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<https://tinyurl.com/cwwa-envision>

# STICKS & CARROTS

Motivation and Performance Assessment for  
Sustainable & Resilient Capital Project Delivery

Lourette Swanepoel, MASLA, RPP, MCIP, ENV SP

CCWA National Conference

November 2024



Société canadienne  
de génie civil

Canadian Society for  
Civil Engineering



ENVIION  
CANADA



Institute for  
Sustainable  
Infrastructure

# Agenda

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1. **Sustainability** – A Call to Action (10min)
2. **Fundamentals** – Introduction to Envision® (10min)
3. **Organization** – The Framework Structure (15min)

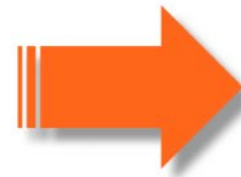
**Table Discussion (10min)**

4. **Uptake** – Water Sector Opportunity (15min)

**Table Discussion (20min)**

5. **Benefits** (10min)

# 1<sup>st</sup> of 7 Modules Complete!



Envision  
Credentialing  
Exam



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# 1 Sustainability - A Call to Action





Earthrise, 1968 Apollo 8

That's here.

That's home.

That's us."

Carl Sagan





*“ Sustainable development is ...*

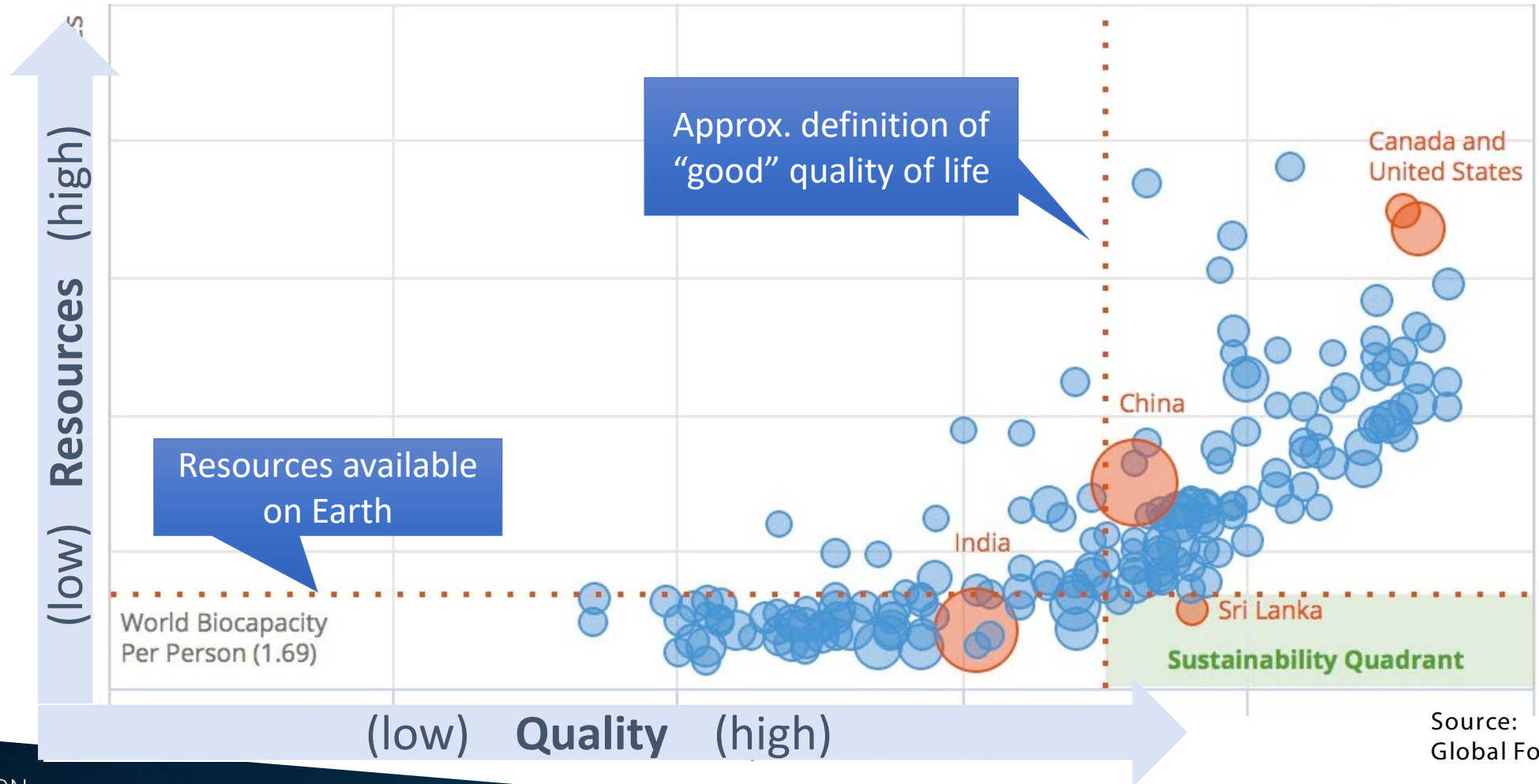
*...development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”*

*-Brundtland Commission Report 1987*

# Sustainability



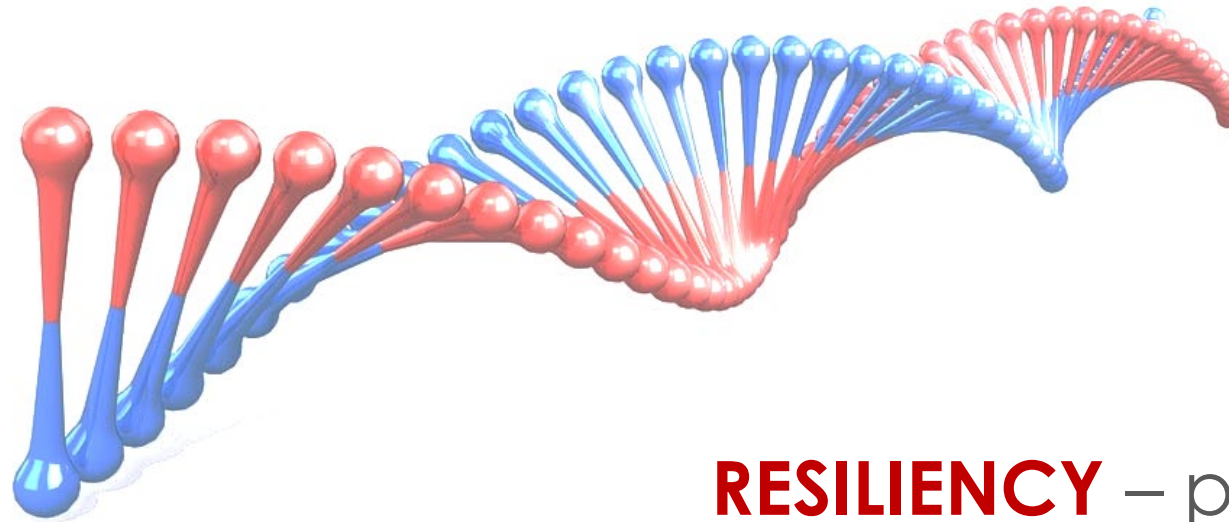
# Development vs. Resources



Source:  
Global Footprint Network



**SUSTAINABILITY** – protecting  
the earth from humans' harm



**RESILIENCY** – protecting  
humans from earth's harm

# Adapting to Future Realities



Highways  
20-50 years



Bridges  
30-75 years



Pipelines  
50-100 years



Dams  
50-100 years



# How are you building?

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The only true measure of success is the ratio between what we might have done on the one hand, and the thing we have made on the other.

[H. G. Wells adapted]

# 2

## Fundamentals – Introduction to Envision®





ENVISION™

# Introducing Envision

**Envision is a blueprint for fundamental change in infrastructure development.**

- Enables a **thorough examination** of the sustainability and resiliency of infrastructure projects
- Provides **practical guidance** on how to improve performance
- Drives **better project management**



ENVISION  
CANADA



# Institute for Sustainable Infrastructure (ISI)

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**Education and research nonprofit** (501c3) based in Washington, D.C.

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**Founded in 2010** by ACEC, APWA, and ASCE



Collaborated with the then **Zofnass Program for Sustainable Infrastructure at the Harvard Graduate School of Design** to develop and manage a sustainability rating system for infrastructure



The first version of the **Envision framework** and rating system was introduced in 2012



# Envision Canada Partnership

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[www.envisioncanada.com](http://www.envisioncanada.com)

# What type of infrastructure?



Energy



Water



Waste



Transportation



Landscape

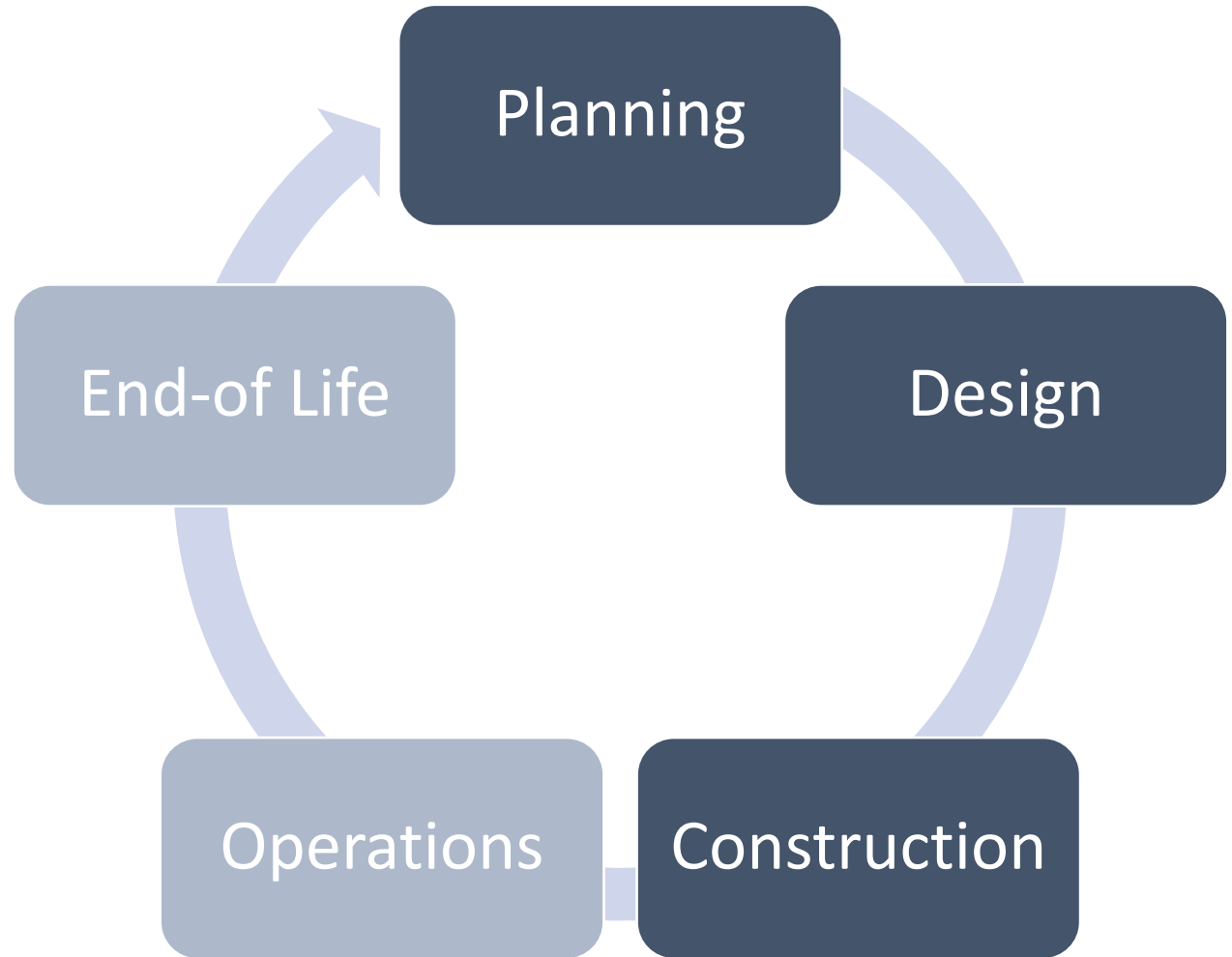


Information

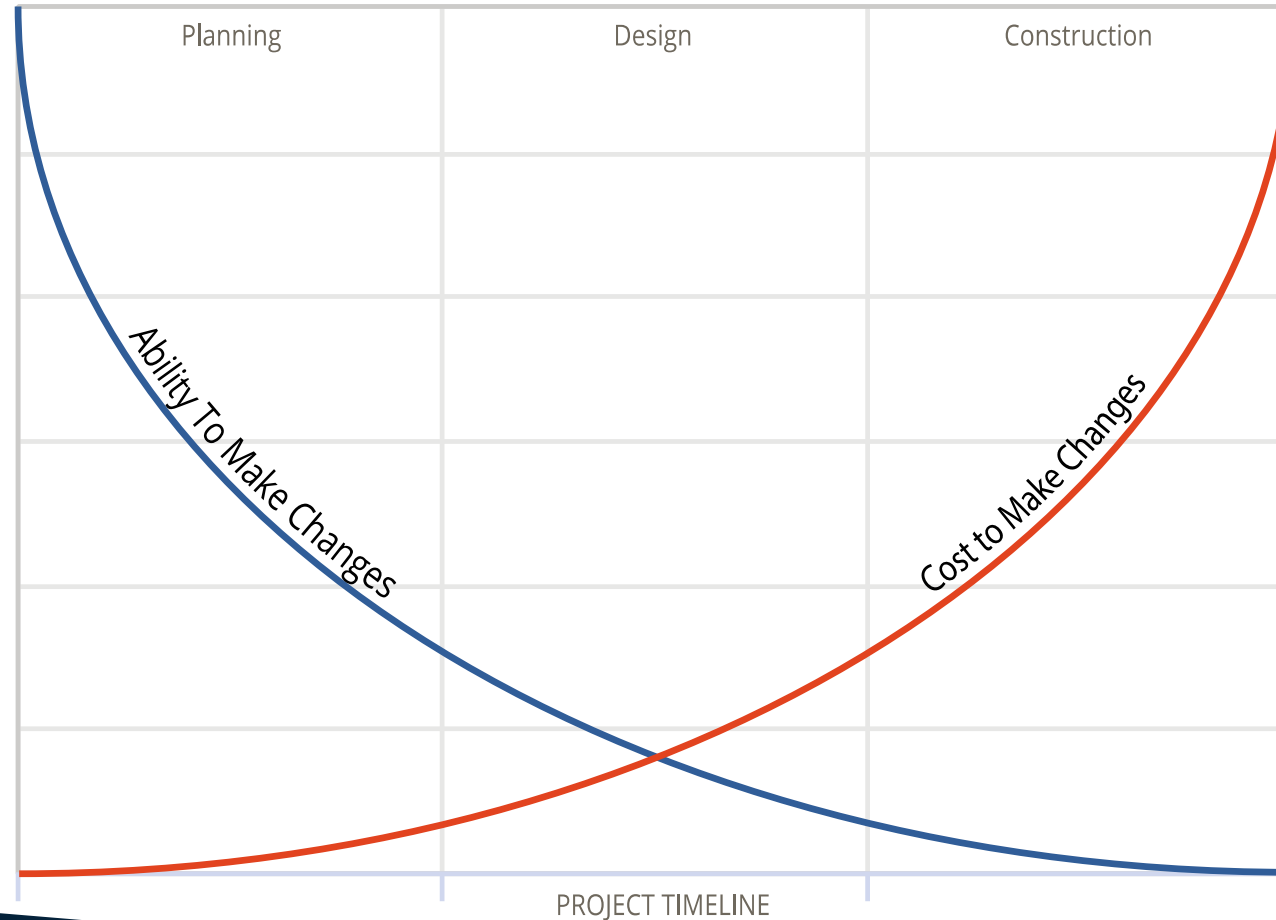


# When and who?

- **Owners**
- **Designers**
- **Contractors**
- **Primary & Secondary Stakeholders**



# Making the Most of Opportunities





# The Global Envision Community

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*\*as of March 31, 2024*

# Components



## MEMBERSHIP & PROFESSIONAL CREDENTIALING

Be recognized in the industry for your sustainability knowledge and skills.



## PROJECT SELF-ASSESSMENT CHECKLIST

Rate a project's sustainability components against the framework's criteria.



## GUIDANCE MANUAL

The primary reference document of the Envision sustainability framework.



## PROJECT VERIFICATION & AWARDS / RECOGNITION

*Based on % of applicable points achieved*



**Verified**  
20-29%



**Silver**  
30-39%



**Gold**  
40-49%



**Platinum**  
50% or more

# Membership & ENV SP Professional Credential

## Individual Membership

Private - **\$25/yr**

Public – **Free**

Academia – **Free**

Also Corporate  
Group Rates

## Envision Sustainability Professional Credential

- Lead the project team in a project assessment
- Expand industry knowledge on sustainability-related concepts, tools, and designs
- 7 hrs training and open book exam
- Annual credential maintenance


### Self-paced online training access rates

Private Non-Member	Private ISI Member	Government Employee	Full-Time Faculty	Full-Time Student
\$1,062.50	\$875	\$312.50	\$187.50	\$187.50



# Envision Pre-Assessment Checklist

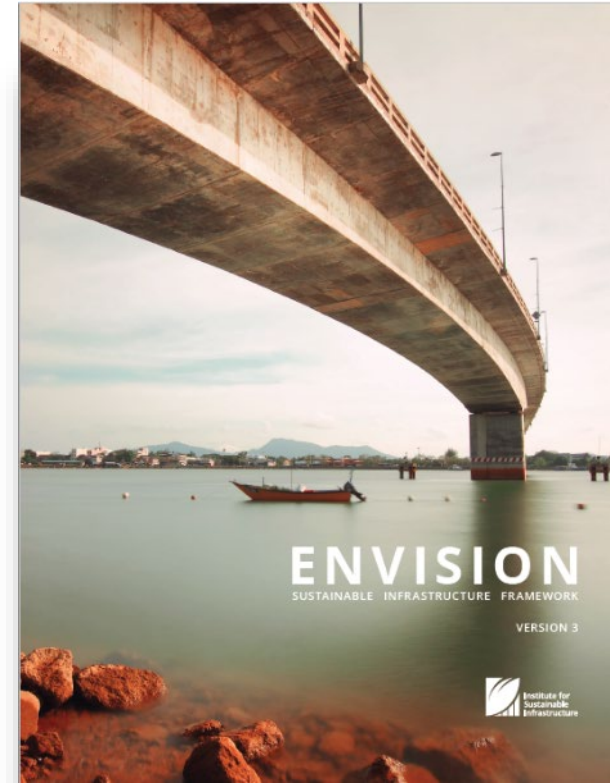
- Free to Download
- No Training Necessary
- Yes/No/NA Responses

 <b>Quality of Life</b>	
1. WELLBEING	
QL 1.1 Improve Community Quality of Life	0 of 26 Points
<b>Intent:</b> Improve the net quality of life of all communities affected by the project and mitigate negative impacts to communities.	
<b>Metric:</b> Measures taken to assess community needs and improve quality of life while minimizing negative impacts.	
<b>Applicability:</b> It is likely that all projects have the ability to align project objectives with community needs and goals, identified through active engagement, in order to achieve broad community satisfaction. It would therefore be difficult to demonstrate that the credit is not relevant or applicable to a project seeking an Envision award.	
	<b>Yes/No</b>
Is this credit applicable?	Yes
<b>Assessment Questions:</b>	<b>Criteria Met?</b>
A Has the project team identified and taken into account community needs, goals, and issues?	-
B Does the project meet or support the needs and goals of the host and/or affected communities?	-
C Has the project team assessed the social impacts the project will have on the host and affected communities' quality of life?	-
D Have the affected communities been meaningfully engaged in identifying how the project meets community needs and/or goals?	-
E Has the project team addressed negative social impacts?	-
F Are the affected communities satisfied that the project addresses their needs and goals as well as mitigates negative impacts?	-
G Does the project proactively address long-term social, economic, or environmental changes that impact quality of life?	-
	<b>Yes = 0 of 7</b>

Page 1

# Envision Guidance Manual

- The written framework
- Background information
- Guidance on how to assess and document each credit





# Verification & Award Recognition

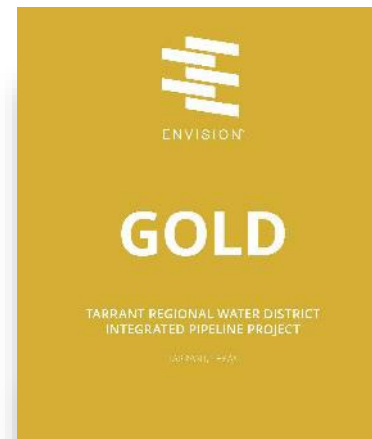
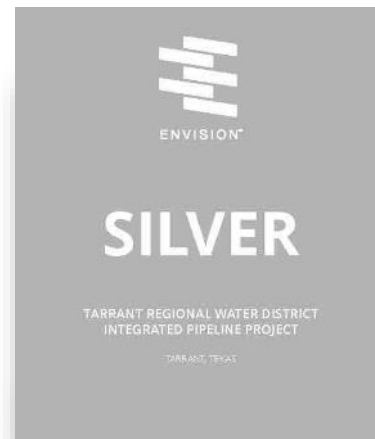
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20%

30%

40%

50%



# More than a Scoring Tool

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**Funders** motivating higher performance

**Owners** demonstrating walk-the-talk

**Departments** benchmarking performance and improving

**Project teams** coordinating & communicating efforts

**Consultants** differentiating

**Communities** seeking accountability and transparency

# 3 Organization – The Envision Framework Structure

# 64 Credits in 5 Categories

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## Quality of Life

14 Credits

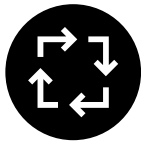
Wellbeing, Mobility, Community



## Leadership

12 Credits

Collaboration, Planning, Economy



## Resource Allocation

14 Credits

Materials, Energy, Water



## Natural World

14 Credits

Siting, Conservation, Ecology



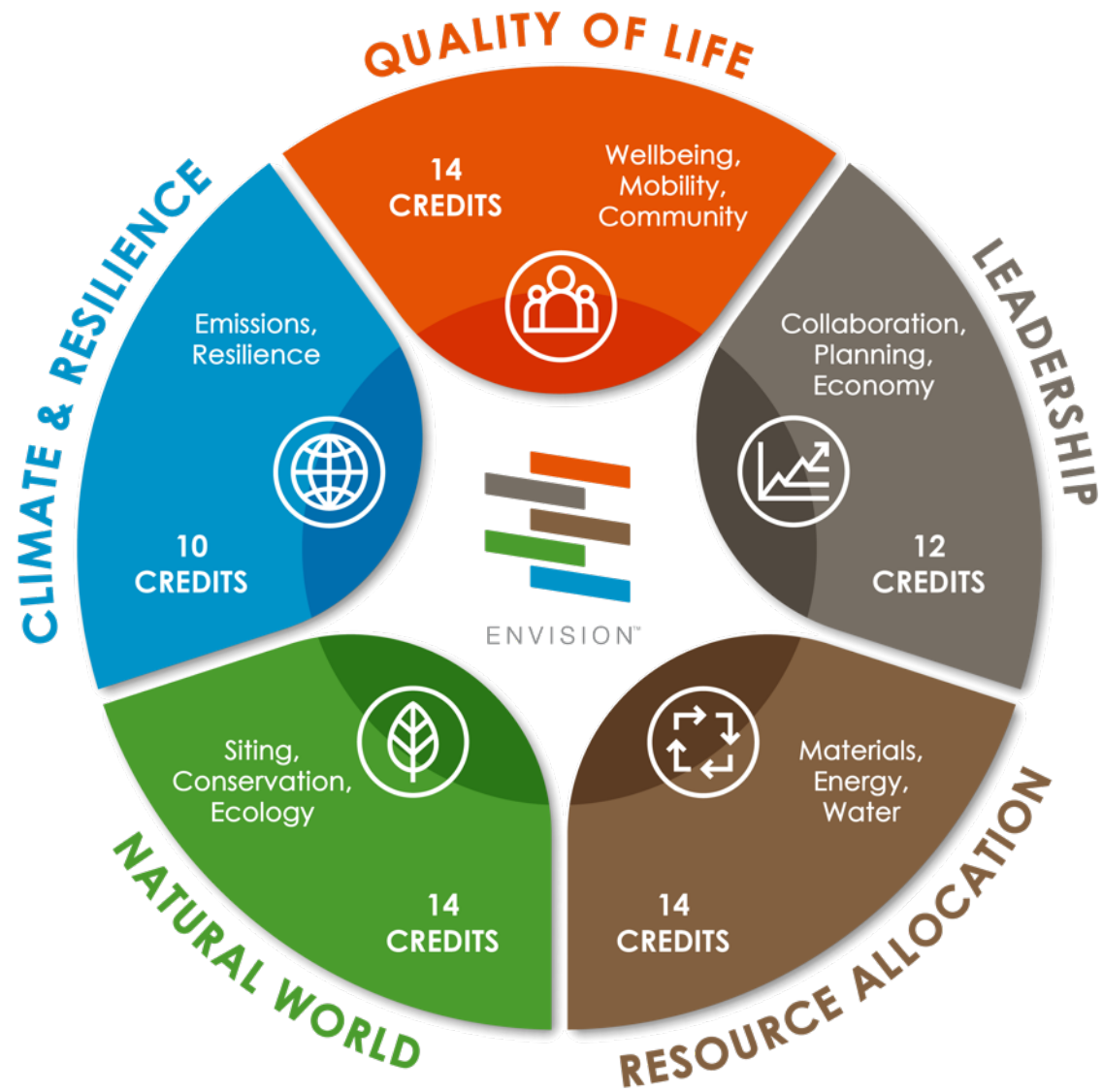
## Climate & Resilience

10 Credits

Emissions, Resilience



# 5 Categories 64 Credits





# 64 Credits (Sustainability & Resilience Indicators)



**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

QL0.0 Innovate or Exceed Credit Requirements



**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
- LD0.0 Innovate or Exceed Credit Requirements



**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

RA0.0 Innovate or Exceed Credit Requirements



**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

NW0.0 Innovate or Exceed Credit Requirements



**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

CR0.0 Innovate or Exceed Credit Requirements





# Federal Alignment

- Greening Government Strategy
- Emissions Reduction Plan
- Policy of Green Procurement
- Climate Lens
- Impact Assessment Act
- National Adaptation Strategy



# Envision Credits



## Quality of Life

### 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

# Envision Credits

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## Leadership

### 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



# Envision Credits



## Resource Allocation

### 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

# Envision Credits



Natural World

## 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



# Envision Credits

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Climate and  
Resilience

## 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







### 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
<p>(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.</p> <p>(B) The project meets or supports community needs and/or goals.</p> <p>(C) The project assesses the social impacts it will have on the host and affected communities' quality of life.</p> <p>(D) The affected communities are meaningfully engaged in identifying how the project supports community needs and/or goals.</p> <p>(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.</p> <p>(F) Community satisfaction is demonstrated by feedback from the stakeholder engagement process verifying actions taken in criteria A, B, C, and D.</p> <p>(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.</p>				

#### DESCRIPTION

This credit addresses the extent to which a project contributes to the quality of life of the host and affected communities. As this can be subjective, the credit criteria address how well the project team has identified, assessed, and incorporated community needs, goals, and issues 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 desired quality of life.

Unfortunately, infrastructure projects are often perceived as having negative impacts on communities. This "not in my back yard" (NIMBY) mentality can be addressed through active engagement and the proper alignment of projects with community needs, goals, and issues. Community support and engagement are critical to ensure the appropriate and effective investment of resources in infrastructure. Project teams and owners should consider how aligning the project

with community goals reduces the risk of community conflicts that disrupt project delivery and increase cost.

#### PERFORMANCE IMPROVEMENT

**Improved:** The project team can demonstrate an understanding of the community needs, goals, and issues, and communicate how the project meets or supports those goals.

**Enhanced:** Communication and interactions with community stakeholders are essential to reaffirm and improve the project objectives. The project team works closely with community stakeholders to identify and assess potential social impacts. Social impacts include the intended and unintended social consequences, both positive and negative, of infrastructure projects and any social changes initiated by those projects.

**Superior:** Infrastructure projects often include difficult trade-offs involving positive and negative impacts, and a project designed to benefit one community may have adverse effects on others. In addition, the needs of a community may conflict with their expressed goals. Because positive impacts in all dimensions of performance may not be possible, the credit seeks a net positive impact. Importantly, the project benefits and impacts should be equitably distributed throughout the host and affected communities.

**Conserving:** Community satisfaction is the metric for quality of life. It should be evident that the community truly understands the full impact (positive and negative) of the project and is satisfied that it addresses their needs and goals while appropriately mitigating negative impacts. Documentation of community endorsement should be as broad as possible and specific to the requested documentation.

**Restorative:** The project team proactively identifies instances where long-term trends in socioeconomic or environmental conditions may undermine existing community aspirations and addresses them in the project.

**Applicability:** It is likely that all projects have the ability to align project objectives with community needs and goals, identified through active engagement, in order to achieve broad community satisfaction. It would therefore be difficult to demonstrate that the credit is not relevant or applicable to a project seeking an Envision award.

#### EVALUATION CRITERIA AND DOCUMENTATION GUIDANCE

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

1. Documentation that the project team has located and reviewed the most recent community planning information and assessed relevant community needs, goals, and/or issues. For example, meeting minutes with key stakeholders, community leaders, and decision makers; letters; and memoranda.

##### B. Does the project meet or support the needs and goals of the host and/or affected communities?

1. Evidence showing a comparison of the project vision and goals to the needs, goals, and/or issues of the community.

##### C. Has the project team assessed the social impacts the project will have on the host and affected communities' quality of life?

1. Assessing, identifying and evaluating the positive and negative social impacts of the project on affected communities' quality of life (e.g., a social impact assessment). Expectations for the depth and breadth of documentation are commensurate with the scale of the project and its impact on the broader community. Informal assessments are acceptable for small projects, provided that project teams present evidence supporting their conclusions.

##### D. Have the affected communities been meaningfully engaged in identifying how the project meets community needs and/or goals?

1. Documentation of processes for collecting, evaluating, and incorporating community input into the planning and design process (e.g., meetings, design charrettes, and communications with representatives of affected communities).

##### E. Has the project team addressed negative social impacts?

1. Evidence showing the extent to which options for mitigating negative impacts were identified and prioritized, and reasonable changes to the project made. Strategies for mitigating negative impacts should follow a hierarchy prioritizing avoidance, minimization, restoration, and offsetting.

##### F. Are the affected communities satisfied that the project addresses their needs and goals as well as mitigates negative impacts?

1. Acknowledgments and endorsements by the community that the design participation process was helpful and that their input was appropriately assessed and incorporated into project design.

2. Documentation of input and agreement from key stakeholders, community leaders, and/or decision makers regarding the impact assessment and planned action(s) (e.g., community satisfaction surveys, interviews with representatives of affected communities, comments and reactions from social media platforms). Specific statements about critical issues or actions taken within the project are better indicators of a true understanding of the project's impacts than general endorsements of the project as a whole. Evidence of community satisfaction and endorsement of plans includes:

- a. Community endorsement of the project team's assessment of their needs or goals per criterion A.
- b. Community endorsement that the project as proposed will address their needs or goals per criterion B.
- c. Documentation that the community understands and accepts potential impacts of the project per criterion C.
- d. Community endorsement of project strategies to mitigate negative impacts per criterion D.

##### G. Does the project proactively address long-term social, economic, or environmental changes that impact quality of life?

- 1. Documentation of long-term social, economic, or environmental changes/trends that may impact community goals and needs over time (e.g., aging population, economic transitions, or the degradation of the environment and ecosystem services). Note that social, economic, and environmental shifts are often connected. The degradation of the environment in a coastal community dependent on tourism and fishing negatively impacts the economy, which can lead to social impacts such as shrinking population. Consequently, the quality of life of the community is put at risk.
- 2. Documentation demonstrating how the project will proactively address one or more of these changes/trends.
- 3. Documentation demonstrating how the project represents a smart long-term investment for the community's future.

#### RELATED ENVISION CREDITS

- QL1.2 Enhance Public Health & Safety
- QL2.3 Improve Access & Wayfinding
- LD1.3 Provide for Stakeholder Involvement
- LD2.2 Plan for Sustainable Communities
- LD3.1 Stimulate Economic Prosperity & Development
- CR2.5 Maximize Resilience

Credit title and Identification number



QUALITY OF LIFE: WELLBEING

## QL1.2 Enhance Public Health and Safety

20

POINTS

### INTENT

Protect and enhance community health and safety during operation.

### METRIC

Measures taken to increase safety and provide health benefits on the project site, surrounding sites, and the broader community in a just and equitable manner.

Total possible points

Purpose of the credit

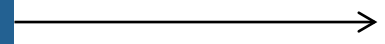
How the credit will be measured

Short title and point value

## LEVELS OF ACHIEVEMENT

IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
A	A + B	A + B + C	A + B + C + D	A + B + C + D + E
(4) Sustainability Indicators	(6) Alternative Analysis	(9) Sustainability Assessment	(12) Sustainable Planning	(16) More Sustainable Communities
<p>(A) Sustainability indicators or outcomes are considered in project selection/identification and planning.</p>				
<p>(B) Sustainable performance is included in alternative analyses during project identification. Alternatives include the sustainability of a “no-build” option.</p>				
<p>(C) During project identification, the project’s potential impact to broader external systems is assessed, such as growth patterns, congestion, energy and water demand/production, and how these impact the overall long-term sustainability of the community or region.</p>				
<p>(D) The project is part of a comprehensive sustainable development plan at the level of the infrastructure system, municipality/community, or region. The project demonstrates a direct connection and contribution to achieving specific sustainable development goals identified in the plan.</p>				
<p>(E) The project addresses an inherently unsustainable condition within the community.</p>				

Refers to Evaluation Criteria and Documentation



# Determining Levels of Achievement

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Improved	Enhanced	Superior	Conserving	Restorative
Above conventional	On the right track	Noteworthy but not net-zero	Zero negative impact	Restores systems



# Up to 5 Levels of Achievement

## LEVELS OF ACHIEVEMENT

IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
A + B	A + B	A + B	A + B	Not Available
<b>(3) 5% Sustainable Procurement</b>	<b>(6) 15% Sustainable Procurement</b>	<b>(9) 25% Sustainable Procurement</b>	<b>(12) 50% Sustainable Procurement</b>	
<p><b>(A)</b> A written sustainable procurement policy/program is in place.</p> <p>The program includes a well-defined process for selecting suppliers and/or manufacturers of materials, supplies, and equipment, including selection criteria focused on environmental practices and social responsibility.</p>				
<b>(B)</b> At least 5% of all project materials, supplies, and equipment meet the sustainable procurement policy/program requirements.	<b>(B)</b> At least 15% of all project materials, supplies, and equipment meet the sustainable procurement policy/program requirements.	<b>(B)</b> At least 25% of all project materials, supplies, and equipment meet the sustainable procurement policy/program requirements.	<b>(B)</b> At least 50% of all project materials, supplies, and equipment meet the sustainable procurement policy/program requirements.	



# Cumulative Levels of Achievement

## LEVELS OF ACHIEVEMENT

IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
A + B	A + B + C	A + B + C + D	A + B + C + D + E	A + B + C + D + E + F
(2) Understanding Impacts	(7) Prioritizing Risk Reduction	(12) Improving Health & Safety	(16) Shared Benefits	(20) Protecting Communities
<p>(A) The project meets all health and/or safety regulations and laws for operation.</p> <p>(B) The project includes health and/or safety improvements beyond minimum requirements established by regulations and laws.</p>				
<p>(C) The project improves health and/or safety for its immediate surroundings.</p>				
<p>(D) The project demonstrates a net positive impact on health and/or safety for the host or affected communities.</p>				
<p>(E) The health and safety benefits and/or negative impacts are equitably distributed within affected communities, and the project team can demonstrate that the project does not disproportionately burden one community over another (i.e., social/environmental justice).</p>				
<p>(F) The project provides critical infrastructure services to communities experiencing, or at risk of experiencing, imminent, negative health and/or personal safety impacts</p>				



# Cumulative Levels of Achievement

## LEVELS OF ACHIEVEMENT

IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
A + B	A + B	A + B	A + B	Not Available
<b>(3) 5% Sustainable Procurement</b>	<b>(6) 15% Sustainable Procurement</b>	<b>(9) 25% Sustainable Procurement</b>	<b>(12) 50% Sustainable Procurement</b>	
<p><b>(A)</b> A written sustainable procurement policy/program is in place.</p> <p>The program includes a well-defined process for selecting suppliers and/or manufacturers of materials, supplies, and equipment, including selection criteria focused on environmental practices and social responsibility.</p>				
<b>(B)</b> At least 5% of all project materials, supplies, and equipment meet the sustainable procurement policy/program requirements.	<b>(B)</b> At least 15% of all project materials, supplies, and equipment meet the sustainable procurement policy/program requirements.	<b>(B)</b> At least 25% of all project materials, supplies, and equipment meet the sustainable procurement policy/program requirements.	<b>(B)</b> At least 50% of all project materials, supplies, and equipment meet the sustainable procurement policy/program requirements.	

RA1.1 Support Sustainable Procurement Practices  
Page 94

# Non-cumulative Levels of Achievement

## LEVELS OF ACHIEVEMENT

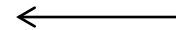
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
Not Available	A + B + C	A + B + C	(A + B) or D	A + B + E
	<b>(2) Less than 10% Disturbance</b>	<b>(8) Less than 5% Disturbance</b>	<b>(12) 100% Avoidance</b>	<b>(16) Restore Productive Farmland</b>
	<b>(A)</b> The project team identifies soils designated as prime farmland, unique farmland, or farmland of importance.			
	<b>(B)</b> Less than 10% of the project site is developed or disturbed prime farmland.	<b>(B)</b> Less than 5% of the project site is developed or disturbed prime farmland.	<b>(B)</b> The project avoids developing or disturbing any prime farmland located on site.	
	<b>(C)</b> Farmland permanently damaged or disturbed as a result of the project is mitigated through offsets. Any farmland temporarily disturbed as a result of construction impacts is restored to a level that does not decrease the capacity of the preserved land.		OR <b>(D)</b> The project team can demonstrate the site was intentionally chosen to avoid areas of prime farmland.	<b>(E)</b> In addition to 100% avoidance, the project includes protecting farmlands for posterity against future disturbance, or restoring previously developed areas to a contiguous, functional, and productive farmland state.

## DESCRIPTION

This credit addresses the embodied carbon of materials used over the life of the project. This combines concepts of sourcing local materials, using materials more efficiently, and using lower-impact materials in order to reduce the combined environmental impacts of material use. In the calculations, carbon is used as a proxy unit of measure to compare various impacts across the entire supply chain of material consumption. One stage of this supply chain involves raw material extraction/harvesting, refinement, and manufacturing into products. The second involves transportation of the materials from the manufacturer to their final destination on site. By designing projects to use less material, use material efficiently, or specifying materials with lower embodied carbon, as well as reducing transportation distances, project teams can reduce the overall impact of the project.

Material use is specifically addressed over the life of the project, including the necessary replacement or renewal of materials. Often, materials with slightly higher initial embodied carbon will have a lower net embodied carbon over the life of the project if they are more durable and less likely to require repair or replacement.

- More details on the purpose and objectives
- Additional information on why the credit is important
- Other information that will assist the applicant rate the credit



## PERFORMANCE IMPROVEMENT

**Improved:** Project-specific commitments are in place.

**Enhanced:** A project sustainability management policy is in place that defines the scope of the project and the project team's commitment to sustainable performance improvement. The policy commits the project team to meeting or exceeding all health and safety standards and improving environmental, social and ethical performance. This policy can be a pre-established policy created by the project owner, agreed to by the project team, and customized for the project to the extent required.

**Superior:** Commitments go beyond initial or singular statements and are revisited, with progress reviewed, throughout project development.

**Conserving:** Sustainability commitments are supported by a documented history of achievement in sustainable performance. Sustainability is a core value of the organizations involved.

**Applicability:** It is likely that all projects can benefit from effective leadership and strong commitments to sustainability. It would therefore be difficult to demonstrate that the credit is not relevant or applicable to a project seeking an Envision award.

How to advance  
to higher levels  
of achievement



Applicability



# Criteria Guidance

## LEVELS OF ACHIEVEMENT

IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
A	A + B	A + B + C	A + B + C + D	Not Available
(2) Early Collaboration	(5) Achieving Goals	(12) Ongoing Collaboration	(18) Life-Cycle Collaboration	
(A) Sustainability goals are defined early during interdisciplinary collaborative project kickoff meetings among project staff at all levels.				
(B) The project team can demonstrate sustainability performance enhancements that resulted from the interdisciplinary collaborative process. Performance enhancements should result from a whole-systems design approach, rather than sustainability add-ons.				

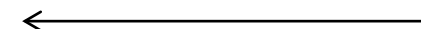
## EVALUATION CRITERIA AND DOCUMENTATION GUIDANCE

### A. Was an interdisciplinary collaborative kickoff meeting held early in the project to define sustainability goals?

1. Identification of the various disciplines or project team roles involved in the interdisciplinary collaborative process.
2. Documentation of design charrettes, value engineering sessions, or other meetings to identify opportunities for improving sustainable performance and reducing design conflicts. Documentation should clearly demonstrate that meetings were held early in the process.

Criteria to be addressed

Guidance on what the reviewers will be looking for in order to determine whether the criteria has been met





# Criteria Guidance: Calculations

## EVALUATION CRITERIA AND DOCUMENTATION GUIDANCE

A. To what extent has the project team used recycled materials, including materials with recycled content and/or reused existing structures or materials?

1. *Total quantity of materials used on the project by weight, volume, or cost.*
2. *Inventory of specifications for materials containing recycled content. Inventory should include the name of the product, the name of the manufacturer, the weight, volume, or cost of the material, and the percentage of recycled content (either post-industrial or post-consumer recycled content).*
3. *Calculations of percentage of reused or recycled materials by weight, volume, or cost.*

*To calculate materials with recycled content, multiply the material weight, volume, or cost by the percentage of recycled content.*

*Mechanical, electrical, water equipment, and their components may be excluded from the calculations. In these instances, the most efficient equipment should be specified.*

Criteria to be addressed

Numbered items may provide important calculation tips.



## RELATED ENVISION CREDITS

QL1.1 Improve Community Quality of Life

QL2.3 Improve Access and Wayfinding

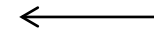
LD1.3 Provide for Stakeholder Involvement

LD3.1 Stimulate Economic Prosperity and Development

NW2.2 Manage Stormwater

NW3.2 Enhance Wetland and Surface Water Functions

- Other credits with related issues or information.
- Documentation needs may be related.



QL3.4 Enhance Public Space and Amenities  
Page 56

# Consistent Boundary

- Clearly defined boundary
- Consistent across all credit evaluations



# Credit Applicability

---

**Not applicable:** the credit addressed does not exist for the project

Reasons that **don't** support “not applicable” designation:

- The **contract scope** does not include the issue
- Deemed to be too **expensive**, difficult, or time-consuming
- **Local regulations** prohibit meeting the requirements
- Team does not have decision-making **authority**
- Stakeholders have indicated that the issue is **not a priority**

Points **REMOVED** from denominator



# Performance Baselines

---

## Appropriate baselines:

1. The existing systems the project will replace
2. A proposed project alternative
3. Industry “standard practice”
4. A similar project

Example:

### **RA2.1 Reduce Operational Energy Consumption**

#### **B. To what extent has the project reduced operational energy consumption?**

- 1. Calculation of the baseline energy consumption. All energy sources should be converted into standard units.*
- 2. Submit calculations for the project’s estimated annual energy consumption over the life of the project. Document the percentage reduction over the baseline. All energy sources should be converted into standard units.*



# Levels of Achievement

- Select a level of achievement
- Points are determined by achieving a level in its entirety (no in-between)

## LEVELS OF ACHIEVEMENT

IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
A + B	A + B + C	A + B + C + D	A + B + C + D + E	A + B + C + D + E + F
(2) Understanding Impacts	(7) Prioritizing Risk Reduction	(12) Improving Health & Safety	(16) Shared Benefits	(20) Protecting Communities



# Evaluation Criteria

---

**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?





# 5 Innovation Credits

---

1. Innovation & Transferability
2. Exceptional performance
3. Additional aspects of sustainability

Points **ADDED** as bonus



# Project Score

---

- Score is percentage of points achieved divided by applicable points
- Percentage represents achievement beyond convention

$$\text{Project score (\%)} = \frac{\text{Points achieved} + \text{Innovation points}}{\text{Total points} - \text{Not Applicable Credits}}$$



# Grand Bend Area Wastewater Treatment Facility

Grand Bend, ON

Envision Platinum 2015



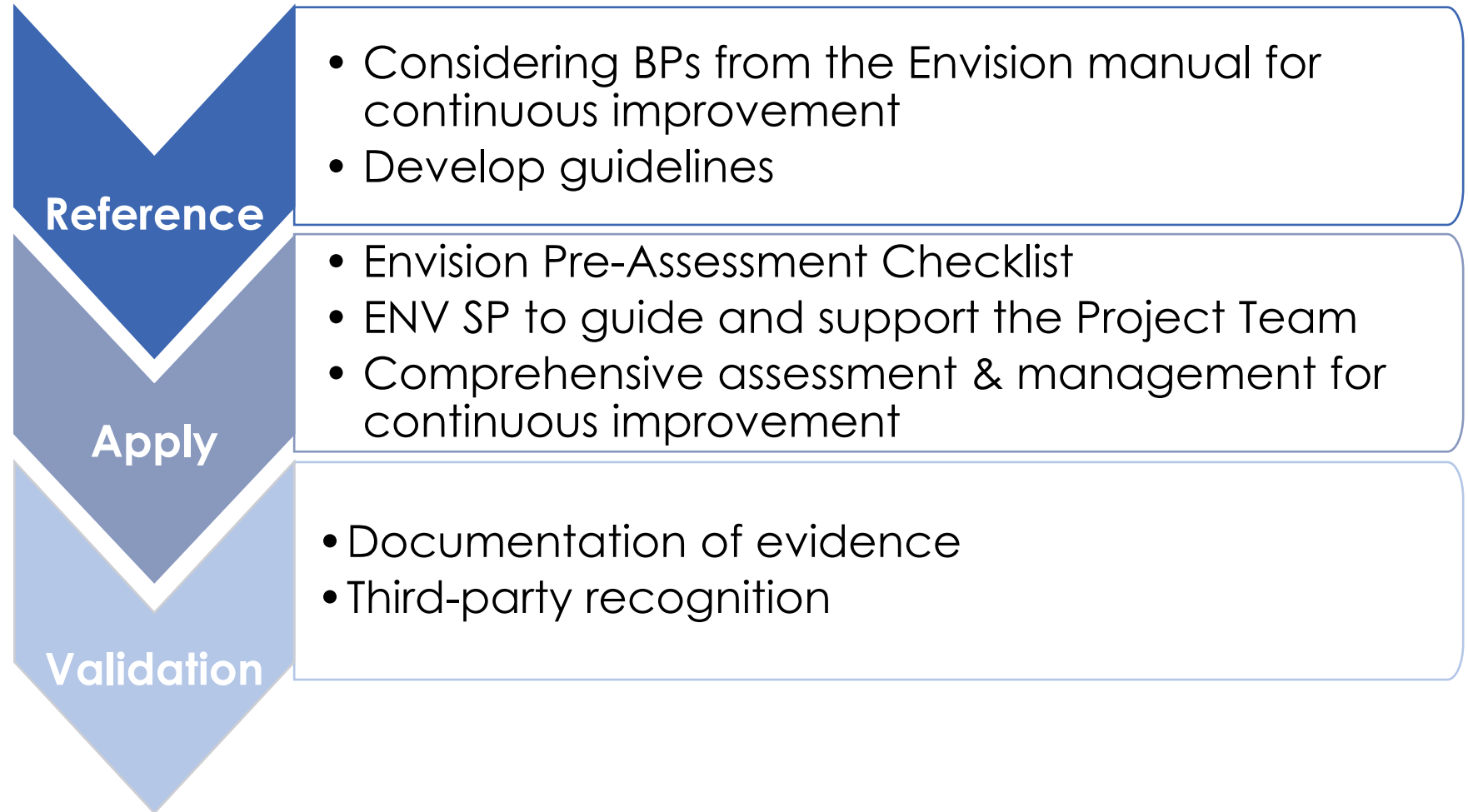
# Table Discussion (10 min)

---

1. Assign each of the Envision categories
2. Identify as many credits as you can where you think sustainability performance was demonstrated
3. Report back

# 4 Uptake – Water Sector Opportunity

# Application Scalability





## Climate Lens

**All federally funded infrastructure must conduct a climate change resilience assessment.** Approved methodologies include **Envision**.

## FCM Green Municipal Fund

Applicants applying to GMF can now include the ISI Envision verification fees as a reimbursable expense.

## Public Service Procurement Canada

Trained 25+ staff and actively using it on capital delivery projects.

# Current ENV SPs

## COUNTRIES WITH 10+ ENV SPs

Country	ENV SPs
United States	7374
Canada	884
Italy	599
China	258
Saudi Arabia	154
Spain	73
U.A.E.	45
India	43
Columbia	33
United Kingdom	26
Pakistan	20
Egypt	12



**TOTAL = 9,698**

As of Sep. 30, 2024

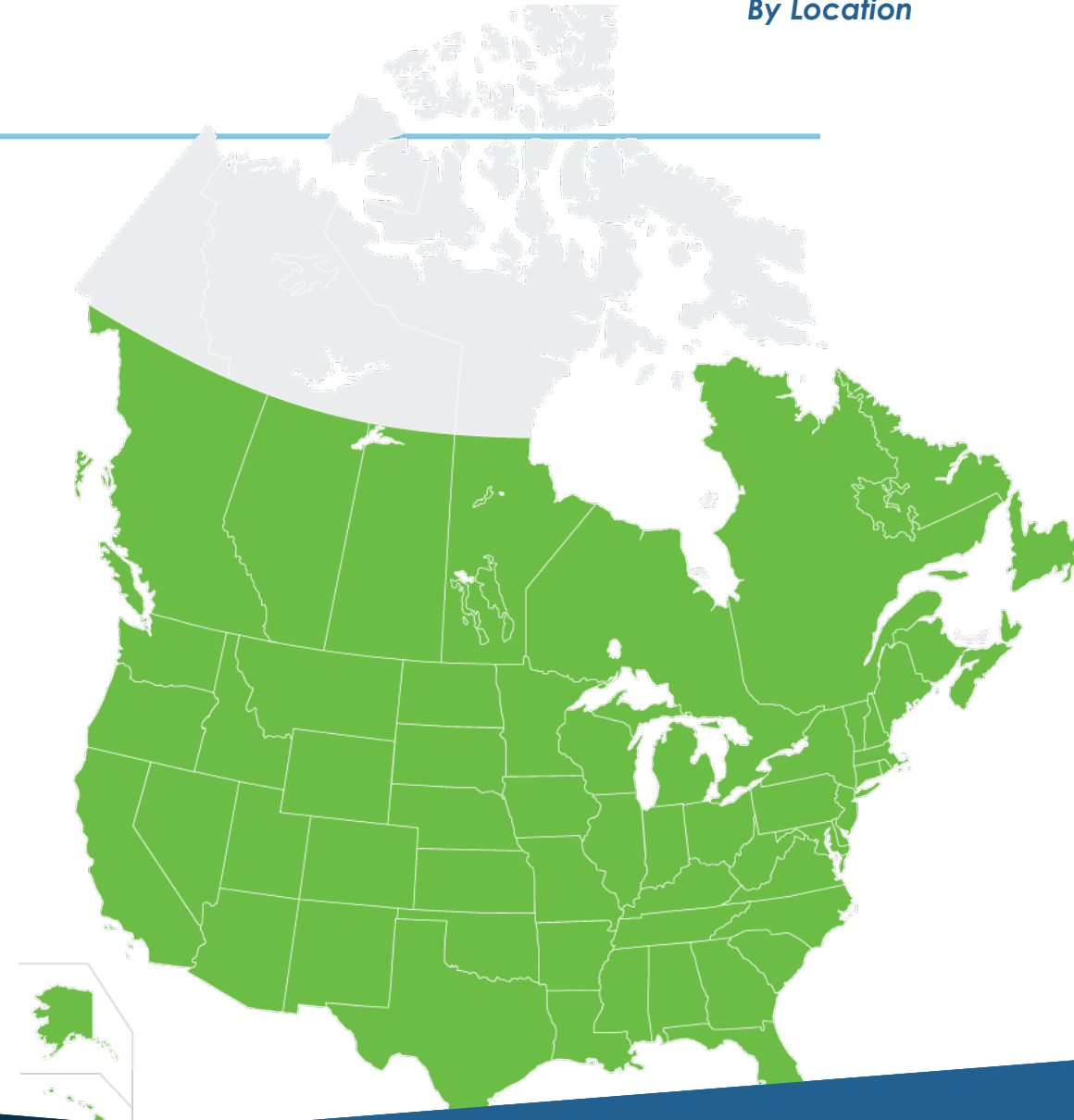
Visit our website for the complete  
searchable ENV SP Directory



# Current ENV SPs

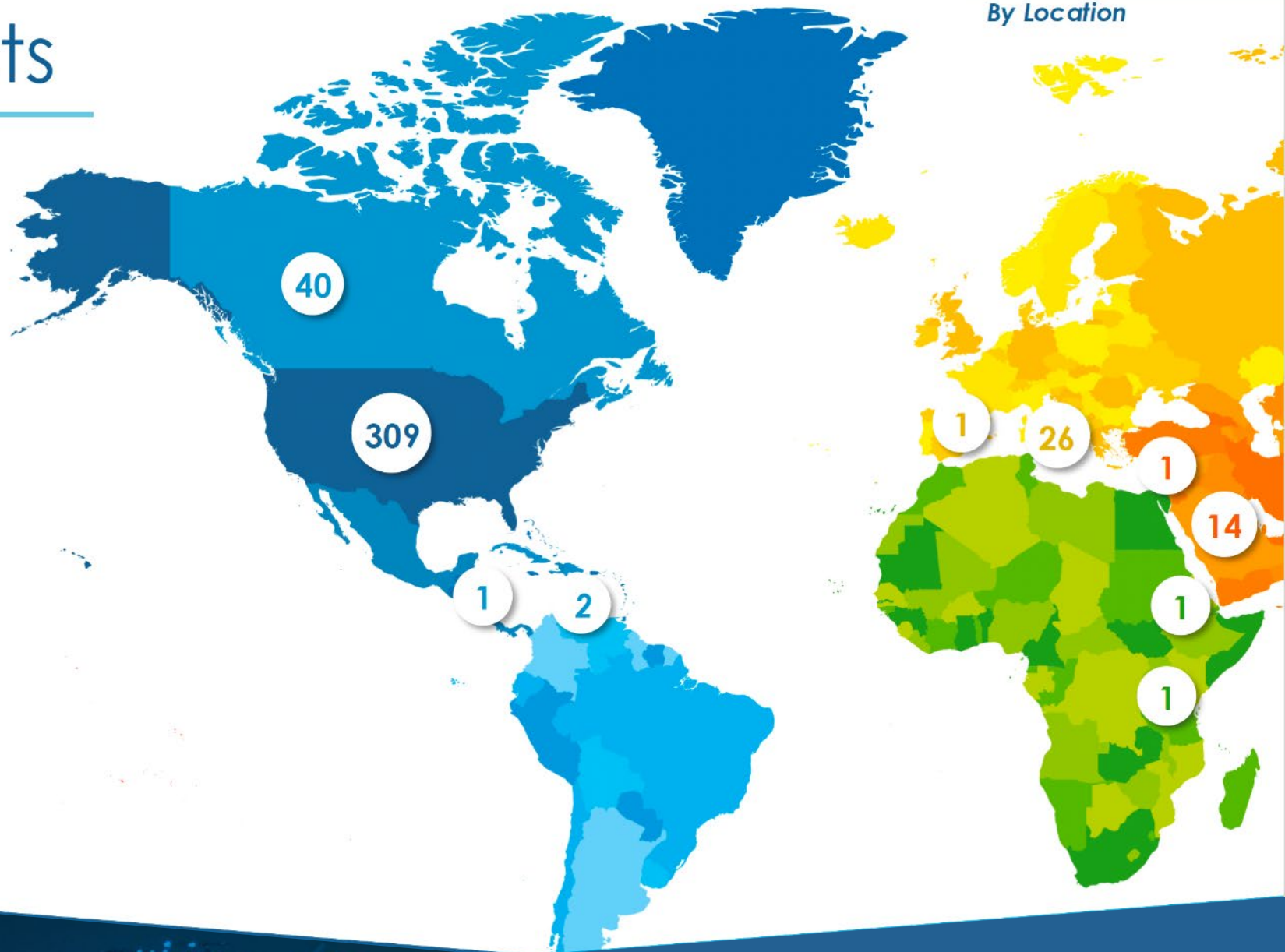
## JURISDICTIONS WITH >50 ENV SPs

State or Province	ENV SPs	State or Province	ENV SPs
California	905	<b>Ontario</b>	<b>114</b>
New York	487	<b>British Columbia</b>	<b>102</b>
Texas	448	Wisconsin	92
Florida	332	<b>Quebec</b>	<b>86</b>
Virginia	204	Illinois	72
New Jersey	190	Maryland	67
Missouri	156	North Carolina	64
Washington	142	Kansas	64
Pennsylvania	137	Arizona	62
Massachusetts	135	Ohio	54
Colorado	123	<b>Alberta</b>	<b>51</b>



# Envision Projects

**TOTAL = 396**  
Cumulative Value = **USD \$283 billion**  
*As of Sep. 30, 2024*



Registered, under review & complete

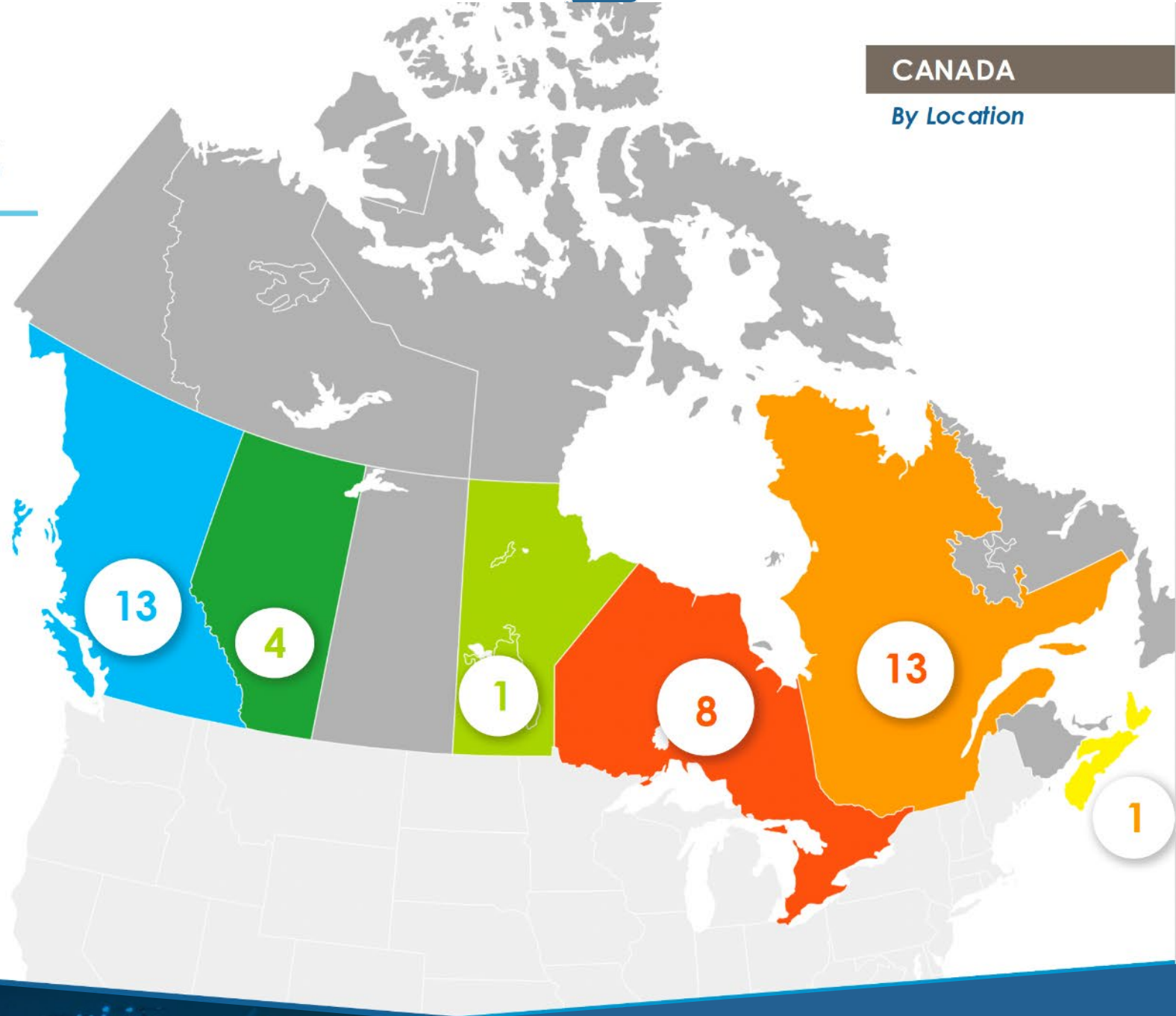
# Envision Projects

**TOTAL = 40**

Cumulative Value = **CAD \$22 billion**

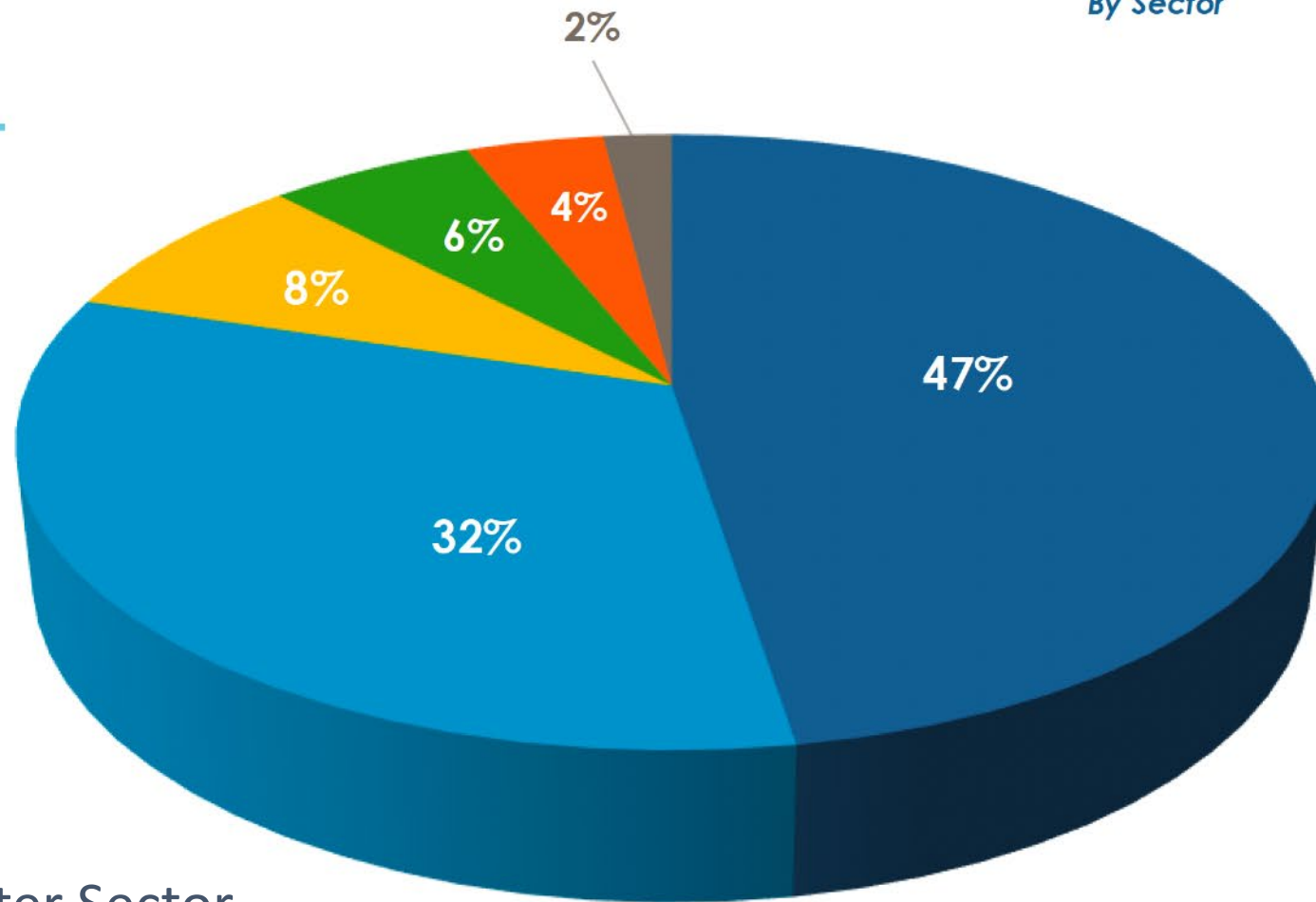
*As of Sep. 30, 2024*

Registered, under review & complete



# Envision Projects

**TOTAL = 396**  
Cumulative Value = **USD \$283 billion**  
As of Sep. 30, 2024



- Transportation
- Water
- Energy
- Land / Environment
- Other
- Waste

Water Sector  
only 10% in Canada

Registered, under review & complete



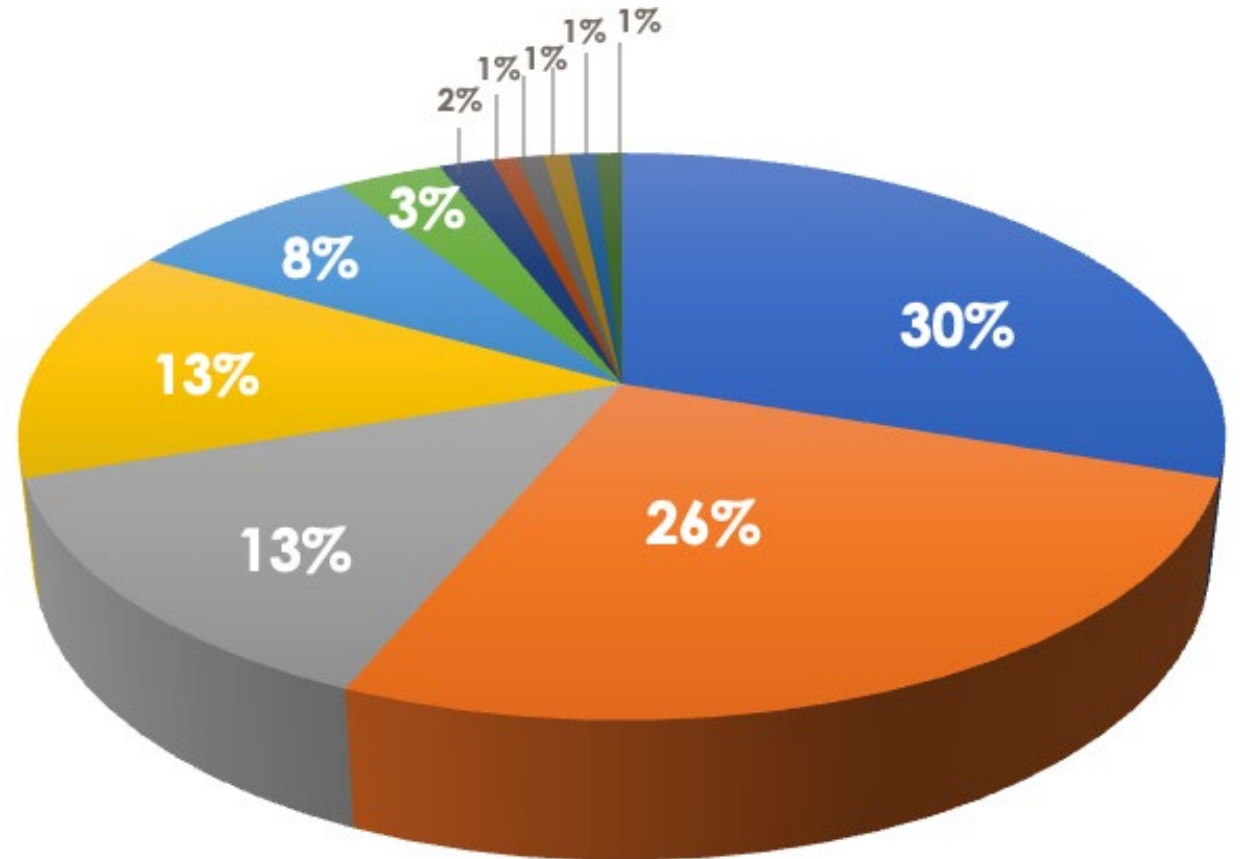
# Envision Water Projects

- Wastewater Treatment
- Stormwater
- Water Treatment
- Wastewater Collection
- Water Distribution
- Dam/Levee
- Park
- Bridge
- Energy Distribution
- Reservoir
- Environmental Restoration
- Other

**TOTAL = 119**

Cumulative Value = **USD \$33 billion**

*As of March 31, 2024*



Registered, under review & complete.

## THE WATER SECTOR IS A STRONG COMMUNITY OF ENVISION USERS

ISI members  
include over

**55**

**Water-related public agencies** at the municipal, county, and state level

**Water and wastewater**  
accounts for

**40%**

of the total projects  
in **ISI's verification program**

**\$33  
BILLION**

**in projects**  
(verified, in review  
& registered)

*\*as of March 31, 2024*



# Some Water Organizations Using Envision

---

Ontario Clean Water Agency  
California Department of Water Resources  
Western Virginia Water Authority  
District of Columbia Water and Sewer Authority  
King County Wastewater Treatment Division  
The Philadelphia Water Department  
Tarrant Regional Water District  
New York City Department of Environmental Protection  
Loudon Water  
Madison Metropolitan Sewerage District  
East Bay Municipal Utilities District

Gainesville Regional Utilities, Inc.  
City of Atlanta - Department of Watershed Management  
Milwaukee Metropolitan Sewerage District  
Los Angeles Department of Water and Power  
Greater New Haven Water Pollution Control Authority  
Hampton Roads Sanitation District  
Metropolitan Water District of Southern California  
Passaic Valley Sewerage Commission  
Gwinnett County Department of Water Resources  
Puerto Rico Aqueduct and Sewer Authority  
Metro Vancouver



# Water

**In every corner of the water sector,** Envision can be used to support sustainability and resilience goals.

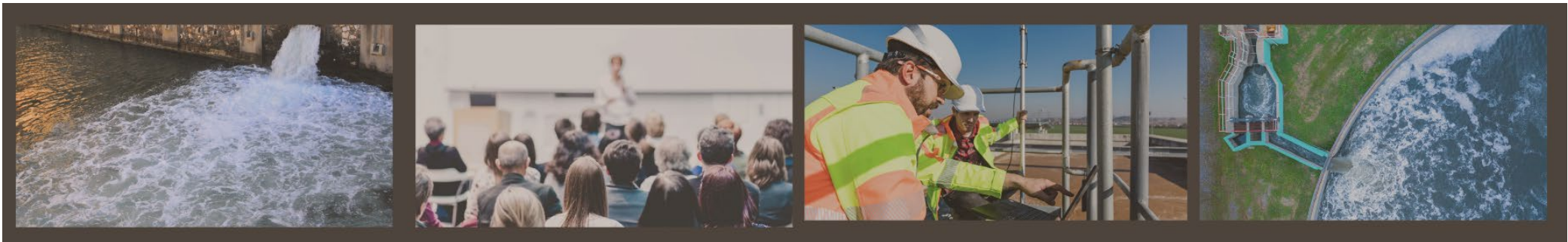
- Water / wastewater treatment
- Potable water distribution
- Capture/storage
- Stormwater management
- Flood control
- Nutrient management





# Envision Helps Address Water Sector Issues

- ✓ Aging Infrastructure
- ✓ Climate Change/Resiliency
- ✓ Community Expectations
- ✓ Water Availability/Access to Water
- ✓ Emergency Preparedness
- ✓ Water Reuse
- ✓ Increasing Regulations
- ✓ Water/Energy Nexus
- ✓ Social Justice & Equity



# Envision Application Examples

---

- **NYC Department of Environmental Protection**

- Water Sector RFP: “The Design Engineer shall prepare the application and supporting documents to obtain an Envision rating, level ‘gold’ from the Institute for Sustainable Infrastructure.”

- **Hampton Roads Sanitation District, Virginia Beach, VA**

- Design & Construction Standards: Firms “shall utilize the Institute for Sustainable Infrastructure Envision (ISI) Envision checklist when evaluating and designing projects.”

- **California Department of Water Resources**

- Strategic Plan Goals & Actions specific to Envision: Example language from Objective 3 - Implement Sustainability Best Practices: “By 2026, conduct a complete Envision evaluation of all new infrastructure projects that require an Environmental Impact Report.”

- **Metro Vancouver**

- Sustainable Infrastructure Policy: Requiring all eligible infrastructure to use Envision to guide the design and construction of sustainable, high-performance infrastructure that demonstrate a Gold performance level.





# Water Treatment Plant Residuals Management Facility

Red Deer, AB

Envision Bronze 2021





# Holland Area WRF Anaerobic Digester

Holland, Michigan

Envision Gold 2023





# Cocoplum 1 Pump Station Project

Coral Gables, Florida

Envision Verified 2022





# Southport Levee Improvement Project

West Sacramento, California

Envision Platinum 2020





# Hope Mills Dam

Hope Mills, North Carolina

Envision Verified 2019



ENVISION  
CANADA





# Terminal Island Advanced Water Purification Facility Expansion Project

Los Angeles

Envision Platinum

Google





Advanced Oxidation Process (AOP) Area



Community Boundary

### Scope:

- A design/build
- Expansion and construction of an advanced water purification facility at Terminal Island Water Reclamation Plant.

### Objectives:

- To provide safe recycled water purified for potable reuse for the surrounding area.
- Achieve full advanced treatment to offset 12MGD of imported potable water (100% of flow)

### Catalyst for Change:

- Catalyst for organizational review embedding changes

# Table Discussion (20min)

---

1. In pairs, pick and discuss one question
2. Pick another if you have time
3. Report back



# 5 Benefits & Closing





I am just building a “regular” Water /  
Wastewater Treatment Plant –  
should I still use Envision?

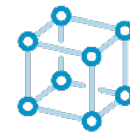




# Benefits of Envision for your Organization



Provides a free “off-the-shelf” framework that fosters **common understanding of sustainability** indicators and performance



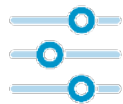
Enables **streamlined procurement process**



Serves as a **single tool** for all infrastructure projects



Offers opportunity for **education and training programs** for staff and teams

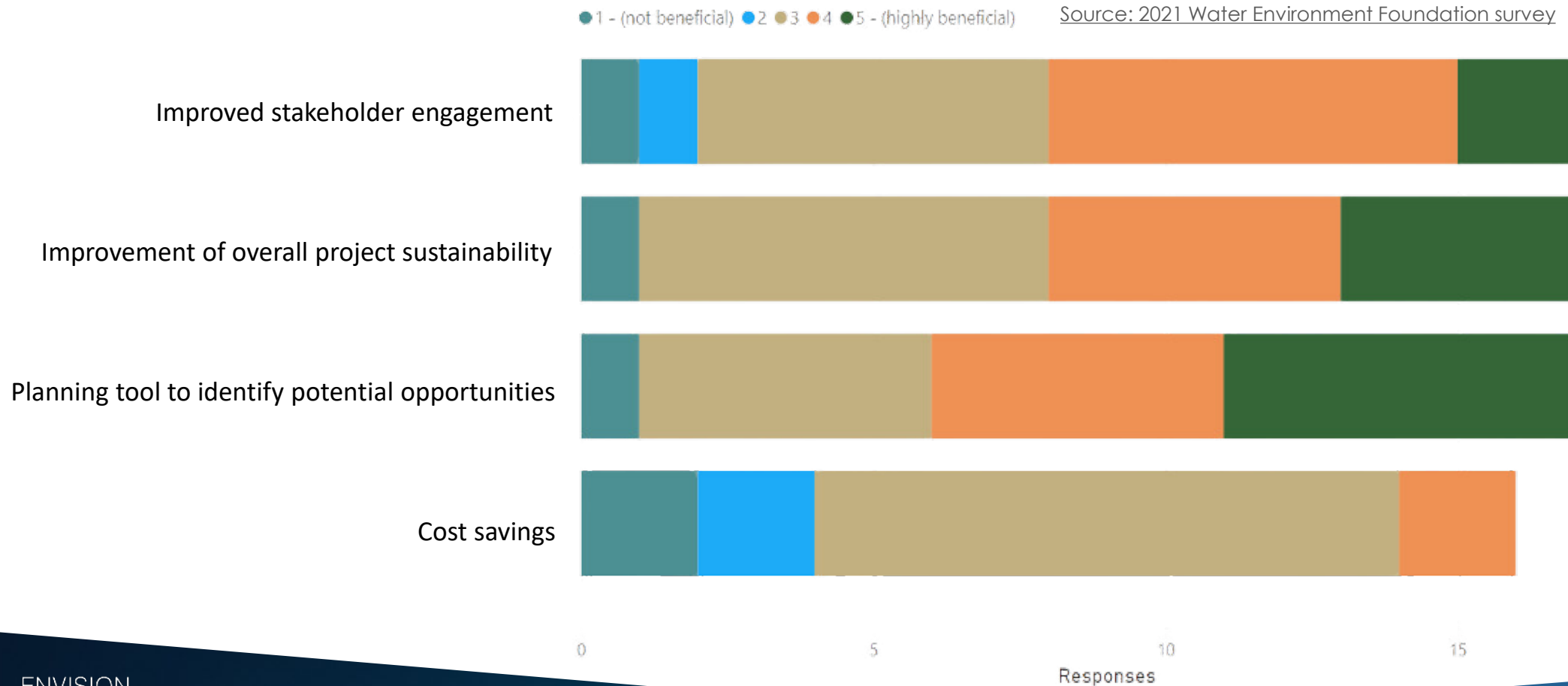


Allows for **flexibility and customization** for unique organizations and projects



Supports sustainability **benchmarking and growth**

# Envision Implementation Benefit Survey





# TESTIMONIALS

*“Envision goes beyond the basic efforts of project management and development into areas that benefit the community in a holistic way.”*

- Dave Koster, General Manager, **Holland Board of Public Works**

*“Using the Envision certification process has helped the City become a better fiscal, social, and environmental steward,”*

- Max Kirschbaum, Public Works and Utilities Director, **City of Westminster**

*“Envision is very holistic. We found, for example, that no other rating system captured and gave credit for work that we do with the community and stakeholders, or the benefits of that work.”*

- Heidi Sowell, Sustainability Project Lead, **King County Wastewater Treatment Division**



# TESTIMONIALS

*“The Envision framework can truly transform the outcomes of all infrastructure projects, and when used at the strategic planning level within an infrastructure organization, it can provide a roadmap to transform an organization’s ESG aspirations from being visionary, to being truly embedded in the organization’s day to day business.”*

- Justin Waples, Associate Engineer, **Central Contra Costa Sanitary District**

*“The interest in the use of a third party rating system was to show the Holland Board of Public Works stakeholders that we were doing the right thing for the environment, to document sustainable solutions and to align our sustainability goals from our strategic plan as well as other guidelines and standards.”*

- Manager, **Holland Board of Public Works**

# Benefits of Envision for You

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Be a **Sustainability Leader**



Develop **new opportunities** to grow your knowledge, skills, and expertise



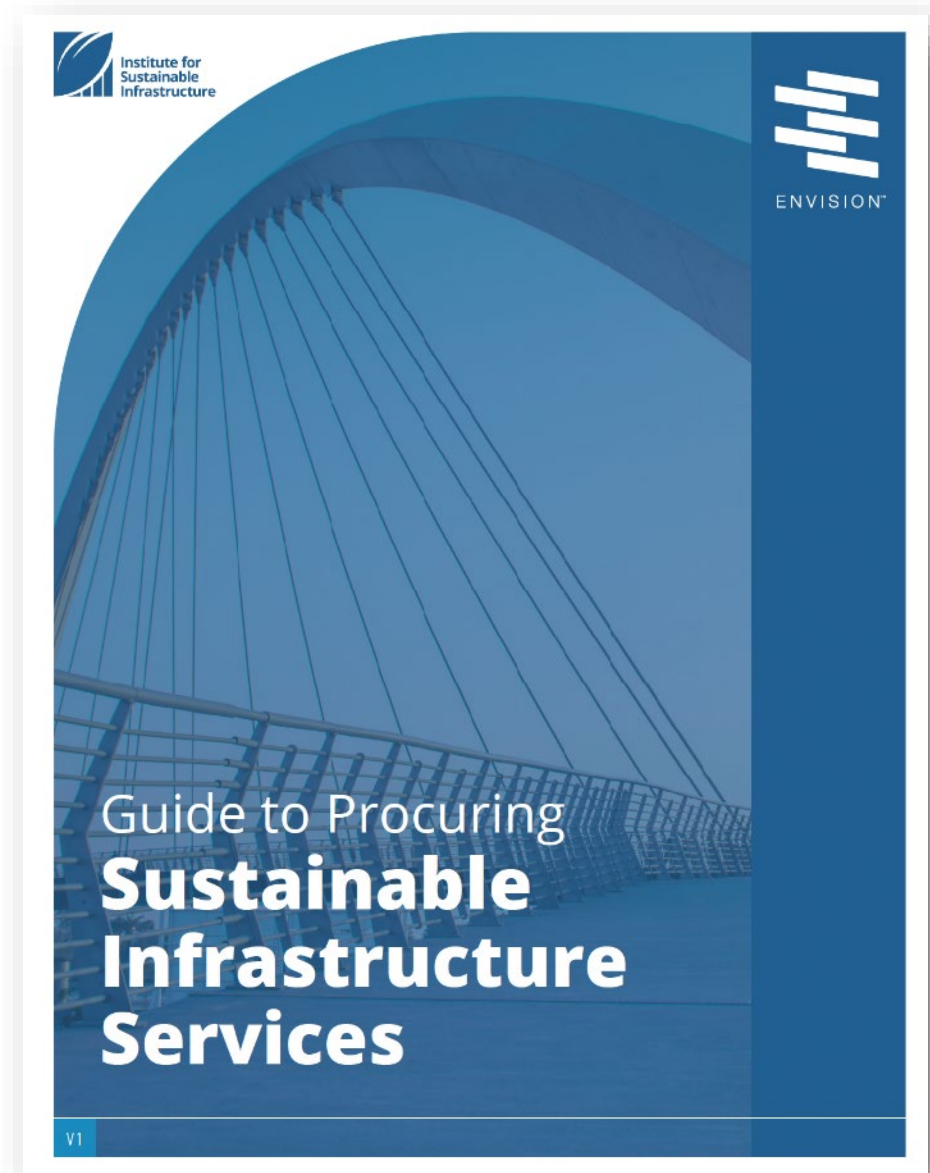
Serve as an example of **your organization's mission and culture** (*internally*)



Demonstrate your organization's **sustainability commitment** (*externally*)

# Procuring Envision Services

---





# 10% Discount till Jan 31st



~5hours to complete modules  
~2hour for exam



Envision  
Credentialing  
Exam



REGISTER ATTENDANCE  
<https://tinyurl.com/cwwa-envision>

## Regular self-paced online training access rates

Private Non-Member	Private ISI Member	Government Employee	Full-Time Faculty	Full-Time Student
\$1,062.50	\$875	\$312.50	\$187.50	\$187.50





## Knowledge Check

What is an example of a project that would be most appropriate to apply the Envision framework?

- A. Water treatment facility
- B. Library
- C. Commercial office
- D. Elementary school



## Knowledge Check: Answer

What is an example of a project that would be most appropriate to apply the Envision framework?

A. Water treatment facility

B. Library

C. Commercial office

D. Elementary school



## Knowledge Check

Which of the following is NOT an Envision category?

- A. Climate and Resilience
- B. Natural World
- C. Leadership
- D. Siting

What are the remaining Envision categories not listed above?





## Knowledge Check: Answer

Which of the following is NOT  
an Envision category?

- A. Climate and Resilience
- B. Natural World
- C. Leadership
- D. Siting

What are the remaining  
Envision categories not listed  
above?

# Thank You!

Lourette Swanepoel  
Envision Canada Program Manager  
lourette@csce.ca

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