Hazen

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Strengthening Water Infrastructure Planning and Design Outcomes Using Sustainable Concepts within the Envision Rating System

NEWEA
WORKING FOR WATER QUALITY

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Presentation Outline

Brief Overview of Envision

Case Studies at Various Project Phases

Acknowledgements

Lauren Zuravnsky – HRSD

Jorge Acevedo – City of Coral Gables

Dwayne Amos – Hazen

Chris Kish - Hazen

Brief Overview of Envision

What is Sustainability?

Sustainability often means different things to different people

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

United States Environmental Protection Agency

Individual Sustainability Concerns

Storm Surge / Sea Level Rise

Extreme Weather Events

Aging Workforce / “Brain Drain”

Energy Efficiency / Carbon Emission

Economy and Population Dynamics

Social Equity / Engagement

Infrastructure Age / Reliability

Water Resource Availability

Envision Sustainable Infrastructure Framework

ENVISION

Created and Maintained by:

Institute for Sustainable Infrastructure

ZOFNASS PROGRAM FOR SUSTAINABLE INFRASTRUCTURE
Graduate School of Design
Harvard University

ISI founded by:

APWA

ASCE

ACEC

Challenges Using LEED for Water Projects

- LEED is exceptional for sustainable design of ***inhabited structures*** (e.g. admin building)
- Application of LEED for civil/water projects is challenging, and not highly applicable
- LEED is extremely prescriptive, so need for a more holistic approach for planning was needed

Envision's Five Categories

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

What Makes Envision Useful?

Directly and highly applicable to civil infrastructure

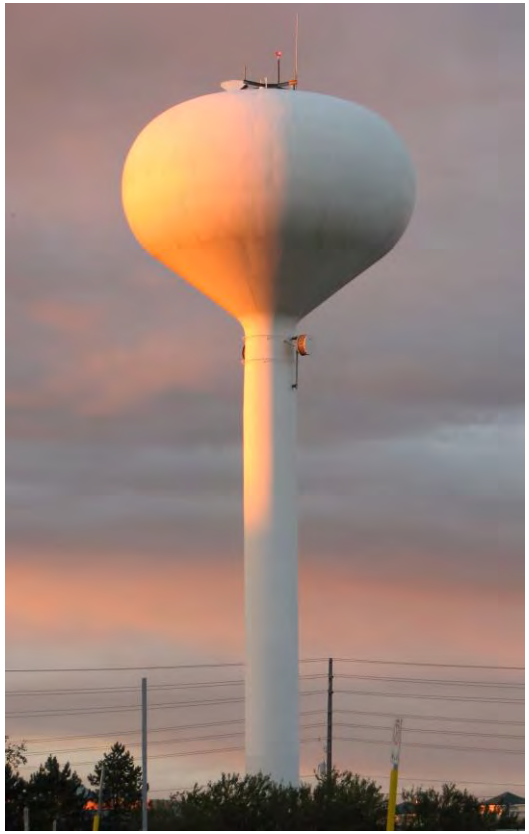
Anyone can use it at any point in the project

Multi-sector applicability in all project phases

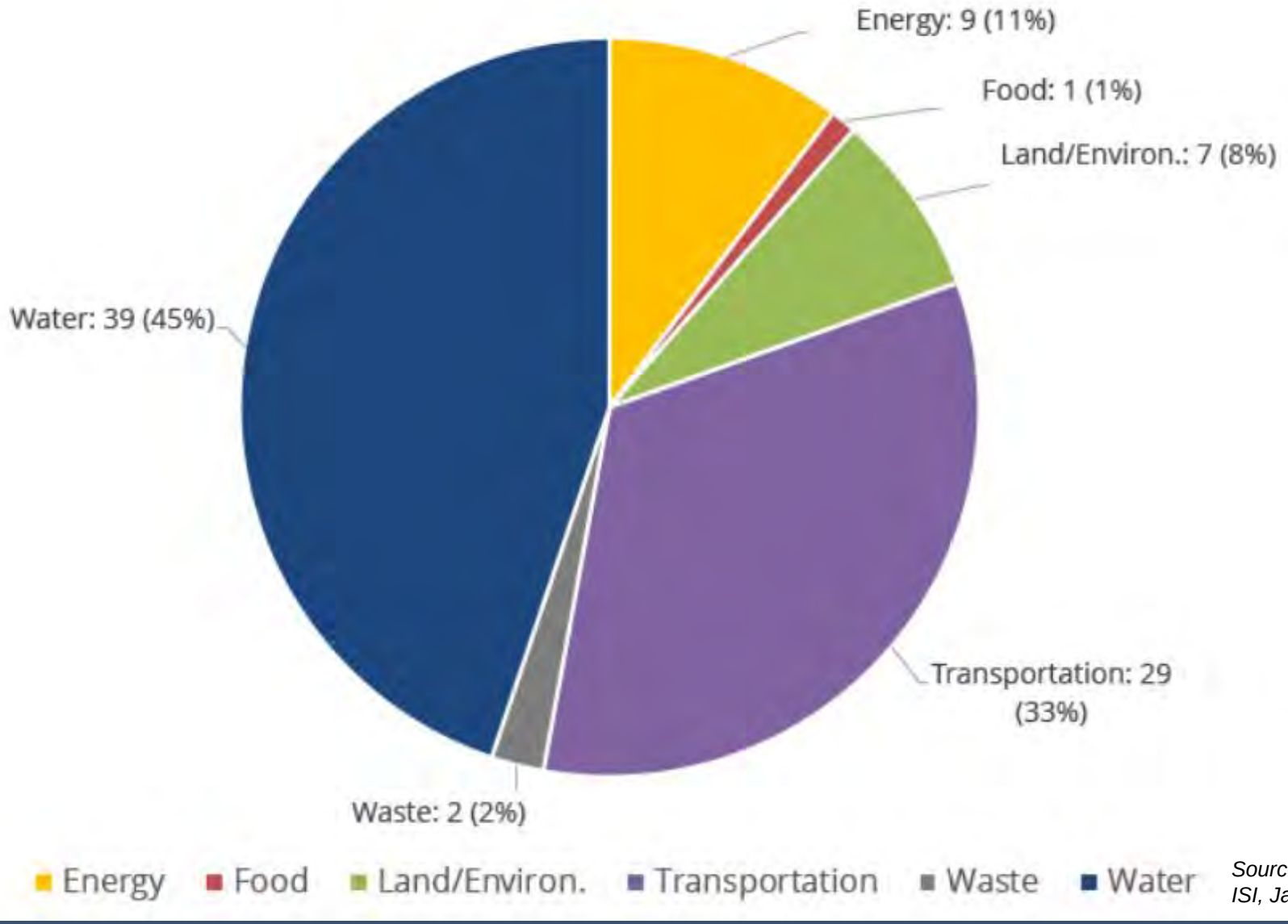
Addresses full spectrum of sustainability

- Social, Environmental, Economic
- Resilience

Convenient vehicle for bringing a consistent sustainability approach to any project

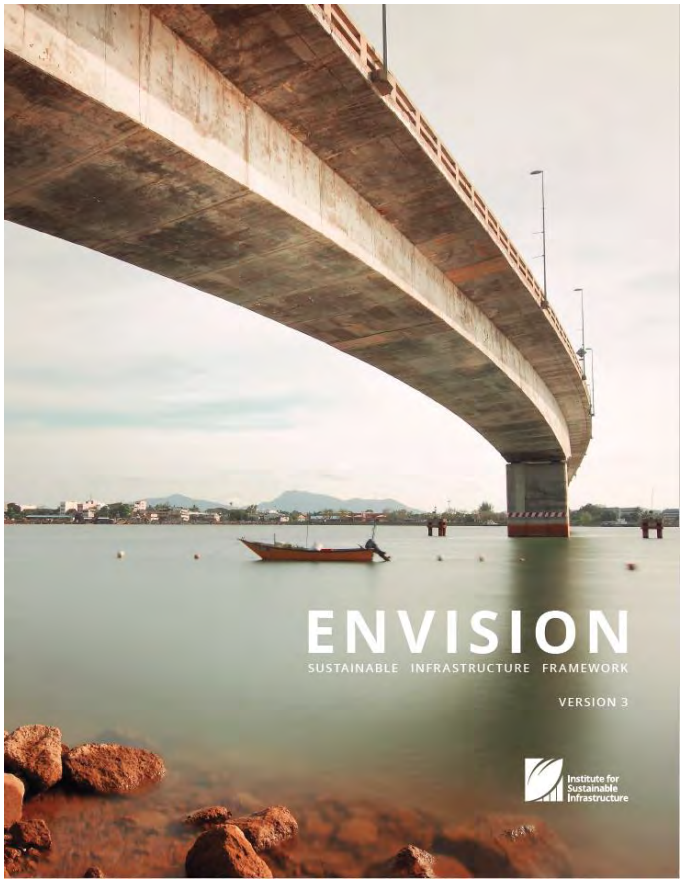


Envision Use by Sector (Verified Projects)



Source: ISI, January 2020

Major Envision System Components



ENV SP Professional Credential (ENV SP)

Guidance Manual

Pre-assessment Checklist

Online Scoresheet

Optional Third-Party Verification

Optional Project Certification

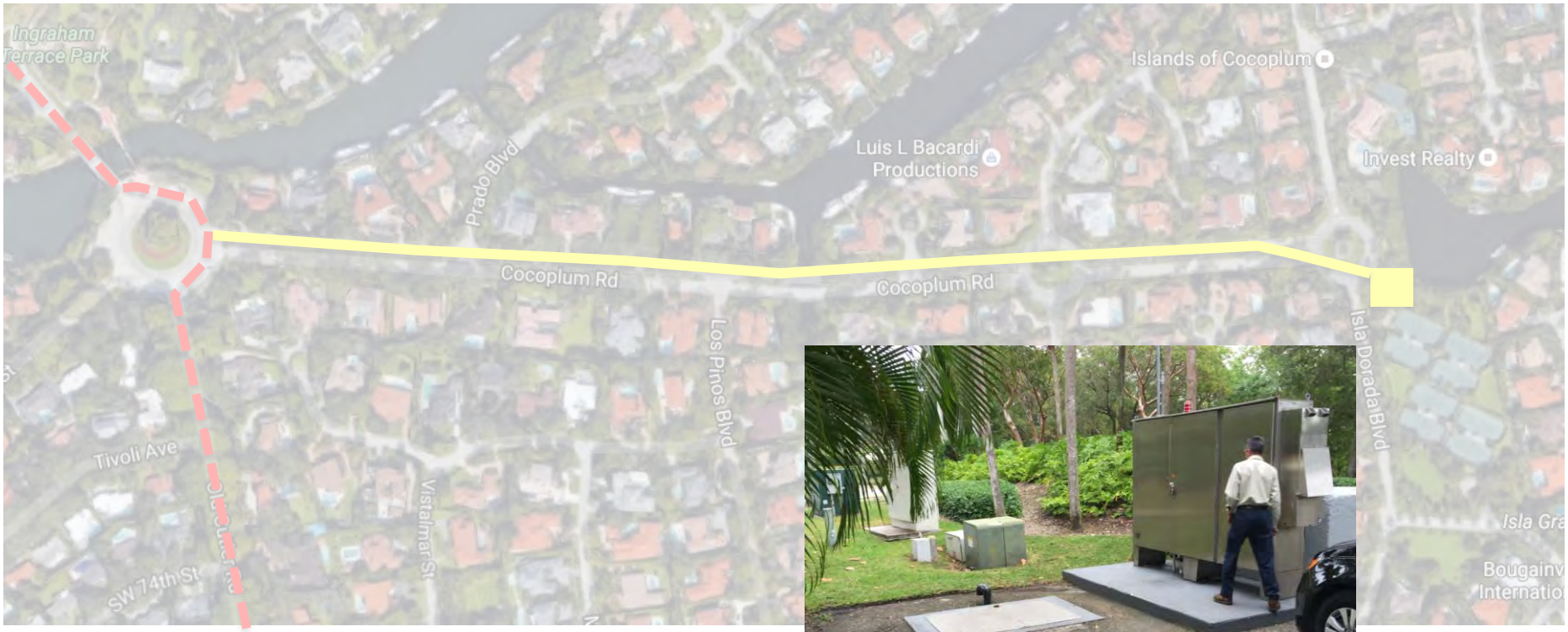
- Verified, Silver, Gold, Platinum

Envision Version 3 – Primary Updates

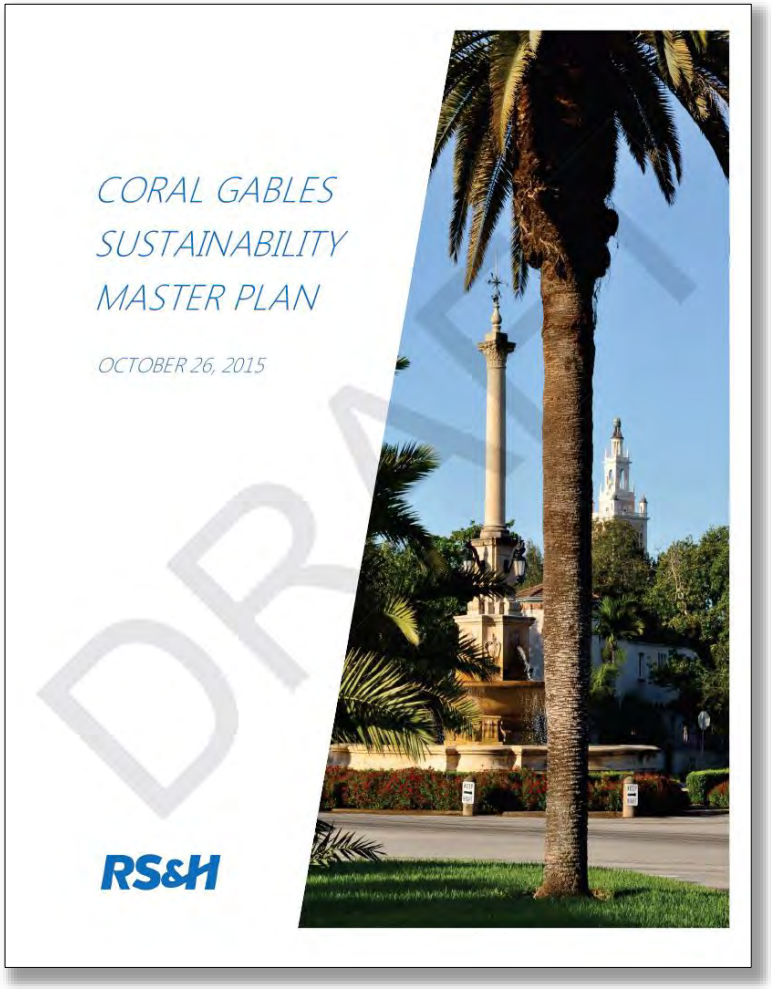
- **Credits**
  - Revised/consolidated
  - New credits focus on resiliency, construction phase, lifecycle costs, equity/social justice
- **Credential Maintenance**
  - Ensures ENV SPs maintain current with sustainability practices
  - 7 hours annually
- **Third-Party Verification and Award (*Optional*)**
  - Version 2: Pursue award as early as 95% design
  - Version 3: Two different “Pathway” options
    - Pathway A: Award at 95% design; Confirm construction performance at 95% construction
    - Pathway B: Award at 95% construction

Case Studies at Various Project Phases

Coral Gables – Cocoplum PS and FM Upgrade



Progressive Sustainability Initiatives

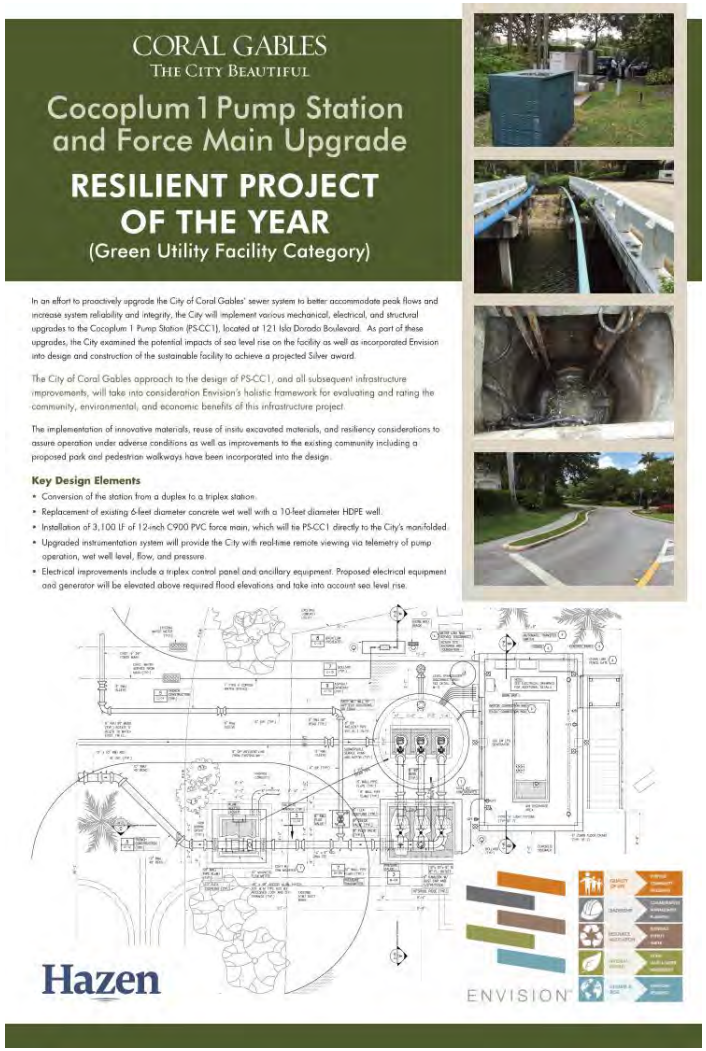


- Highly progressive sustainability initiatives
- “Big Picture” goals
- Siloed efforts
- Challenged with project-level uniformity and guidance

Envision Helped Bring it All Together

Category: Quality of Life					
Subcategory	**Credit**	**Credit Title**	**Coral Gables Document**	**Page No.**	**Applicability**
Community	QL 2.3	Minimize Light Pollution	Green Comprehensive Plan	2	Policy GRN-1.3.3 - The City will research and develop provisions within Zoning Code that will encourage development of LEED (or similar) certified buildings including but not limited to the examination of the following: -"Dark skies" lighting strategies
Community	QL 2.4	Improve Community Mobility and Access	Sustainability Master Plan	30	Expansion of Transit Services: -Community Improvement District -Bicycle and Pedestrian Plan Implementation
			Green Comprehensive Plan	2	Policy GRN-1.3.2 - All new development proposals shall include designated safe pedestrian paths of travel within the site and provides pedestrian access to and from the public right-of-way to encourage walkability.
Community	QL 2.5	Encourage Alternative Modes of Transportation	Sustainability Master Plan	6	Reduce gasoline and diesel fuel use 20% below 2013 levels by 2025 -Fuel Economy -Fleet Size -Electric Vehicles & Infrastructure
			Green Comprehensive Plan	3	Policy GRN-1.3.5 - The City will encourage private and public sector employers to promote fewer work-based vehicle trips. -Incentives for carpooling -Employees incentives for energy efficiency and cost saving measures. -Promote video conferencing or conference calls. -Implement flex time programs for eligible employees. -Provide green building educational materials to the community -Collocation of facilities
Well Being	QL 3.1	Preserve Historic and Cultural Resources	Sustainability Master Plan	9	Preserve Historic Heritage

Envision Use at All Project Phases



- Enhanced interdepartmental coordination
- Identification of benefits for internal *and* external stakeholder engagement
- Standardized for project design

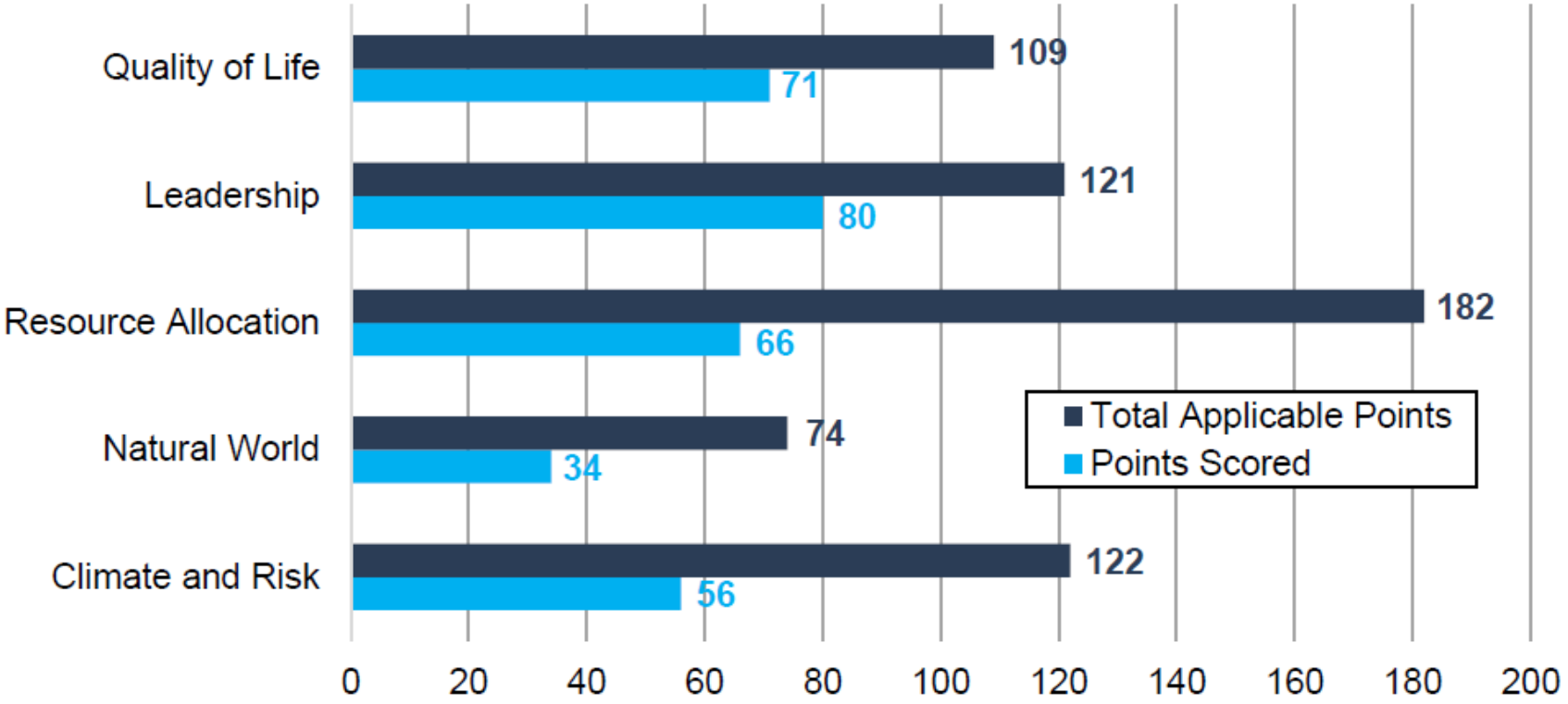
HRSD – Sustainable Design Opportunities

One (1) million gallon per day (MGD) aquifer replenishment and demonstration project for future full-scale 100 MGD program.

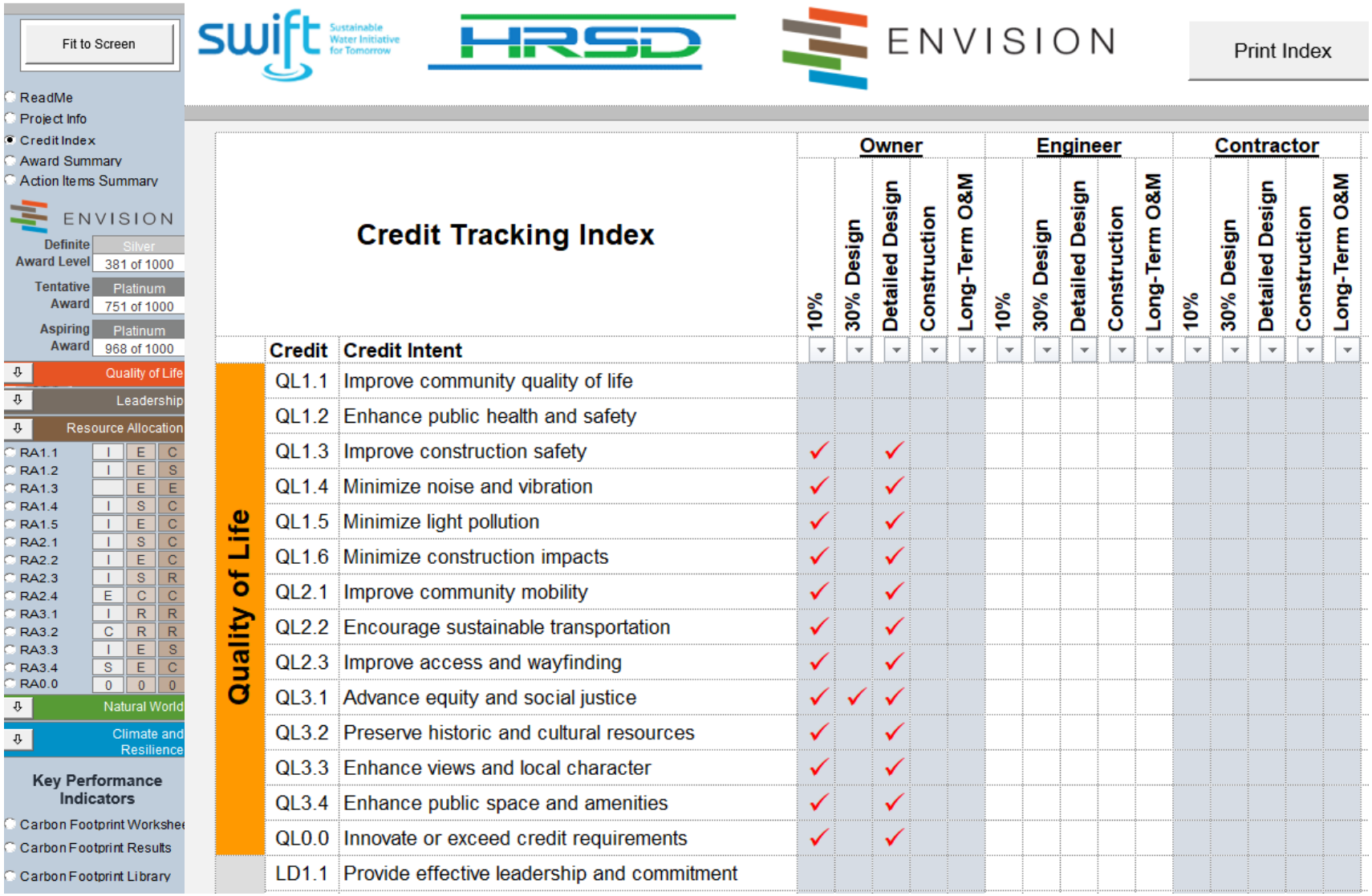
- Public outreach & engagement
- Rain water harvesting
- Solar panels
- Pervious pavement

Benefits of SWIFT Envision Evaluation

Project was on track to achieve greater than 50% of applicable points, which may have qualified for Platinum



SWIFT Full Scale Implementation Program



Closing

Benefits of Using Envision Programmatically

- Sustainability initiatives into action
- Consistent, transparent approach
- Benchmark and track relative performance
- **Strengthens the overall outcome of the planning/design process**
- Long-term thinking through resiliency and preparedness principles
- Strengthen interdepartmental cooperation
- **Increased public involvement, confidence, and "buy in" (controversial projects)**

Thank you!

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