Envision...

leading the evolution of sustainable infrastructure

Justin Waples, PE, ENV SP, PMP
jwaples@centralsan.org
925 229 7368

Institute for Sustainable Infrastructure

Presentation Overview

1. What is Envision
2. Example Projects
3. Sustainability & Resiliency
4. Envision Framework
5. Why use Envision

Institute for Sustainable Infrastructure

ENVISION™

Envision is a Joint Collaboration

ISI Founding Organizations

Envision: Infrastructure Applications

ENERGY

Geothermal

Hydroelectric

Nuclear

Coal

Natural Gas

Oil/Refinery

Wind

Solar

Biomass

WATER

Water Resource Recovery Facilities

Storm Water Management

Flood Control

Water Reuse

Potable Water Distribution

WASTE

Solid waste

Recycling

Hazardous Waste

Collection & Transfer

TRANSPORT

Airports

Roads

Highways

Bikes

Pedestrians

Railways

Public Transit

Ports
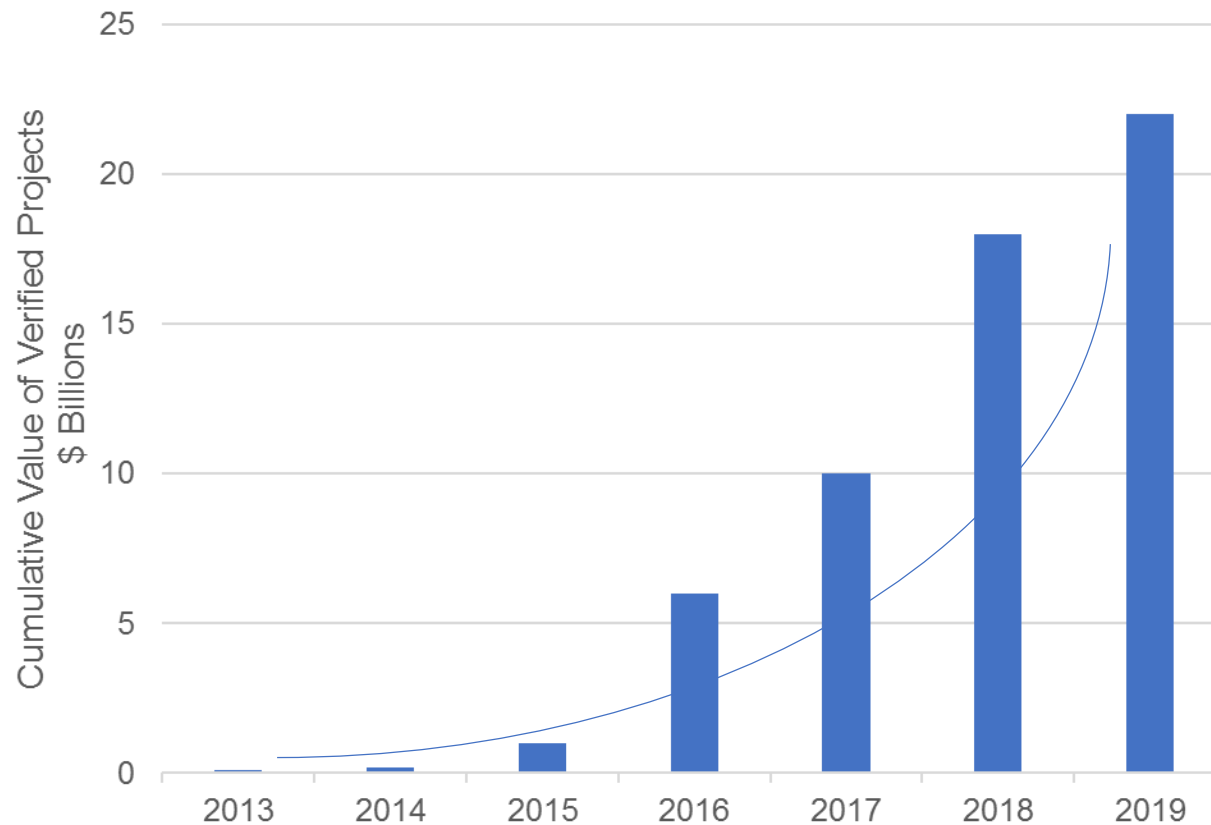
Waterways

LANDSCAPE

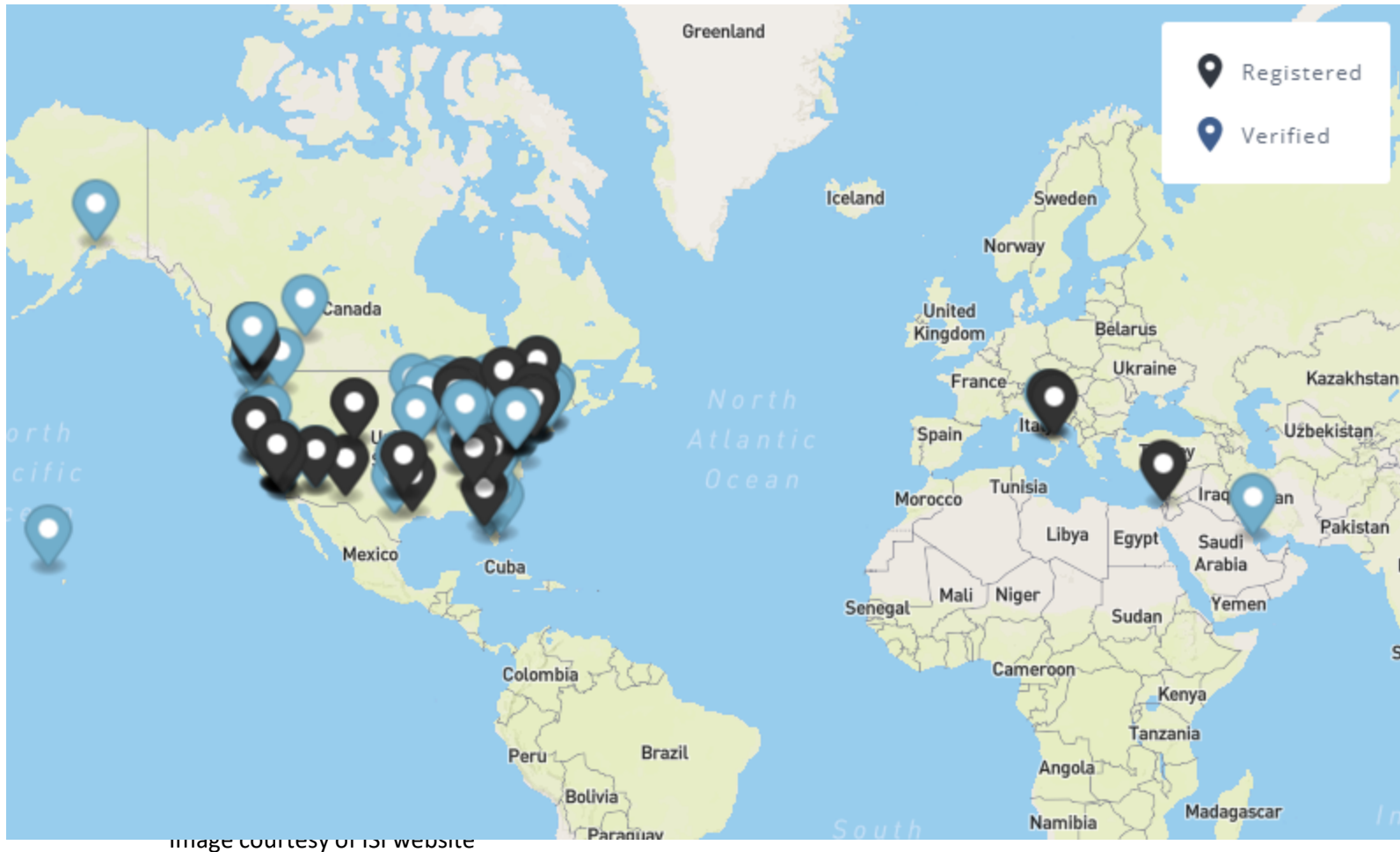Public Realm

Parks

Ecosystem Services

Natural Infrastructure

INFORMATION

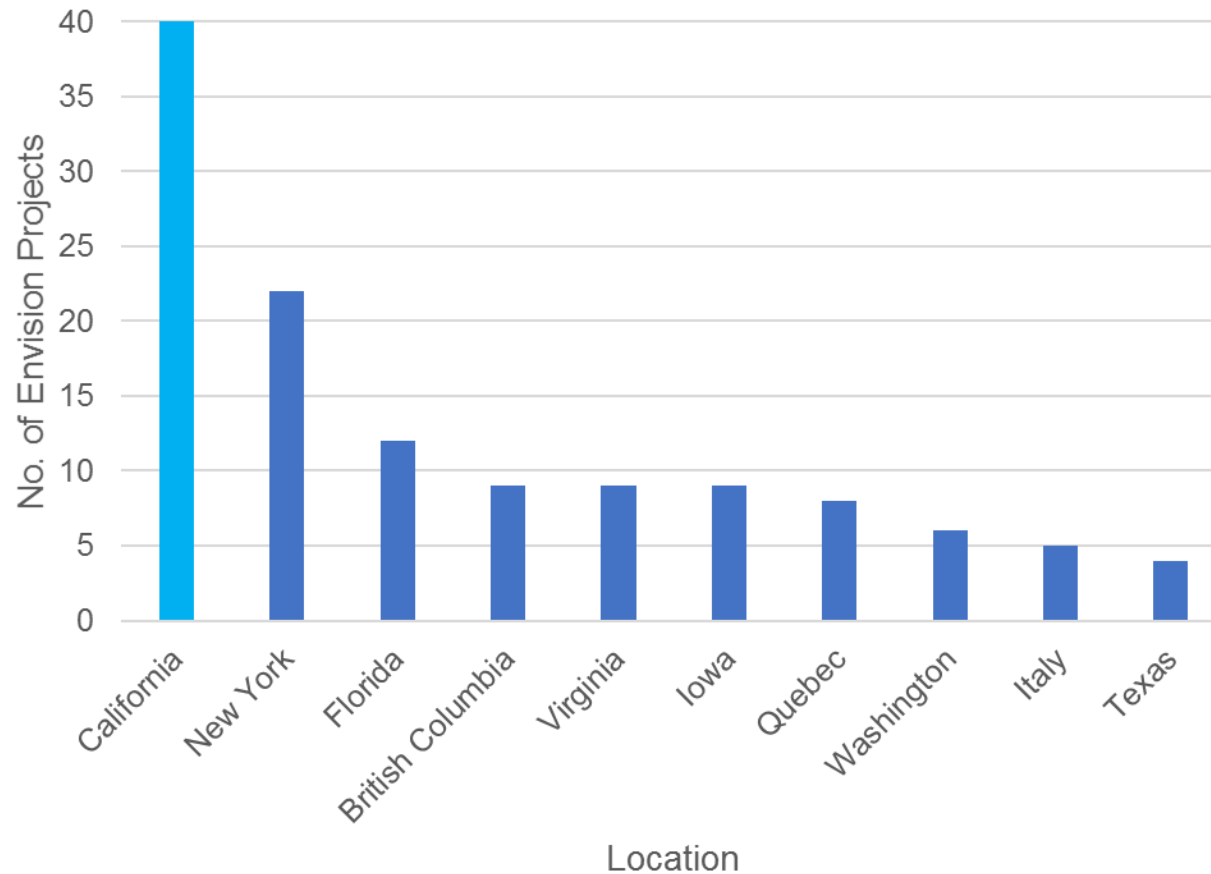Telecommunications

Internet

Phones

Data Centers

Sensors

Cumulative Value of Envision Verified Projects

Envision Project Locations

Image courtesy of ISI website

Projects Presently in Verification (Top 10 Only)

Envision Projects By Sector

Water Sector

Transport Sector

Legend: ■ Water ■ Other ■ Energy ■ Food ■ Industrial ■ Land/Environment ■ Transportation ■ Waste

Institute for Sustainable Infrastructure
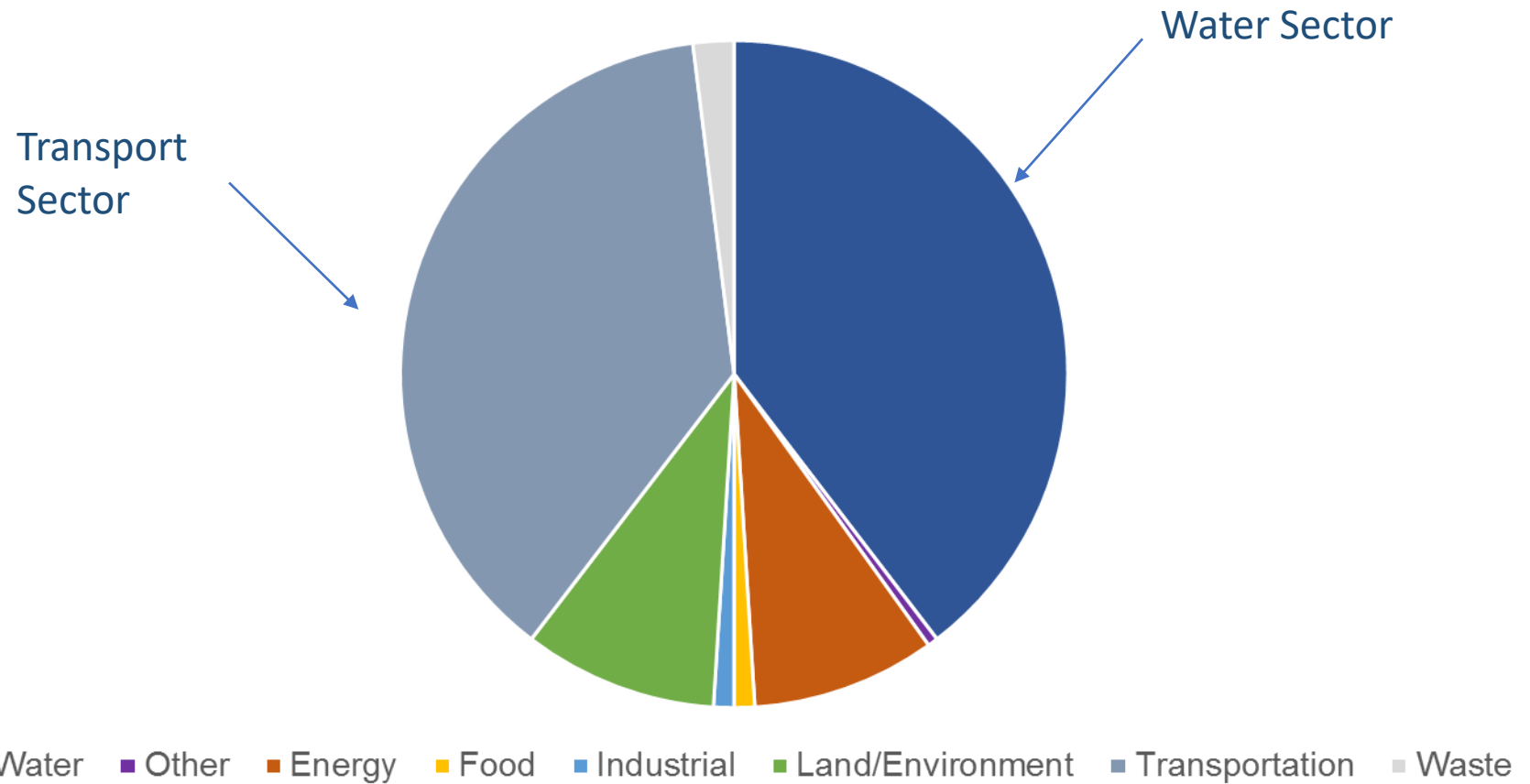
Nutrient Management Facility

Treatment plant

Virginia, USA

Envision Platinum, 2016

San Diego International Airport

Green Build Project

California, USA

Envision Platinum 2016

Institute for Sustainable Infrastructure

Kunia County Farms

Aquaponics Farm

Hawaii, USA

Envision Gold, 2016

Integrated Pipeline Project

Tarrant Regional Water District

Texas, USA

Envision Platinum 2016

Institute for
Sustainable
Infrastructure

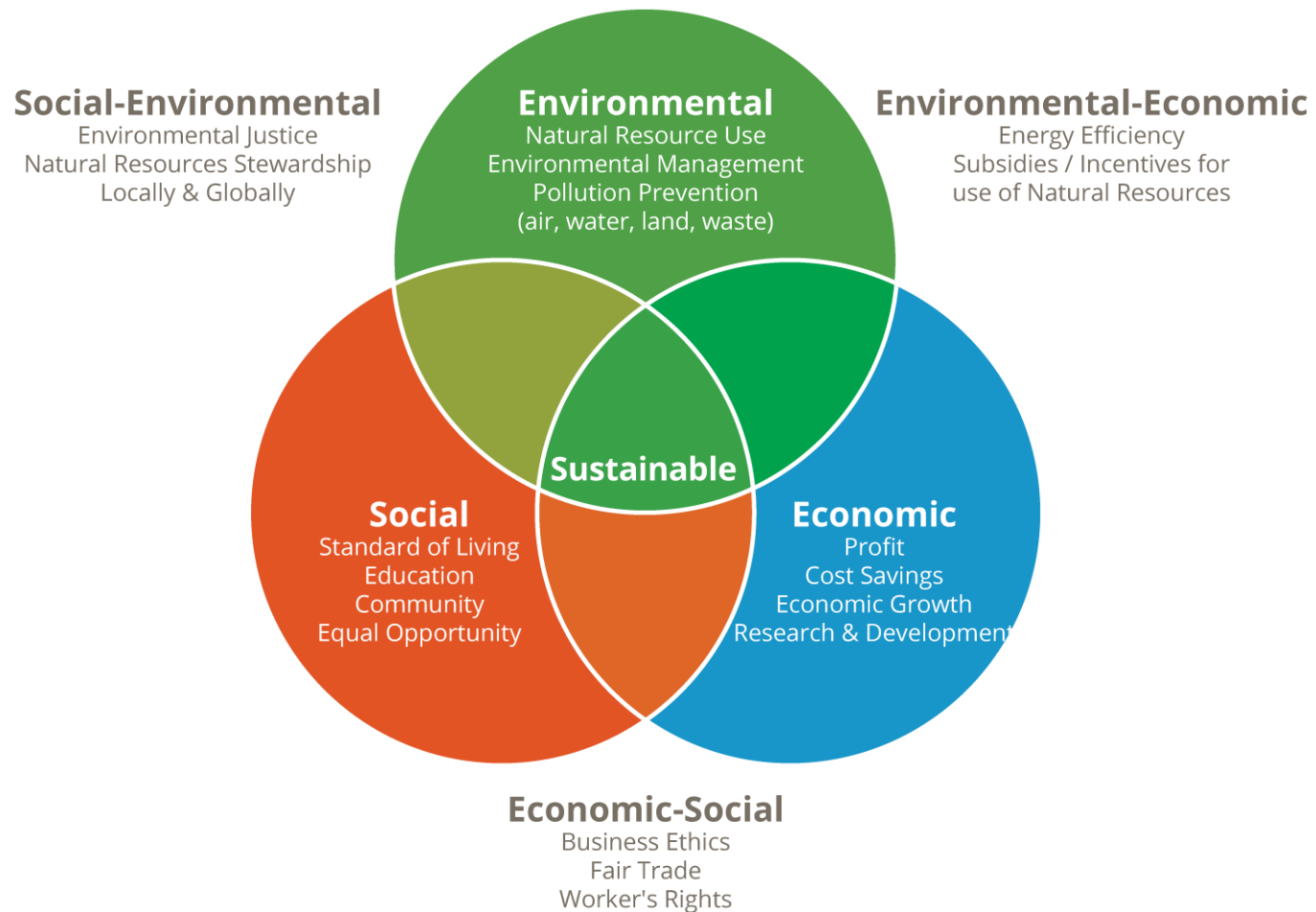" *Sustainable development* is...

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

-Brundtland Commission Report 1987

United Nations. 1987."Report of the World Commission on Environment and Development." General Assembly Resolution 42/187, 11 December 1987
http://www.un.org/documents/ga/res/42/ares42-187.htm

United Nations Office for Disaster Risk Reduction, UNISDR Terminology and Disaster Risk Reduction, (Geneva, 2009)
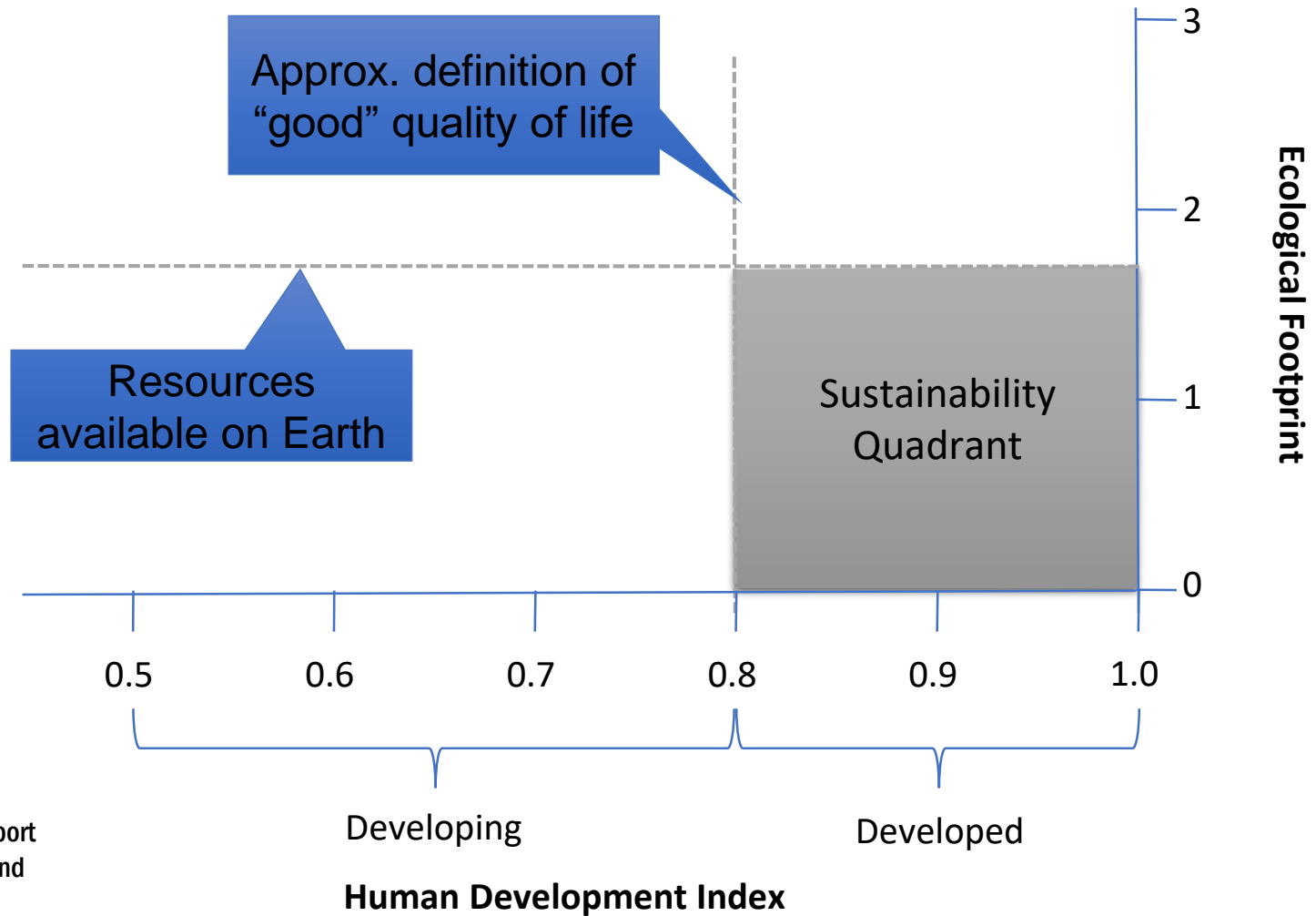
"Resilience is...

...the ability of a system, community or society exposed to hazards, to resist, absorb, accommodate and to recover...in a timely and efficient manner..."
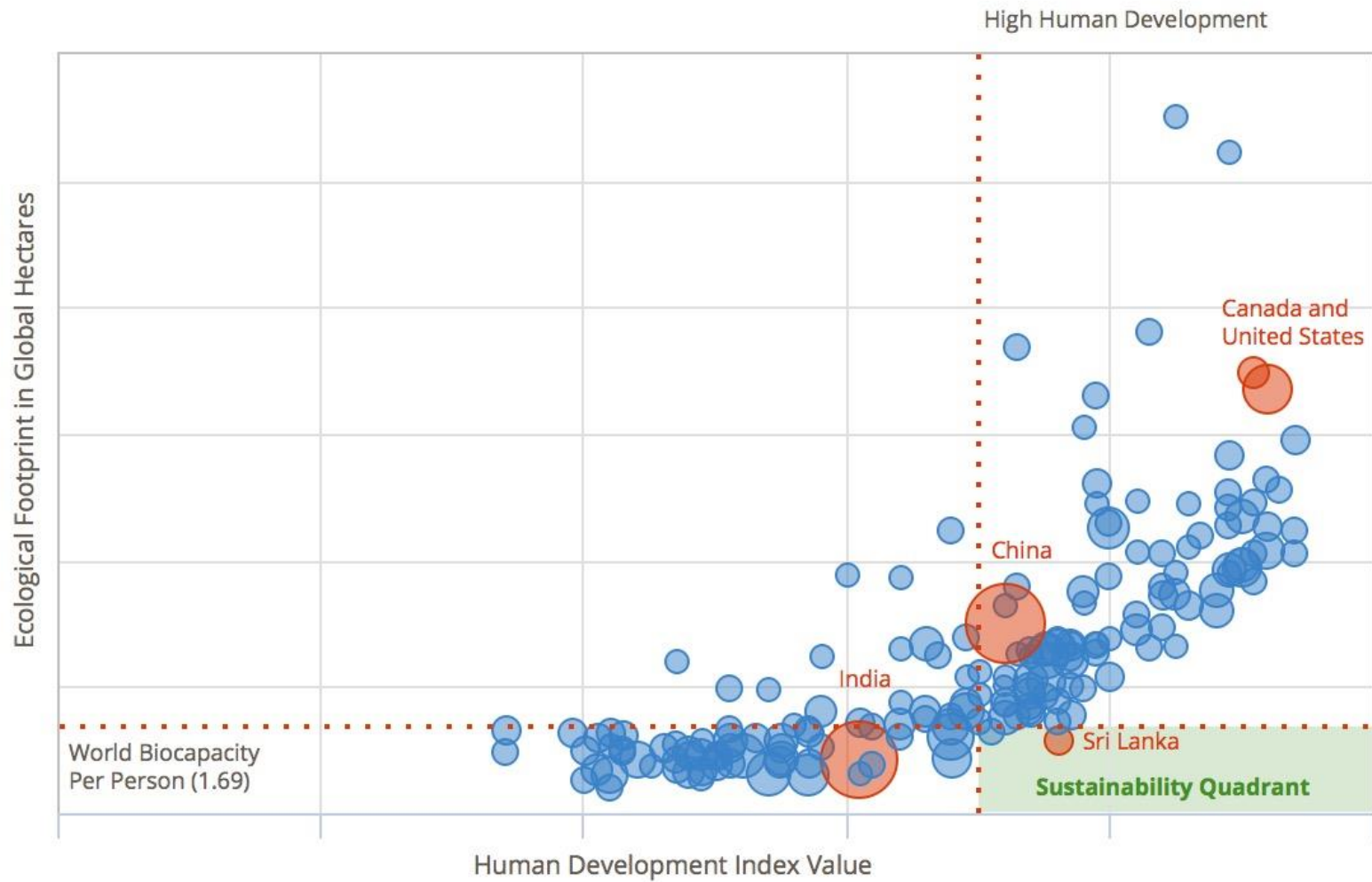
14

Sustainability

Social-Environmental
Environmental Justice
Natural Resources Stewardship
Locally & Globally

Environmental
Natural Resource Use
Environmental Management
Pollution Prevention
(air, water, land, waste)

Environmental-Economic
Energy Efficiency
Subsidies / Incentives for
use of Natural Resources

Sustainable

Social
Standard of Living
Education
Community
Equal Opportunity

Economic
Profit
Cost Savings
Economic Growth
Research & Development

Economic-Social
Business Ethics
Fair Trade
Worker's Rights

Institute for
Sustainable
Infrastructure

Development vs. Resources

Development vs. Resources

High Human Development

Ecological Footprint in Global Hectares

Canada and United States

China

India

Sri Lanka

World Biocapacity Per Person (1.69)

Sustainability Quadrant

Human Development Index Value

Changing Environment

- What is the new "normal"?

- What are the possible extremes?

- Are there any new variables?

Infrastructure's Role: Long-term

Highways
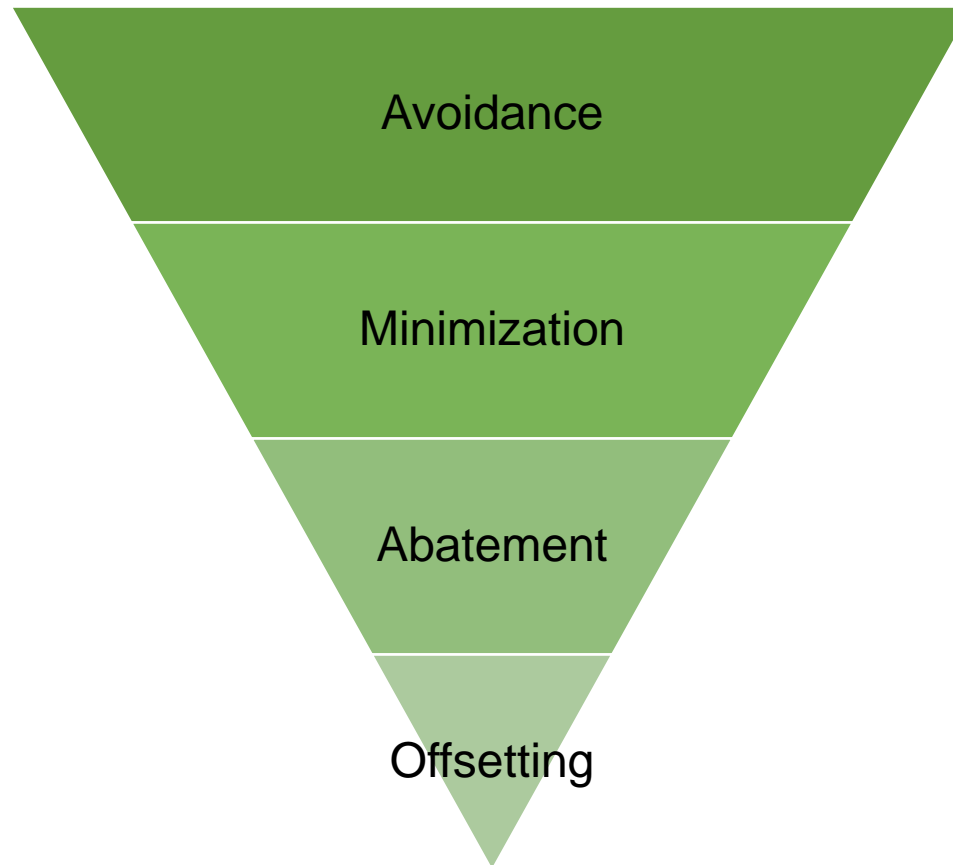20-50 years

Bridges
30-75 years

Pipelines
50-100 years

Dams
50-100 years

Institute for
Sustainable
Infrastructure

Re-Thinking the Economic Model

Image courtesy of Financial Times

Expanding Opportunities for Performance Improvement

Project Phases

More durability and flexibility

End of life disassembly, up-cycling
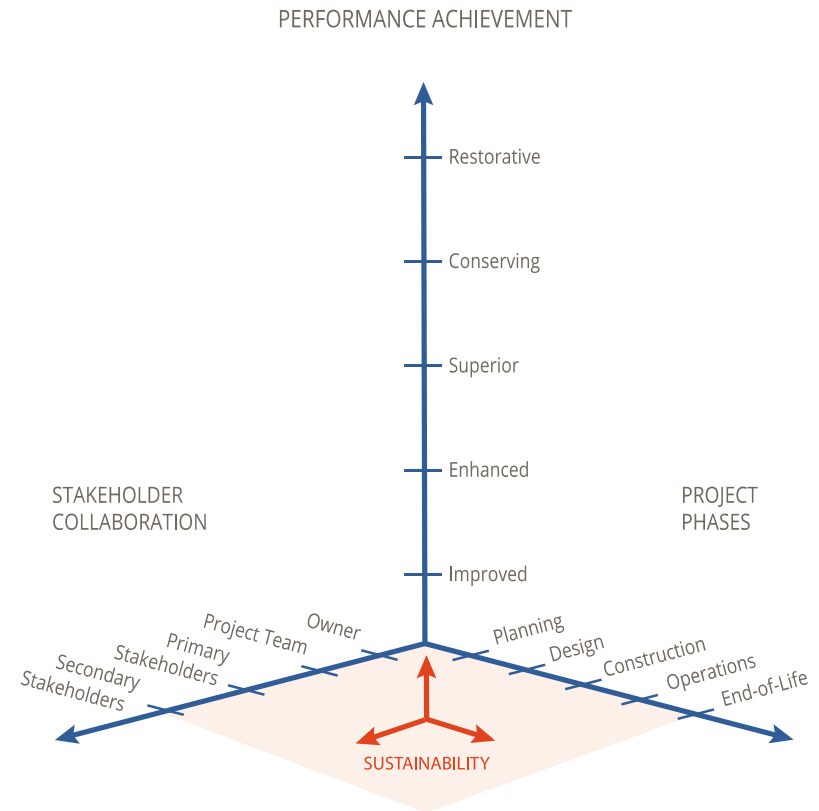
Stakeholder Collaboration

Project team collaboration

Stakeholder issues and concerns

Performance Achievement

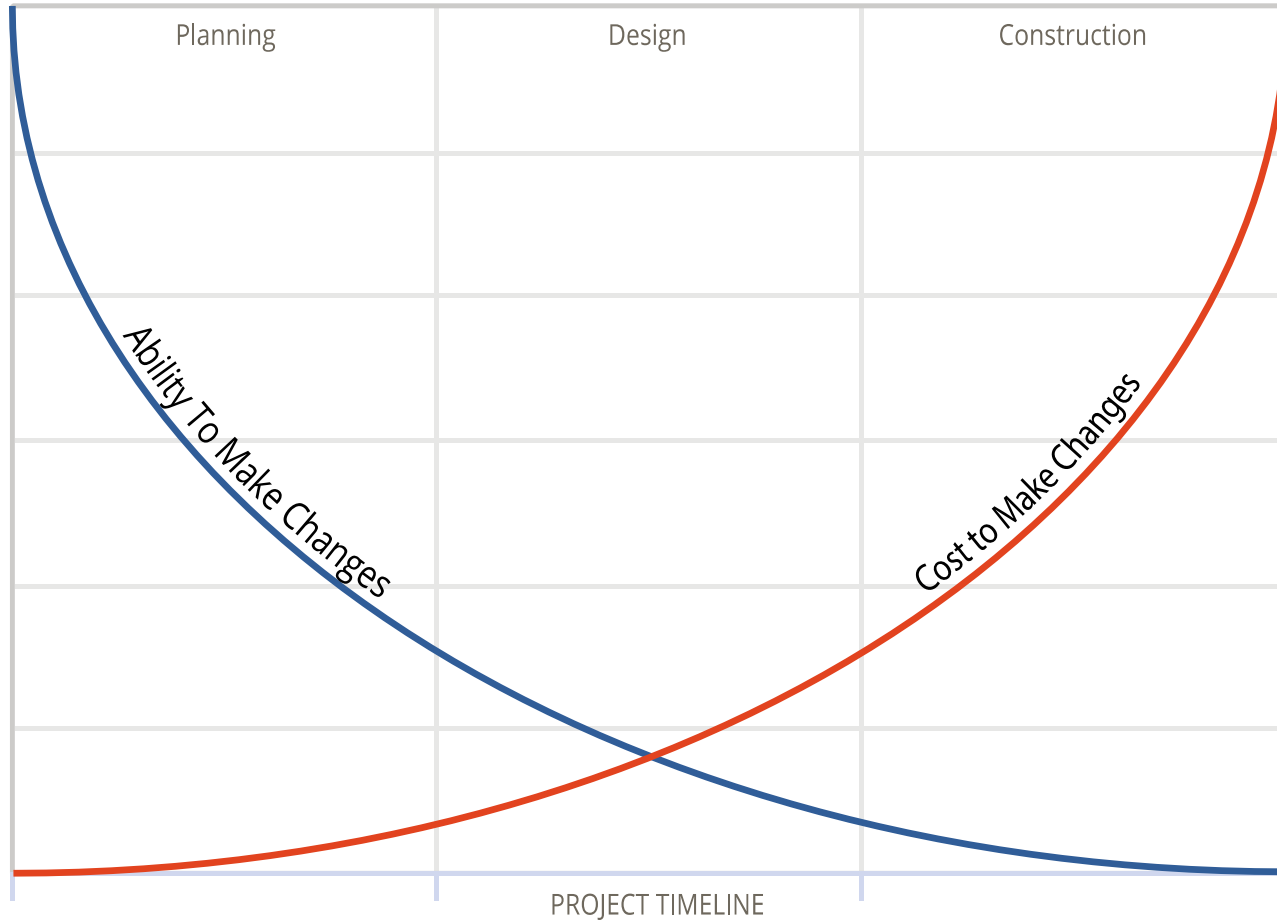Beyond sustainable equilibrium

Restoration of systems

Envision Award Levels

Making the Most of Opportunities

Advancing Sustainability Knowledge and Education

- Captures, retains, and disseminates knowledge

- Creates a new breed of sustainability engineer/practitioner
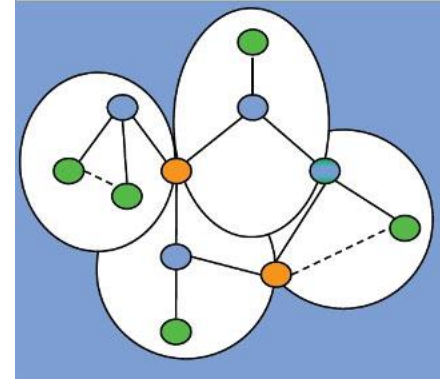
Envision – Credits in 5 Categories

Quality of Life

Leadership

Resource Allocation

Natural World

Climate & Resilience

Institute for Sustainable Infrastructure

Quality of Life

Wellbeing

Mobility

Community

Leadership

Collaboration

Planning

Economy

Resource Allocation

Materials

Energy

Water

Natural World

Siting

Conservation

Ecology

Risk and Resilience

Emissions

Resilience

The Envision Framework

1. Envision Guidance Manual

2. Envision Pre-Assessment Checklist

3. Envision Online Scoresheet

4. Envision Sustainability Professional Credential

5. Envision Verification

6. Envision Awards

Verification – Envision v3

New Verification Path

Envision v3 will require a post-construction review. Projects may choose one of two verification pathways.

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

Why Envision?

1. Quantify sustainable practices with standardized, nationally recognized metrics

2. Incorporate sustainability and resiliency philosophies into infrastructure projects

3. Quantify soft benefits of sustainable and resilient infrastructure

4. Strengthen interagency and regional cooperation

5. Improve infrastructure integration

Institute for Sustainable Infrastructure

Justin Waples, PE, ENV SP, PMP
jwaples@centralsan.org
925 229 7368

ENV SP Credential Maintenance

Maintenance Requirements		
	Member (including individuals)	Non-Member
Education	7 hours per year • 2 prescribed by ISI • 5 user's choice	7 hours per year • 2 prescribed by ISI • 5 user's choice
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

Sustainability

Social-Environmental
Environmental Justice
Natural Resources Stewardship
Locally & Globally

Environmental
Natural Resource Use
Environmental Management
Pollution Prevention
(air, water, land, waste)

Environmental-Economic
Energy Efficiency
Subsidies / Incentives for
use of Natural Resources

Sustainable

Social
Standard of Living
Education
Community
Equal Opportunity

Economic
Profit
Cost Savings
Economic Growth
Research & Development

Economic-Social
Business Ethics
Fair Trade
Worker's Rights

Institute for
Sustainable
Infrastructure