EBC Infrastructure Program:
Understanding the Benefits of the ISI Envision Rating System
Welcome

Jake San Antonio

Program Chair & Moderator
Chair, EBC Infrastructure Committee
Managing Director – Environmental Resources
VHB
Welcome to Foley Hoag LLP

Jeffrey Mullan

Partner

Co-Chair, Administrative Law Department
Foley Hoag LLP

Environmental Business Council of New England
Energy Environment Economy
Program Introduction & Overview

Jake San Antonio

Program Chair & Moderator
Chair, EBC Infrastructure Committee
Managing Director – Environmental Resources
VHB
Introduction to Sustainable Infrastructure and Envision

Kari Hewitt, LEED AP, ENV SP

Director of Sustainability

VHB

Environmental Business Council of New England
Energy Environment Economy
Understanding the Benefits of the ISI Envision Rating System

Presented by
Kari Hewitt, Director of Sustainability, VHB

October 4, 2018

Environmental Business Council – New England
Improving mobility

Enhancing communities

Contributing to economic vitality

Balancing development and infrastructure with environmental stewardship
Our Projects

- High level objectives:
  - Develop all projects through a sustainability lens
  - Contribute to the financial success of our projects
  - Support our clients’ forward thinking for sustainable solutions

- This means ensuring projects are valuable – to our clients and to the public
  - Smart use of public dollars is important for transparency and stakeholder buy-in
Rating Systems: Part of the Sustainability Toolbox
Why Envision?

- Framework/checklist helps organize and streamline processes;
- Covers numerous aspects of socio-economic and environmental sustainability and provides a comprehensive framework for meeting sustainability goals;
- Provide methods and guidance for bringing together stakeholders and decision-makers early and often;
- Can help an agency gain recognition for advancing sustainability in their projects; and
- Provides enhanced transparency.
Organizational Benefits – for VHB and Clients

- A platform for sustainability education
- Launchpad for integrating sustainability into projects
- Interdisciplinary – bridging silos
Envision™ Development

Envision™ Rating System

Zofnass Program

Institute for Sustainable Infrastructure

School of Public Health

Center for the Environment

Graduate School of Design

American Council of Engineering Companies

American Society of Civil Engineers

American Public Works Association
What Types of Infrastructure Does Envision Rate?

- **Energy**
  - Distribution
  - Hydroelectric
  - Coal
  - Natural Gas
  - Wind
  - Solar
  - Biomass

- **Water**
  - Treatment
  - Distribution
  - Capture / Storage
  - Stormwater
  - Flood Control
  - Nutrient Management

- **Waste**
  - Solid waste
  - Recycling
  - Hazardous
  - Waste
  - Collection & Transfer

- **Transportation**
  - Airports
  - Roads / Highways
  - Bikes / Pedestrians
  - Railways
  - Transit
  - Ports
  - Waterways

- **Landscape**
  - Public Realm
  - Parks
  - Ecosystem Services
  - Natural Infrastructure
  - Environmental Remediation

- **Information**
  - Telecom
  - Cables
  - Internet
  - Phones
  - Data Centers
  - Sensors
<table>
<thead>
<tr>
<th>Infrastructure</th>
<th>Grade</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aviation</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>Bridges</td>
<td>C+</td>
<td></td>
</tr>
<tr>
<td>Dams</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>Drinking Water</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>Energy</td>
<td>D+</td>
<td></td>
</tr>
<tr>
<td>Hazardous Waste</td>
<td>D+</td>
<td></td>
</tr>
<tr>
<td>Inland Waterways</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>Levees</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>Parks and Recreation</td>
<td>D+</td>
<td></td>
</tr>
<tr>
<td>Ports</td>
<td>C+</td>
<td></td>
</tr>
<tr>
<td>Rail</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Roads</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>Schools</td>
<td>D+</td>
<td></td>
</tr>
<tr>
<td>Solid Waste</td>
<td>C+</td>
<td></td>
</tr>
<tr>
<td>Transit</td>
<td>D-</td>
<td></td>
</tr>
<tr>
<td>Wastewater</td>
<td>D+</td>
<td></td>
</tr>
</tbody>
</table>
# Cumulative Infrastructure Needs by System Based on Current Trends, Extended to 2025

**All values in billions of constant 2015 dollars**

<table>
<thead>
<tr>
<th>Infrastructure Systems</th>
<th>Total Needs</th>
<th>Estimated Funding</th>
<th>Funding Gap</th>
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</thead>
<tbody>
<tr>
<td>Surface Transportation&lt;sup&gt;1&lt;/sup&gt;</td>
<td>$2,042</td>
<td>$941</td>
<td>$1,101</td>
</tr>
<tr>
<td>Water/Wastewater Infrastructure&lt;sup&gt;1&lt;/sup&gt;</td>
<td>$150</td>
<td>$45</td>
<td>$105</td>
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<tr>
<td>Electricity&lt;sup&gt;1&lt;/sup&gt;</td>
<td>$934</td>
<td>$757</td>
<td>$177</td>
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<tr>
<td>Airports&lt;sup&gt;1&lt;/sup&gt;</td>
<td>$157</td>
<td>$115</td>
<td>$42</td>
</tr>
<tr>
<td>Inland Waterways &amp; Marine Ports&lt;sup&gt;1&lt;/sup&gt;</td>
<td>$37</td>
<td>$22</td>
<td>$15</td>
</tr>
<tr>
<td>Dams&lt;sup&gt;2&lt;/sup&gt;</td>
<td>$45</td>
<td>$5.6</td>
<td>$39.4</td>
</tr>
<tr>
<td>Hazardous &amp; Solid Waste&lt;sup&gt;3&lt;/sup&gt;</td>
<td>$7</td>
<td>$4</td>
<td>$3</td>
</tr>
<tr>
<td>Levees&lt;sup&gt;4&lt;/sup&gt;</td>
<td>$80</td>
<td>$10</td>
<td>$70</td>
</tr>
<tr>
<td>Public Parks &amp; Recreation&lt;sup&gt;5&lt;/sup&gt;</td>
<td>$114.4</td>
<td>$12.1</td>
<td>$102.3</td>
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<tr>
<td>Rail&lt;sup&gt;6&lt;/sup&gt;</td>
<td>$154.1</td>
<td>$124.7</td>
<td>$29.4</td>
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<td>Schools&lt;sup&gt;7&lt;/sup&gt;</td>
<td>$870</td>
<td>$490</td>
<td>$380</td>
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<tr>
<td><strong>TOTALS</strong></td>
<td><strong>$4,590</strong></td>
<td><strong>$2,526</strong></td>
<td><strong>$2,064</strong></td>
</tr>
</tbody>
</table>
Envision Expands the Breadth of a Project’s Contribution to Sustainability

Two Questions…

Will you do the **RIGHT** project?

Will you do the project **RIGHT**?
How can it be used?

• As a planning tool
• As a design tool
• For construction and O&M
• As a communication tool
• For embedding sustainability into standards/policies

Envision takes best practices and principles of infrastructure design and pushes the planning and design team to navigate a more robust assessment of choices—throughout every step of the process.

County of Los Angeles

“Expand and adopt the use of Envision® as a standard for County infrastructure projects and programs as appropriate, including those related to energy, water, waste, transportation, landscape, and information.”
Changes with V3
## Key Changes

<table>
<thead>
<tr>
<th></th>
<th>Envision v2</th>
<th>Envision v3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of credits</strong></td>
<td>60</td>
<td>64</td>
</tr>
<tr>
<td><strong>Maximum total points in the framework</strong></td>
<td>809</td>
<td>1000</td>
</tr>
<tr>
<td><strong>Credit categories</strong></td>
<td>Five (5): Quality of Life, Leadership, Resource Allocation, Natural World, Climate and Risk.</td>
<td>Five (5): Quality of Life, Leadership, Resource Allocation, Natural World, <strong>Climate and Resilience</strong>.</td>
</tr>
<tr>
<td><strong>Cost of Envision</strong></td>
<td>The Envision sustainability framework is available for free.</td>
<td>The Envision sustainability framework will continue to be free for all ISI members.</td>
</tr>
</tbody>
</table>

**ALSO NOW LAUNCHING CREDENTIAL MAINTENANCE PROGRAM**
Envision v3 will not affect the ability of currently registered projects to continue to verify under Envision v2.

All projects registered under Envision v2 will be required to complete verification under that version by December 31, 2020, unless special permission has been granted by ISI.

Beginning January 1, 2019 all new project registrations will only be accepted under Envision v3.

Envision v3 will require a post-construction review.
64 Credits in 5 Categories

- **Quality of Life**
  - 14 Credits
  - Wellbeing, Mobility, Community

- **Leadership**
  - 12 Credits
  - Collaboration, Planning, Economy

- **Resource Allocation**
  - 14 Credits
  - Materials, Energy, Water

- **Natural World**
  - 14 Credits
  - Siting, Conservation, Ecology

- **Climate & Resilience**
  - 10 Credits
  - Emissions, Resilience
# Credits – Levels and Types of Achievement

<table>
<thead>
<tr>
<th>Improved</th>
<th>Enhanced</th>
<th>Superior</th>
<th>Conserving</th>
<th>Restorative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above conventional</td>
<td>On the right track</td>
<td>Noteworthy but not net-zero</td>
<td>Zero negative impact</td>
<td>Restores systems</td>
</tr>
</tbody>
</table>

**Yes/No** – An action taken or an outcome achieved

Does the project avoid development in floodplains?

**Target** – A specified outcome with discrete or variable level

Has the project team diverted at least 75% of significant waste streams away from landfills?

**Execution** – A process conducted to complete a stated objective

Has the project team conducted an overall assessment of lighting needs?

**Accomplishment** – A process conducted with a general result

To what extent has the community been engaged in the project design process?
Wellbeing

Does the project improve the community quality of life and address individual comfort, safety, and health?

Mobility

Is the project located near public transportation? Is there better access to community resources?

Community

Was the development process fair, equitable and inclusive? Will the community character be preserved?

Category Example

Nutrient Management Facility, Alexandria, Virginia (Envision Platinum, 2016)
1. Does the project improve health and safety for the broader community?
2. Does the project preserve and enhance cultural resources?
3. Does the project meet the needs and goals of the community?
4. Does the project make a minimal negative impact on the surrounding community?
5. Was the development process fair, equitable, and inclusive?
6. Is the project located near public transportation?
QL1.3 IMPROVE CONSTRUCTION SAFETY

**INTENT:**
Enhance public and worker safety during construction.

**METRIC:**
Commitments and measures taken during construction to monitor safety, provide feedback mechanisms, train personnel, establish security plans, and make health programs available.
QL1.6 MINIMIZE CONSTRUCTION IMPACTS

INTENT:
Minimize or eliminate the temporary inconveniences associated with construction.

METRIC:
Extent of issues addressed through construction management plans.
INTENT:
Ensure that equity and social justice are fundamental considerations within project processes and decision making.

METRIC:
Degree to which equity and social justice are included in stakeholder engagement, project team commitments, and decision making.
Collaboration

Is everything being done to ensure sustainable elements are seamlessly incorporated into the project?

Planning

Does the project positively address the future?

Economy

Does the project consider direct and indirect economic factors?
1. Are there sustainability commitments from the project developers?
2. Is there a sustainability management plan in place?
3. Are stakeholders engaged?
4. Will the project stimulate economic development?
5. Are local residents employed on the project?
6. Is the project located near public transportation?
INTENT:
Incorporate sustainability principles into project selection/identification in order to develop the most sustainable project for the community.

METRIC:
The degree to which project selection/identification includes sustainability performance assessments in considering alternatives and is part of a larger sustainable development plan.
LD3.3 CONDUCT A LIFECYCLE ECONOMIC EVALUATION

**INTENT:**
Utilize economic analyses to identify the full economic implications and the broader social and environmental benefits of the projects.

**METRIC:**
The comprehensiveness of the economic analyses used to determine the net impacts of the project, and their use in assessing alternatives to inform decision making.
Materials
Are materials used efficiently?

Energy
Does the project reduce energy consumption and increase the use of renewable energy?

Water
Does the project protect and enhance fresh water availability?
1. Is the project constructed from sustainable materials?
2. Does the project manage construction and operational waste?
3. Does the project reduce energy consumption and source renewable energy?
4. Does the project reduce water consumption and protect water resources?
5. Does the project monitor energy and water use?
RA1.4 REDUCE CONSTRUCTION WASTE

INTENT:
Divert construction and demolition waste streams from disposal to recycling and reuse.

METRIC:
Percentage of total waste diverted from disposal.
RA2.2 REDUCE CONSTRUCTION ENERGY USE

**INTENT:**
Conserve resources and reduce greenhouse gases and air pollutant emissions by reducing energy consumption during construction.

**METRIC:**
The number of strategies implemented on the project during construction that reduce energy consumption and emissions.
RA3.3 REDUCE CONSTRUCTION WATER USE

**INTENT:**
Reduce potable water consumption during construction.

**METRIC:**
The number of strategies implemented during construction that reduce potable water consumption.
Siting
Preserve or avoid site features

Conservation
Manage stormwater and prevent contamination

Ecology
Protect species and habitats
1. Does the project avoid sites of high ecological value?
2. Does the project protect wetland and surface water quality?
3. Does the project maintain hydrological functions?
4. Does the project manage stormwater?
5. Does the project protect soil health?
6. Does the project manage or eliminate invasive species?
NW2.1 RECLAIM BROWNFIELDS

INTENT:
Locate projects on sites classified as brownfields.

METRIC:
The degree of remediation of the brownfield site.
**Emissions**

Minimize pollution

**Resilience**

Manage risks

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Climate and Resilience

10 credits, 2 subcategories

- Emissions
- Resilience
1. Does the project reduce greenhouse gas emissions?
2. Does the project reduce air pollutant emissions?
3. Does the project avoid unsuitable sites?
4. Does the project reduce climate change vulnerability?
5. Is the project resilient and adaptable?
INTENT:
Minimize or avoid development on sites prone to hazards.

METRIC:
The degree to which the project is designed and/or sited to avoid or mitigate site related risks.
CR2.4 ESTABLISH RESILIENCE GOALS AND STRATEGIES

INTENT:
To support increased project and community resilience through the establishment of clear objectives and goals.

METRIC:
The degree to which resilience goals expand from initial commitments to quantifiable project objectives, long-term operating plans, and community-wide development plans.
Award Levels

- Third-party review and confirmation of self-assessment score
- Award based on project score
Verification Process

Pathway A: Design + Post-Construction
- Create File
- Self Assess
- Register
- Start Verification
- Design Review
- Award
- Post Construction Review
- Complete

Pathway B: Post-Construction
- Create File
- Self Assess
- Register
- Start Verification
- Post Construction Review
- Award
- Complete
### Verification Fees

<table>
<thead>
<tr>
<th>Project Size ($M)</th>
<th>Registration Fee</th>
<th>Verification Fee</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Pathway A:</td>
<td>Pathway B:</td>
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<td></td>
<td>Design + Post-Construction</td>
<td>Post-Construction</td>
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<td></td>
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<tr>
<td></td>
<td></td>
<td>Member</td>
<td>Non-Member</td>
<td>Member</td>
<td>Non-Member</td>
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<tr>
<td>&lt; 5</td>
<td>$2,000</td>
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<td>$14,000</td>
<td>$9,000</td>
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<td>5 – 25</td>
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<td>100 – 250</td>
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<td>250 – 500</td>
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<td>500 – 1000</td>
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<td>&gt; 1000</td>
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<td>Contact ISI for a quote.</td>
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*The pricing schedule will take effect in July 2018.*
QUALITY OF LIFE: WELLBEING
QL1.1 Improve Community Quality of Life

Levels of Achievement

<table>
<thead>
<tr>
<th>Levels</th>
<th>NA</th>
<th>Improved</th>
<th>Enhanced</th>
<th>Superior</th>
<th>Conserving</th>
<th>Restorative</th>
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<tr>
<td>Criteria</td>
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<td>A, B</td>
<td>A, B, C, D</td>
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<tr>
<td>Applicant Selection</td>
<td>X</td>
<td></td>
<td></td>
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</table>

Summary

Pending? (Yes/No): 

Note: If pursuing verification pathway A “Design + Post-Construction” please indicate whether the level of achievement selection is pending future construction phase documentation. Be sure to also clearly indicate this in the credit summary text and evaluation criteria documentation.

If you indicated that this credit is not applicable, explain why and make specific references to supporting documents or sections of supporting documents presented as evidence. If the credit is applicable, use this space to present an executive summary explaining why the selected level of achievement has been chosen for this credit.

[Insert text here]

Evaluation Criteria and Documentation

Note: State how each criterion was met by the project and to what degree it was met. Make direct reference to supporting documents or sections of supporting documents (e.g., page numbers, headings) to enable the verifier to confirm explanations provided.

A. Has the project team identified and taken into account community needs, goals, and issues?
[Insert text here]

B. Does the project meet or support the needs and goals of the host and/or affected communities?
[Insert text here]

C. Has the project team assessed the social impacts the project will have on the host and affected communities’ quality of life?
[Insert text here]

D. Have the affected communities been meaningfully engaged in identifying how the project meets community needs and/or goals?
[Insert text here]

E. Has the project team addressed negative social impacts?
[Insert text here]
Verification: Roles and Responsibilities

**ENV SP**
Primary project point of contact, liaison between project team and ISI
Provides accurate project details for review

**Verifier**
Reviews project details and credit submittals
Confirms or adjusts credit scores

**ISI Staff**
Oversees the verification process for all projects
Provides consistency in reviews and the verification process
# Credentialing

<table>
<thead>
<tr>
<th>Online Training</th>
<th>Envision v3 Rate (incl. exam)</th>
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</thead>
<tbody>
<tr>
<td>Student / Faculty</td>
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</tr>
<tr>
<td>Public Sector</td>
<td>$250</td>
</tr>
<tr>
<td>Private Sector (member)</td>
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<tr>
<td>Private Sector (non-member)</td>
<td>$850</td>
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</table>

<table>
<thead>
<tr>
<th>In-person Training Workshops</th>
<th>Envision v3 Rate (incl. exam)</th>
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</thead>
<tbody>
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<td></td>
<td>Fee to ISI</td>
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<tr>
<td>Student / Faculty</td>
<td>$150</td>
</tr>
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<td>Public Sector</td>
<td>$250</td>
</tr>
<tr>
<td>Private Sector</td>
<td>$400</td>
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</table>
Exam Details

- Online exam (any computer) – new V3 exam launches September
- Registration is required
- 75 multiple choice questions
- Open book
  - Need to use the Envision Guidance Manual
  - Reference training materials as well
- 75% is a passing grade
- Immediate scoring and indication of pass/fail result
# Credential Maintenance

<table>
<thead>
<tr>
<th></th>
<th>Member (including individuals)</th>
<th>Non-Member</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education</strong></td>
<td>7 hours per year • 2 prescribed by ISI • 5 user’s choice</td>
<td>7 hours per year • 2 prescribed by ISI • 5 user’s choice</td>
</tr>
</tbody>
</table>
| **Fee**              | $50/year  
Includes $50 “course credit” covering the 2 courses prescribed by ISI plus 3 user’s choice  
(5 courses total @ $10 per course) | $80/year  
Includes $80 “course credit” covering the 2 courses prescribed by ISI plus 2 user’s choice.  
(4 courses total @ $20 per course) |
| **Additional Course Fees** | $10/course                                                                                     | $20/course                                                                 |
Questions?

Kari Hewitt | khewitt@vhb.com | 617.607.0971
Moderated Discussion

Moderator: Jake San Antonio, VHB

Panelists:

- Andrew Brennan, Senior Director Energy & Environment, MBTA
- Chris Frano, P.E., ENV SP, Estimator, Skanska
- Kari Hewitt, LEED AP, ENV SP Director for Sustainability, VHB

Environmental Business Council of New England
Energy Environment Economy