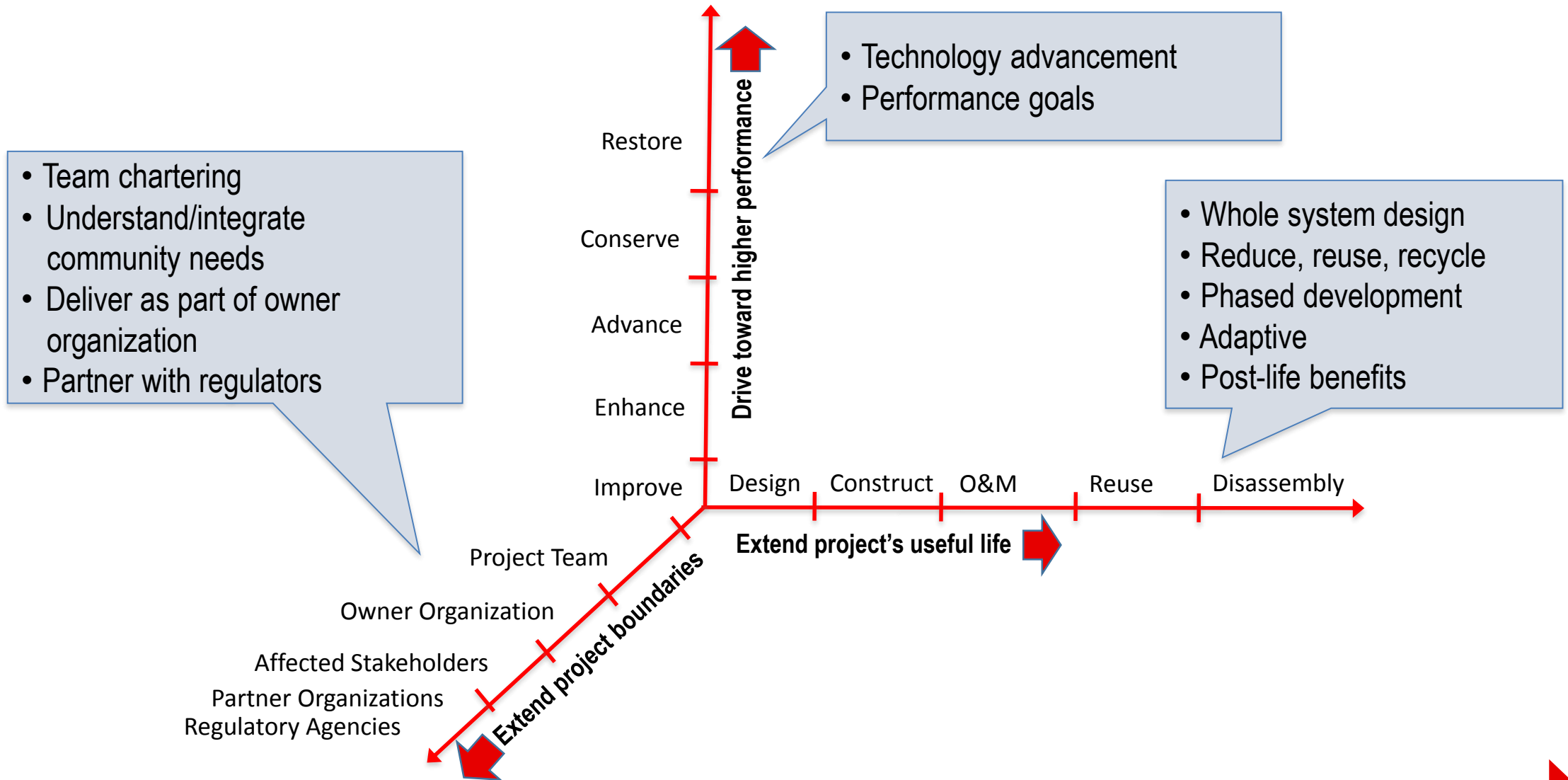
The image shows a portion of the 'ENVISION Pre-Assessment Checklist'. It is a complex table with multiple columns and rows, designed for project teams to assess various sustainability criteria. The title 'ENVISION Pre-Assessment Checklist' is at the top. The table includes sections for 'Project Information', 'Assessment Criteria', and 'Assessment Results'. The 'Assessment Results' section shows a score of 58%.



The image shows a portion of the 'ENVISION Rating Tool'. It is a table with columns for 'Goal', 'Metric', 'Assessment Criteria', 'Assessment Results', and 'Assessment Notes'. The title 'ENVISION Rating Tool' is at the top. The table includes sections for 'Project Information', 'Assessment Criteria', and 'Assessment Results'. The 'Assessment Results' section shows a score of 58%.



Envision and Project Development



5 Categories/14 Subcategories/60 Credits



QUALITY OF LIFE

➔ Purpose, Community, Wellbeing

13 Credits



LEADERSHIP

➔ Collaboration, Management, Planning

10 Credits



RESOURCE ALLOCATION

➔ Materials, Energy, Water

14 Credits



NATURAL WORLD

➔ Siting, Land & Water, Biodiversity

15 Credits



CLIMATE AND RISK

➔ Emissions, Resilience

8 Credits





QUALITY OF LIFE

1 PURPOSE

QL1.1 Improve Community Quality of Life

QL1.2 Stimulate Sustainable Growth and Development

QL1.3 Develop Local Skills and Capabilities

2 WELLBEING

QL2.1 Enhance Public Health and Safety

QL2.2 Minimize Noise and Vibration

QL2.3 Minimize Light Pollution

QL2.4 Improve Community Mobility and Access

QL2.5 Encourage Alternative Modes of Transportation

QL2.6 Improve Accessibility, Safety & Wayfinding

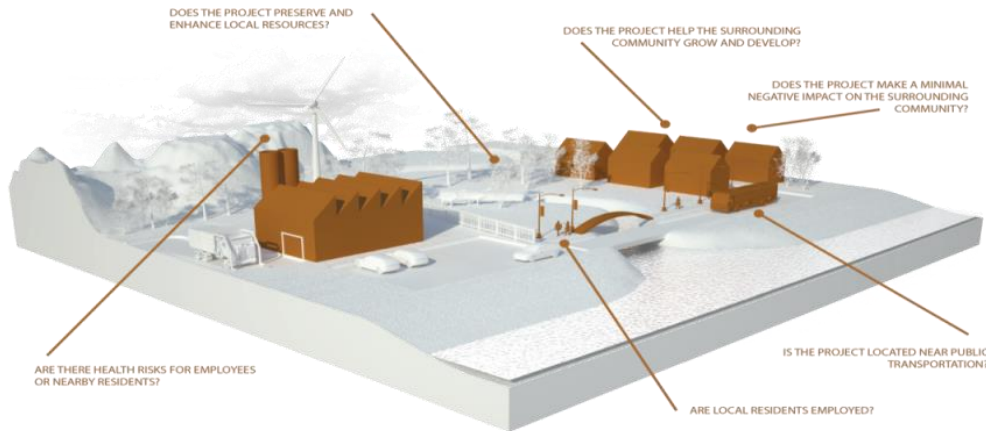
3 COMMUNITY

QL3.1 Preserve Historic and Cultural Resources

QL3.2 Preserve Views and Local Character

QL3.3 Enhance Public Space

QL0.0 Innovate or Exceed Credit Requirements





LEADERSHIP

1 COLLABORATION

LD1.1 Provide Effective Leadership & Commitment

LD1.2 Establish a Sustainability Management System

LD1.3 Foster Collaboration and Teamwork

LD1.4 Provide for Stakeholder Involvement

2 MANAGEMENT

LD2.1 Pursue By-Product Synergy Opportunities

LD2.2 Improve Infrastructure Integration

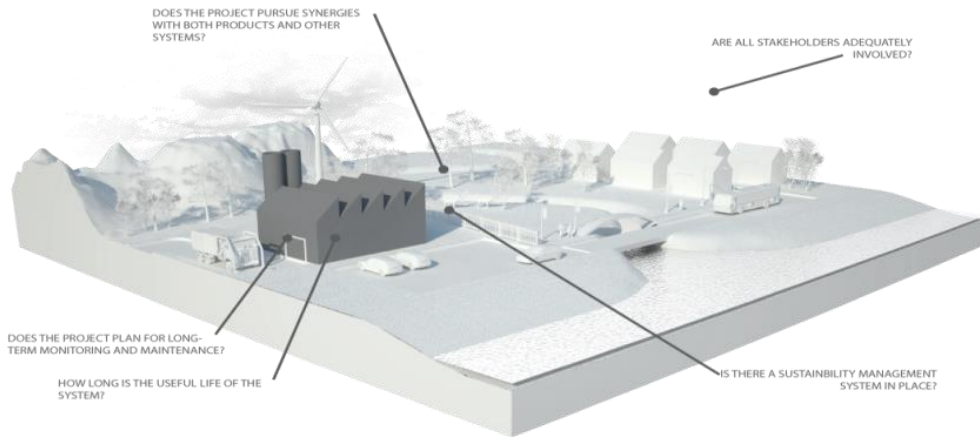
3 PLANNING

LD3.1 Plan Long-Term Maintenance and Monitoring

LD3.2 Address Conflicting Regulations and Policies

LD3.3 Extend Useful Life

LD0.0 Innovate or Exceed Credit Requirements





RESOURCE ALLOCATION

1 MATERIALS

RA1.1 Reduce Net Embodied Energy

RA1.2 Support Sustainable Procurement Practices

RA1.3 Use Recycled Materials

RA1.4 Use Regional Materials

RA1.5 Divert Waste from Landfills

RA1.6 Reduce Excavated Materials Taken Off Site

RA1.7 Provide for Deconstruction and Recycling

2 ENERGY

RA2.1 Reduce Energy Consumption

RA2.2 Use Renewable Energy

RA2.3 Commission and Monitor Energy Systems

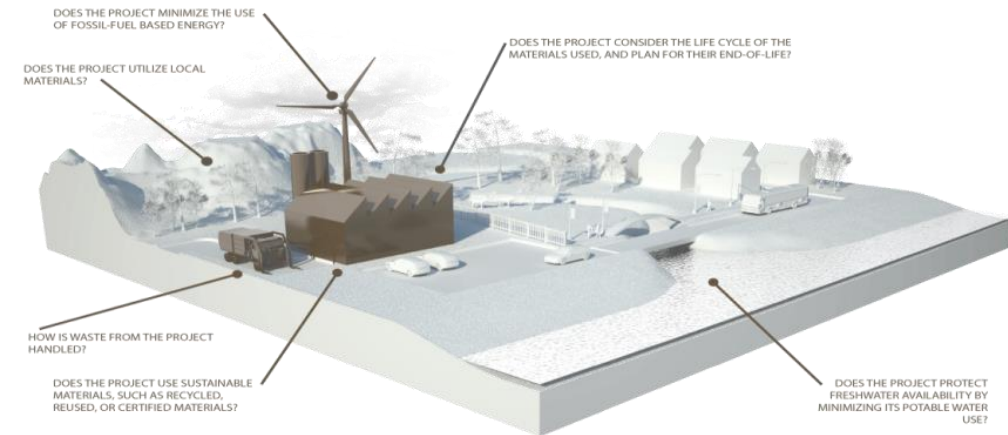
3 WATER

RA3.1 Protect Fresh Water Availability

RA3.2 Reduce Potable Water Consumption

RA3.3 Monitor Water Systems

RA0.0 Innovate or Exceed Credit Requirements





NATURAL WORLD

1 SITING

NW1.1 Preserve Prime Habitat

NW1.2 Preserve Wetlands and Surface Water

NW1.3 Preserve Prime Farmland

NW1.4 Avoid Adverse Geology

NW1.5 Preserve Floodplain Functions

NW1.6 Avoid Unsuitable Development on Steep Slopes

NW1.7 Preserve Greenfields

2 LAND+WATER

NW2.1 Manage Stormwater

NW2.2 Reduce Pesticides and Fertilizer Impacts

NW2.3 Prevent Surface and Groundwater Contamination

3 BIODIVERSITY

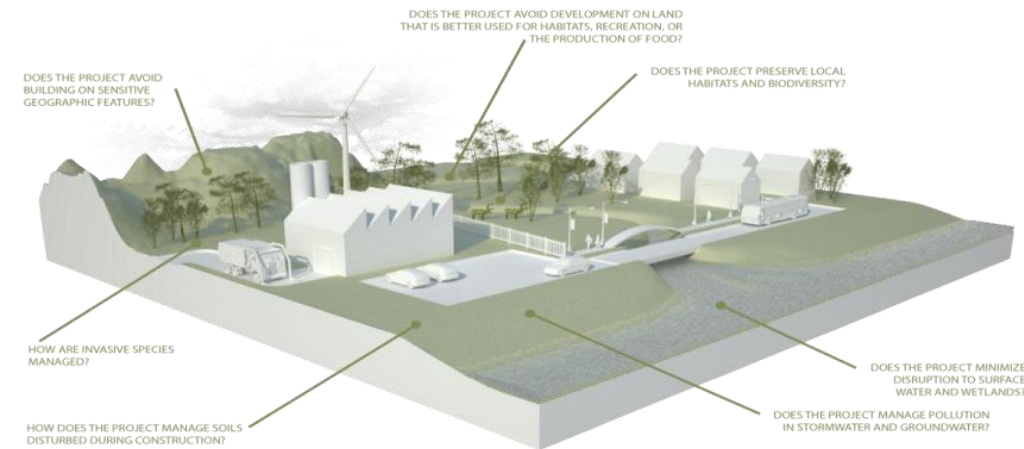
NW3.1 Preserve Species Biodiversity

NW3.2 Control Invasive Species

NW3.3 Restore Disturbed Soils

NW3.4 Maintain Wetland and Surface Water Functions

NW0.0 Innovate or Exceed Credit Requirements





CLIMATE AND RISK

1 EMISSIONS

CR1.1 Reduce Greenhouse Gas Emissions

CR1.2 Reduce Air Pollutant Emissions

2 RESILIENCE

CR2.1 Assess Climate Threat

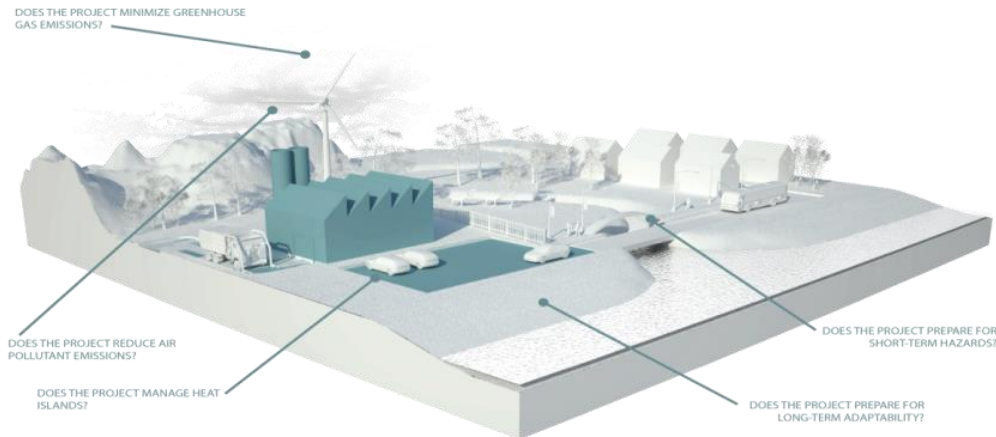
CR2.2 Avoid Traps and Vulnerabilities

CR2.3 Prepare For Long-Term Adaptability

CR2.4 Prepare for Short-Term Hazards

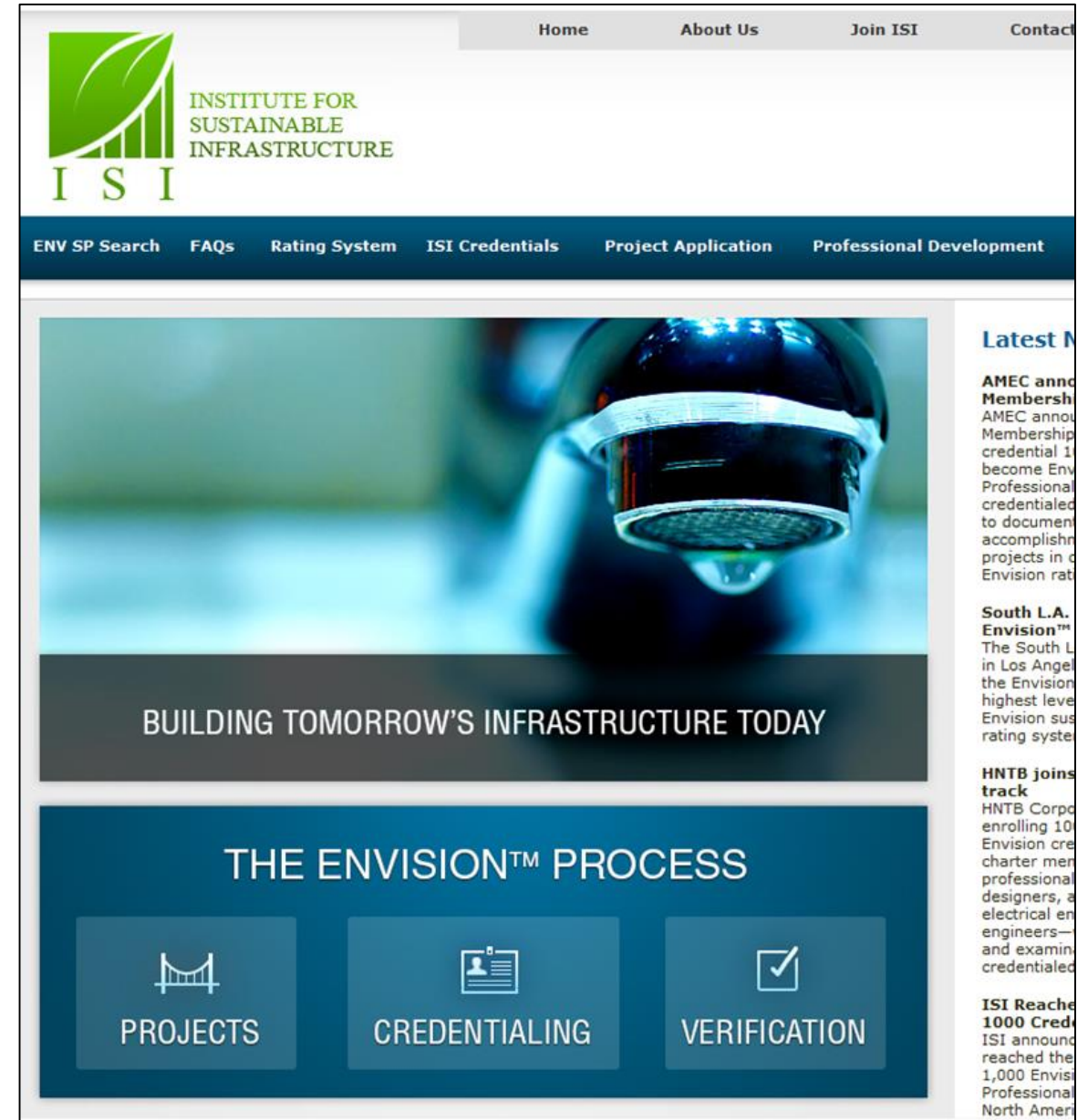
CR2.5 Manage Heat Island Effects

CR0.0 Innovate or Exceed Credit Requirements



Rating System

- Available for no cost on ISI website
 - More in-depth assessment of sustainability aspects of project
 - Evaluation criteria describe five levels of achievement
 - Quantitative and qualitative questions
 - Recognizes innovation
- For Verification
- www.Sustainableinfrastructure.org



Envision Guidance Manual Structure

- Intent
- Metric
- Levels of Achievement
- Description
- Advancing to higher achievement levels
- Evaluation criteria and documentation
- Sources

QL1.1 IMPROVE COMMUNITY QUALITY OF LIFE

INTENT:

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

LEVELS OF ACHIEVEMENT

IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
(2) Internal focus. The project team has located and reviewed the most recent and relevant community planning information. Some, but not systematic outreach to stakeholders and decision makers has taken place. Some relatively easy, but not particularly important or meaningful changes made to the project. No significant adverse community effects are caused by the project (A, B, C)	(5) Community linkages. More substantive efforts to locate, review, assess and incorporate the needs, goals and plans of the host community into the project. Most potential negative adverse impacts of the project on the host community are reduced or eliminated. Key stakeholders are involved in the project decision-making process. (A, B, C)	(10) Broad community alignment. All relevant community plans are reviewed and verified through stakeholder input. The project team works to achieve good project alignment with community plans, recognizing that the scope of the project is a limiting factor. Potential negative impacts on nearby affected communities are reduced or eliminated. (A, B, C)	(20) Holistic assessment and collaboration. The project makes a net positive contribution to the quality of life of the host and nearby affected communities. The project team makes a holistic assessment of community needs, goals and plans, incorporating meaningful stakeholder input. Project meets or exceeds important identified community needs and long-term requirements for sustainability. Remaining adverse impacts are minimal, mostly accepted as reasonable tradeoffs for benefits achieved. The project has broad community endorsement. (A, B, C)	(25) Community renaissance. Through rehabilitation of important community assets, upgraded and extended access, increased safety, improved environmental quality and additional infrastructure capacity, the project substantially reinvigorates the host and nearby communities. Working in genuine collaboration with stakeholders and community decision-makers, the project owner and the project team scope the project in a way that elevates community awareness and pride. Overall quality of life in these communities is markedly elevated. (A, B, C, D)

DESCRIPTION

This credit addresses the extent to which the project contributes to the quality of life of the host community: the community in which the constructed works is situated and directly affects. This determination is based on how well the project team has identified and assessed community needs, goals and objectives, and incorporated them into the project. Relevant community plans are assumed to be a viable expression of those needs, goals, objectives and aspirations. In a real sense, they are the community's expression of their desired quality of life.

Communication and interactions with community stakeholders is essential to reaffirm and improve the assessment. The project team works closely with community stakeholders to identify and address issues and concerns. When operational, the constructed works is expected to contribute to the efficiency and effectiveness of community infrastructure, while having minimal impact on the environment. Its benefits should be seen as equitably distributed throughout the community.

A project designed to benefit one community may have adverse effects on others. The purpose of this credit is to recognize projects that provide significant benefits to affected communities, as well as reduce or eliminate negative impacts. Positive effects on all important dimensions of performance may not be practical. Thus the credit seeks a net positive impact.

If the project team can show that the affected community (or communities) has an existing project assessment and approval process that verifies that the project is in concert with community goals and objectives, and that the project has gone through that process successfully, then that success will constitute achievement of this credit. The level of achievement will be determined by the Assessor and

Verifier, and is a function of the comprehensiveness of the process, the extent to which community stakeholders are engaged in collaborative dialogue (rather than merely outside input to the process), and the degree to which improvements were made and/or adverse impacts mitigated.

ADVANCING TO HIGHER ACHIEVEMENT LEVELS

Benchmark: The project team may have located and reviewed community plans, looking for possible project fatal flaws. The team complies with local regulations and policies for stakeholder involvement.

Performance improvement: Give increased attention to community needs, goals, plans and their relation to the project. Increase the thoroughness and participatory engagement by which community goals and plans are incorporated into the project. Give additional consideration to existing conditions and look for opportunities to rehabilitate community assets. Achieve strong endorsement by stakeholders and community leaders.

EVALUATION CRITERIA AND DOCUMENTATION

A. Has the project team identified and taken into account community needs, goals, plans and issues?

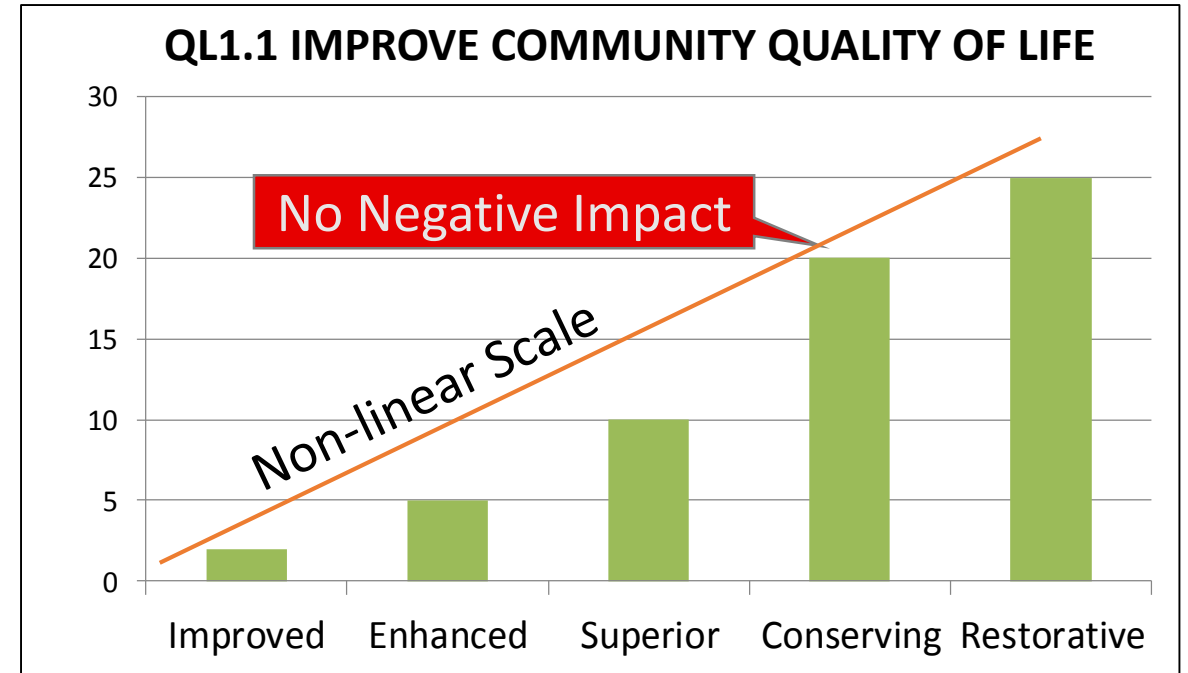
1. Lists and examples of documents obtained and reviewed, minutes of meetings with key stakeholders, community leaders and decision-makers, letters and memoranda.



Credit Levels of Achievement

Number of points earned in each credit depends on the Level of Achievement:

- **Improved:** Performance that is above conventional
- **Enhanced:** Sustainable performance that is on the right track; indications that superior performance is in reach
- **Superior:** Sustainable performance that is noteworthy
- **Conserving:** Performance that has achieved essentially zero impacts
- **Restorative:** Performance that restores natural or social systems



Envision – Online Scoring Sheet

Breezy Plains Windmill Project

Score: 104 Max Score: 181

I want to:

Jump to category: **QL** LD RA NW CR

View the Guidance Manual: [PDF](#) / [HTML](#)

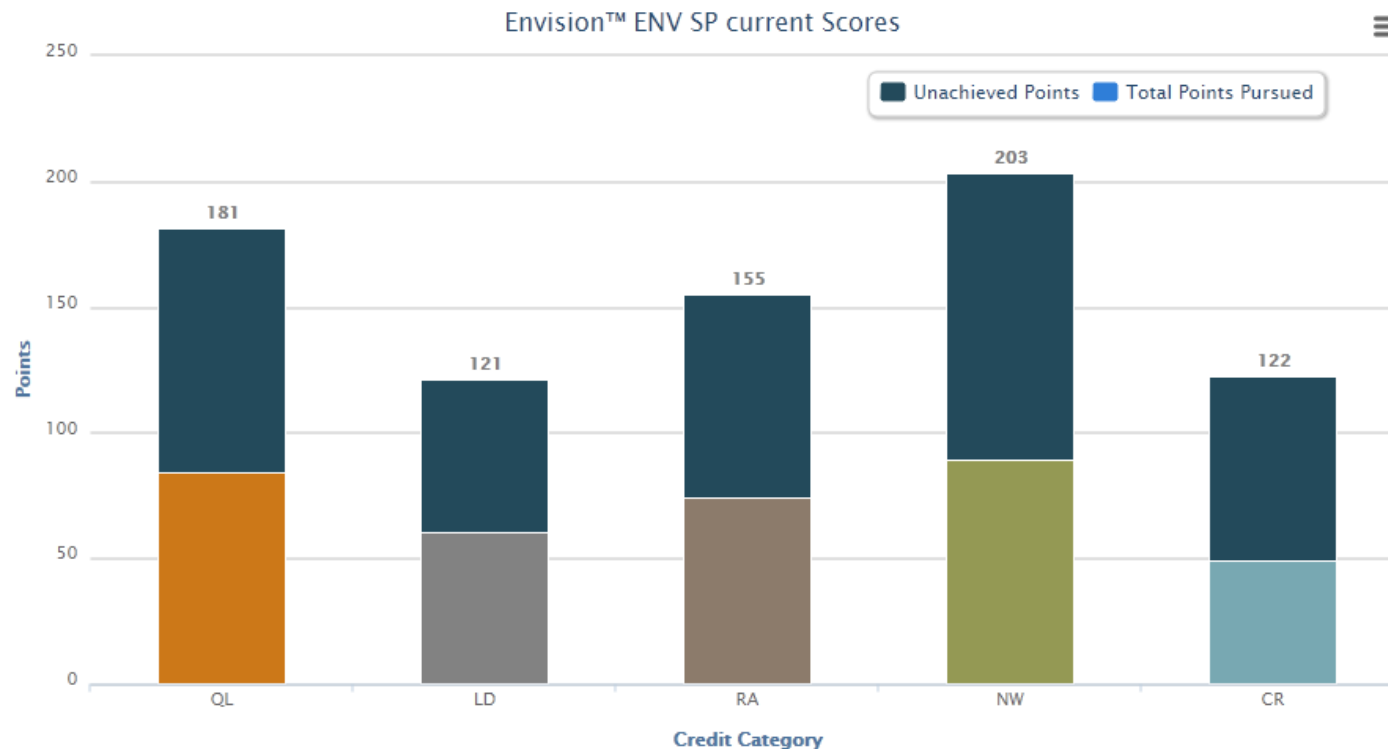
Do You Need Help?

Credit	Credit Intent and Metric	Is this Required for the Project?	Level Of Achievement	Score	Possible Points
QUALITY OF LIFE					
QL1.1	Improve community quality of life. Improve the net quality of life of all communities affected by the project and mitigate negative impacts to communities. details / guidance	Applicability <input type="text" value="Applicable"/>	<input type="text" value="Superior"/>	10	25
Notes:					
QL1.2	Stimulate sustainable growth and development. Support and stimulate sustainable growth and development, including improvements in job growth, capacity building, productivity, business attractiveness and livability. details / guidance	Applicability <input type="text" value="Applicable"/>	<input type="text" value="Improved"/>	1	16
Notes:					



Envision – Summary Score

Credit Category	Applicable Points	Earned Points	Innovation Points	Total Points Pursued	Percentage of Applicable Points
QUALITY OF LIFE	181	84	0	84	46%
LEADERSHIP	121	56	4	60	50%
RESOURCE ALLOCATION	155	74	0	74	48%
NATURAL WORLD	203	89	0	89	44%
CLIMATE AND RISK	122	49	0	49	40%
Total Project Points	782	352	4	356	46%



Verification

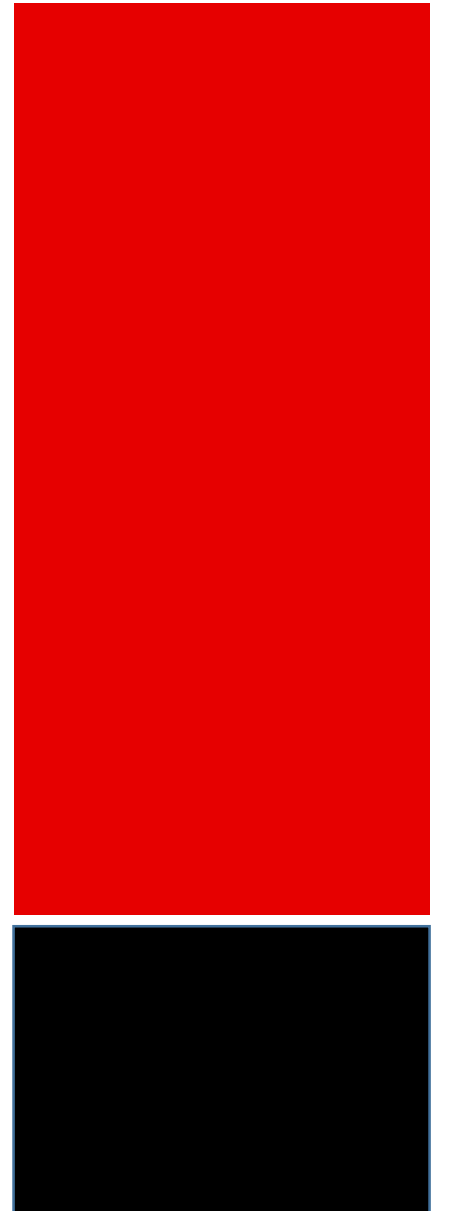
- An optional third-party review with a fee
- ENV SP must submit the project for verification
- Confirms the project meets Envision criteria
- Enables projects to become eligible for awards
- 4 awards, 2 Platinum, 2 Gold
- 30 projects in the pipeline

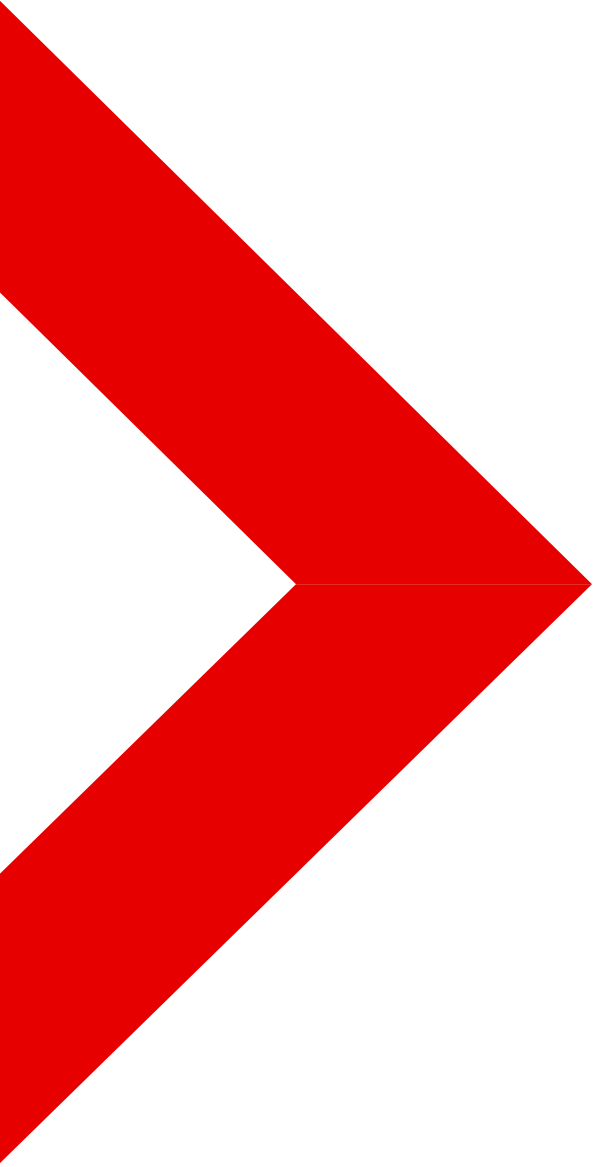
Recognition Level	Total Applicable Points* (%)
Bronze Award	20
Silver Award	30
Gold Award	40
Platinum Award	50



Envision Credentialing and Verifiers

- Envision Sustainability Professional (ENV SP)
 - Training and exam available on ISI website
 - Webinars on ISI website
 - In-person workshops (available soon)
 - Discounts for public sector, university faculty and ISI Members
- Provisional credential for students
- Separate training course for ENV SPs as third party verifiers and trainers





WHAT IS HAPPENING

ENVISION IN THE MARKET

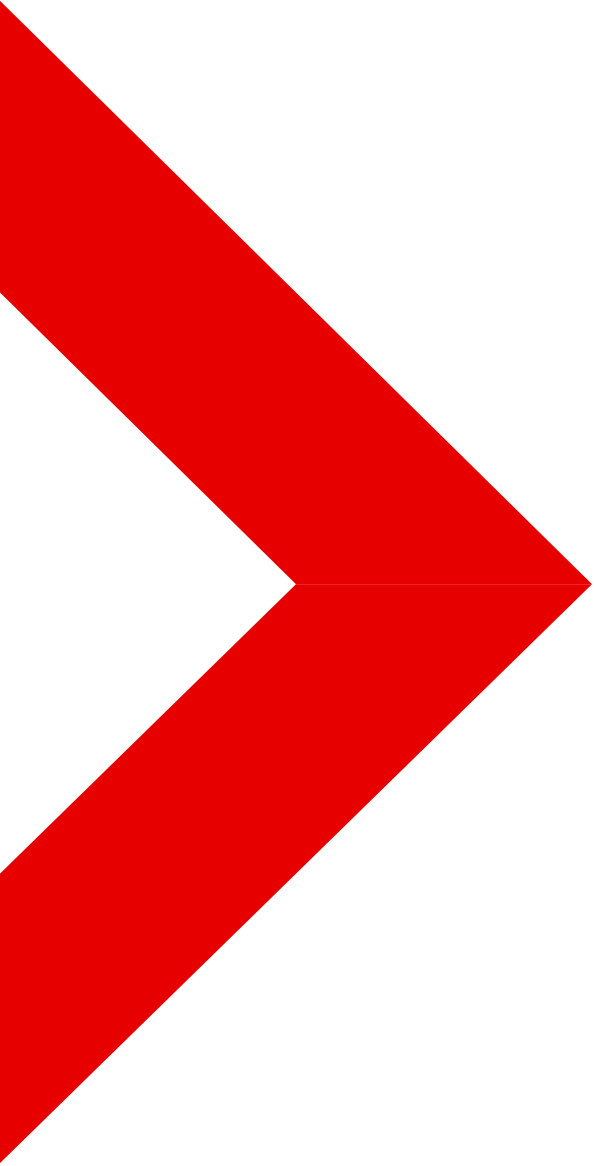
RATED PROJECTS

ENVISION USERS

**ENVISION
SUSTAINABILITY
PROFESSIONALS**

ISI MEMBERSHIP

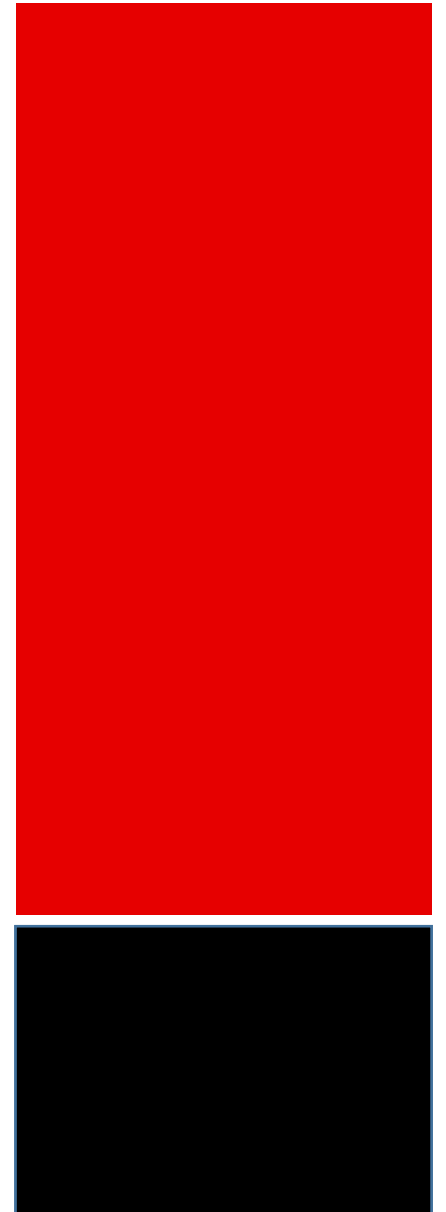
- 4 Project Awards
- Currently 30 in the Envision rating pipeline
- Hundreds of municipalities and agencies using Envision for self-assessment including:
 - NYC Department of Environmental Protection
 - CA Department of Water Resources
 - Port of Long Beach
 - Kansas City, MO
 - LA County Department of Public Works
- 2,300 trained ENV SPs
- 25% from over 200 public sector organizations
- 100 ISI Charter Member organizations

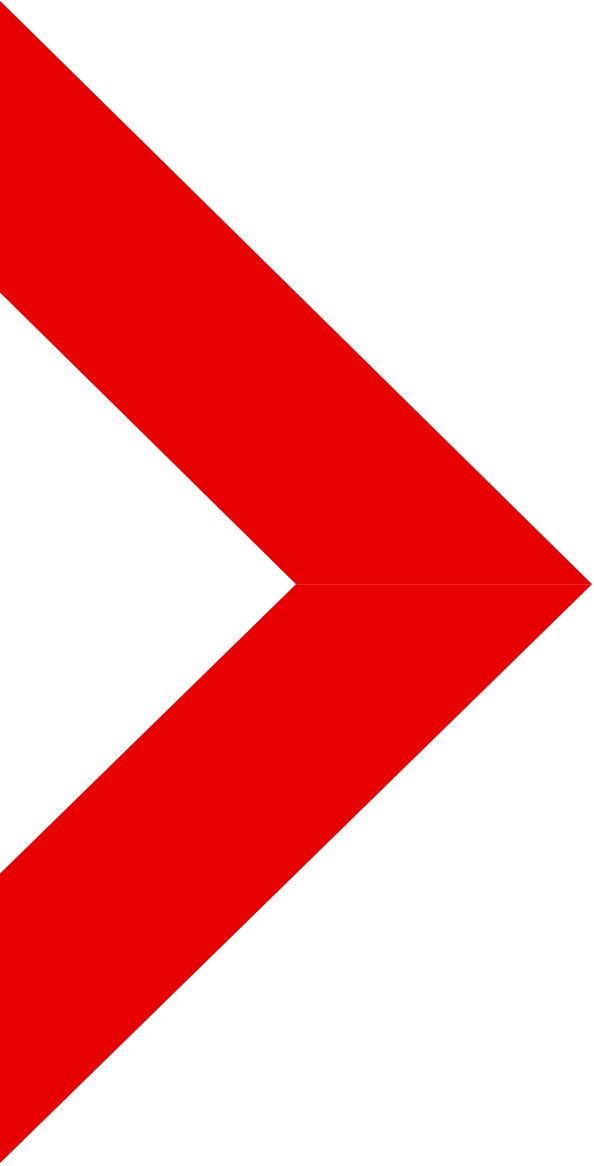


A FINAL REMINDER

At Least Remember that -

- Envision is NOT a “rear view mirror” tool – design, then look back and check
- Envision’s power is guiding the FRONT-END of project development
- Use Envision to help prepare the scope
- The project will be properly delivered and sustainable – without having to sell it that way
- If the owner decides to certify the project, the technical work is largely complete
- www.sustainableinfrastructure.org





Q&A

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