

Department-Wide Application to “Non-Green” Projects



THE ENVISION™ RATING SYSTEM



Objectives

- **Intro to Envision**
- **Aligning with Envision**
- **Dry-run a “Typical” Project**
- **Identify & Close Point Gaps**
- **Applicability Department-wide**



Envision™ is the Rating System for Sustainable Infrastructure

LEED and Green Globes are for *occupied buildings*



Envision™ is for everything else...



ENERGY



WATER



WASTE



TRANSPORT



LANDSCAPE

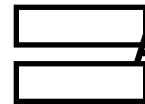


INFORMATION





American Public Works Association



American Society of Civil Engineers

**American Council of Engineering
Companies**



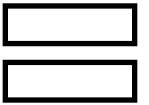
INSTITUTE FOR
SUSTAINABLE
INFRASTRUCTURE



ZOFNASS PROGRAM
FOR SUSTAINABLE INFRASTRUCTURE



Graduate School of Design
Harvard University

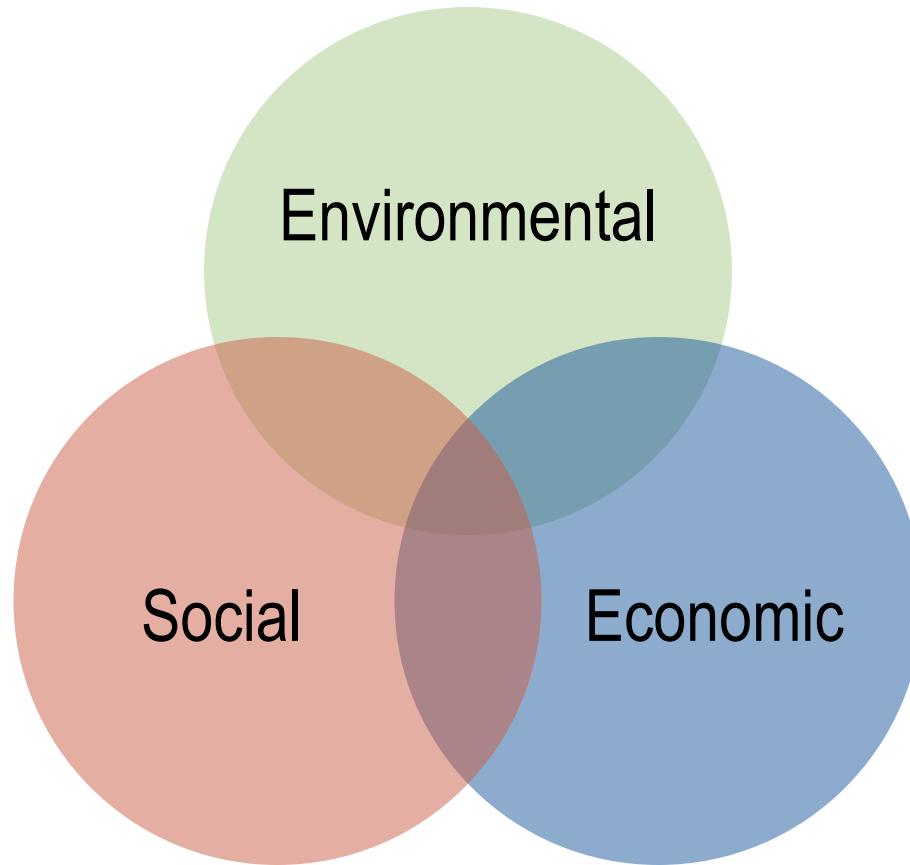


THE ENVISION™ RATING SYSTEM



GREELEY AND HANSEN

The Triple Bottom Line

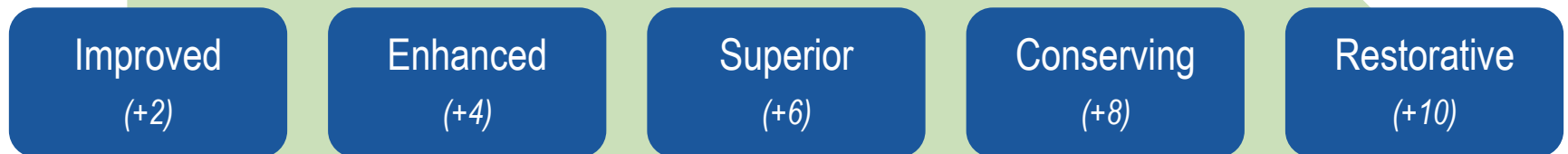


Categories and Achievements

Categories:







Levels of Achievement:



**Point scale varies per credit.*

Award Levels

Recognition Level	Minimum Applicable Points
Bronze Award	 20%
Silver Award	 30%
Gold Award	 40%
Platinum Award	 50%



Aligning with City Initiatives

PlaNorfolk 2030 (2011)

“A sustainable environment that is not simply protected, but enhanced.”

Priority Area Plan (2011)

“A premier waterfront community that creates a positive, regenerative effect on its environment...”

CITY

LEED

Natural Resource Protection

Natural Hazards

Economic/Workforce Viability

Public Relations

ISI

Envision

Resource Allocation

Climate & Risk

Local Skills & Capabilities

Community Quality of Life

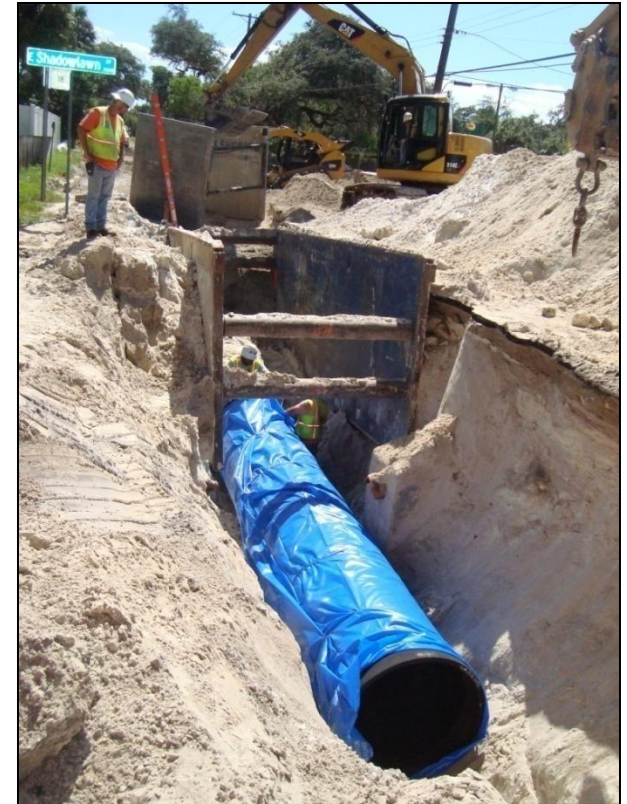
How about a Typical Project?

■ The Scenario

- New apartment complex
- Capacity analysis performed
- FM is under capacity

■ The Design

- Abandon existing FM in-place
- Install a new FM (\$2.5M)
- All work within ROW

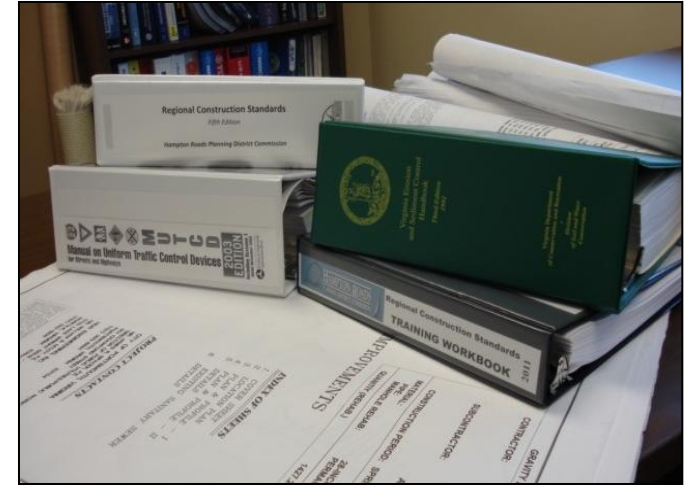


Not a “Green” Project – Merit Award

Project Delivery Approach

■ Process

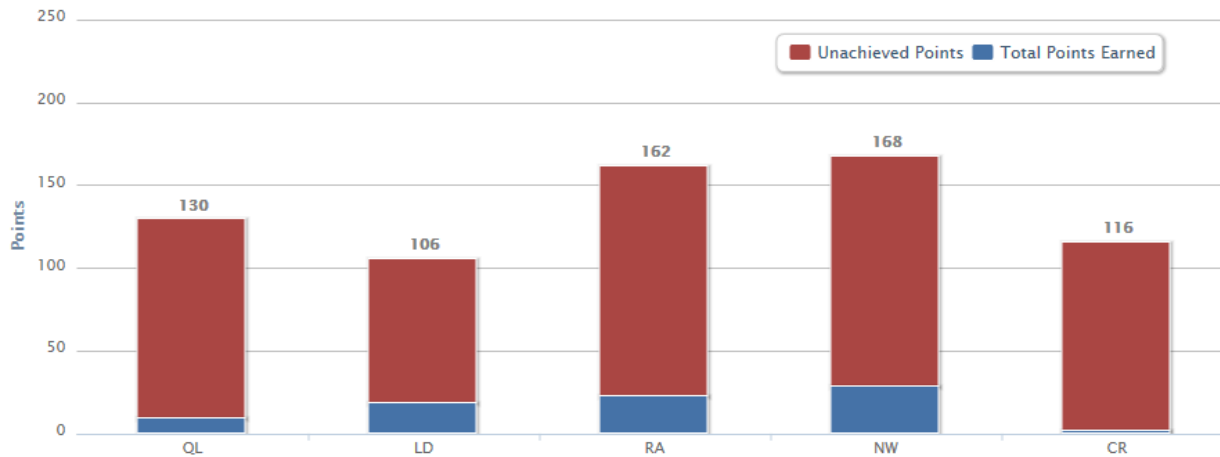
- Planning
- Design, bid, build



■ Strategy

- Follow standards and regs
- Community advancement
- Assuming no “green” components

Results of a Conventional Approach



Category	Max. Points	Points Earned	% Acheived	Merit Award Requirements
Quality of Life	130	10	8%	5%
Leadership	106	19	18%	5%
Resource Allocation	162	23	14%	5%
Natural World	168	29	17%	5%
Climate and Risk	116	2	2%	5%
Total =	682	83	<u>12%</u>	25%

Closing the Gap

■ The Approach

- Find attainable points
- Avoid impacting construction costs

■ The Goal

- Merit
- Evaluate the Cost



Opportunities...



Credit	Title	Added Pts.	Additional Requirement
QL 1.1	Improved Community Quality Of Life	+8	Reach extended communities
QL 1.3	Develop Local Skills and Capabilities	+2	Specify preference for hiring local firms
QL 2.1	Enhance Public Health and Safety	+16	Prep a Risk Assessment and a Health & Safety Plan exceeding min. standards
QL 2.2	Minimize Noise and Vibration	+8	Perform study and prepare a monitoring/mitigation plan
QL 2.6	Improve Accessibility, Safety, & Wayfinding	+3	Add more ingress/egress detail to plans
QL 3.3	Enhance Public Space	+2	Document discussions of creating spaces
Total =		+39	

Opportunities...



Credit	Title	Added Pts.	Additional Requirement
LD 1.1	Provide Effective Leadership & Commitment	+7	Add sustainability to PER and report on progress of initiatives
LD 1.2	Establish a Sustainability Management System	+7	Plan-do-check-act business and management processes
LD 1.3	Foster Collaboration and Teamwork	+3	Documented multidisciplinary coordination and risk/reward sharing
LD 1.4	Provide for Stakeholder Involvement	+4	Engage outside communities
LD 3.1	Plan Long-Term Maintenance	+10	Comprehensive long-term O&M Plan
	Total =	+31	

Opportunities...



Credit	Title	Added Pts.	Additional Requirement
RA 1.1	Reduced Net Embodied Energy	+2	Perform a Life Cycle Energy Assessment; ID Energy Reduction Possibilities
	Total =	+2	

Opportunities...



Credit	Title	Added Pts.	Additional Requirement
NW 2.3	Prevent Surface and Groundwater Contamination	+8*	In addition to E&S and SCPP; design for monitoring, prevention, and source elimination.
NW 3.4	Maintain wetland and surface water functions	+3*	Exceed minimum E&S requirements; document enhancing one ecosystem function.
Total =		+11*	

**Points not added to total.*

Opportunities...



Credit	Title	Added Pts.	Additional Requirement
CR 2.2	Avoid Traps and Vulnerabilities	+10	Add discussion of traps/vulnerabilities in PER
CR 2.3	Prepare for Long-term Adaptability	+16	Document design considerations incorporated specifically to improve resilience against climate change
CR 2.4	Prepare for Short-term Hazards	+3	Provide a hazard assessment (25 year)
Total =		+29	

Updated Results...

Category	Points Earned	Points Added	New Total	Max. Points	% Achieved	Merit Award Requirements
Quality of Life	10	39	49	130	38%	5%
Leadership	19	31	50	106	47%	5%
Resource Allocation	23	2	25	162	15%	5%
Natural World	29	0	29	168	17%	5%
Climate and Risk	2	29	31	116	27%	5%
Total =	83	101	184	682	<u>27%</u>	25%

- **Acknowledgement of Merit Achieved!**
 - **25% Total and 5% Min per Category**
 - **Community/Interdepartmental Communication**
 - **Additional documentation**

Costs – Added Points

- **Additional Costs Incurred**
 - **Planning and design time**
 - **Added Documentation**

Category	Planning	Engineering	Construction	Totals
Quality of Life	\$3,600	\$10,500	-	\$14,100
Leadership	\$6,900	\$9,600	-	\$16,500
Resource Allocation	\$4,200	\$12,000	-	\$16,200
Natural World	-	-	-	-
Climate and Risk	\$1,500	\$4,200	\$12,000	\$17,700
Totals =	\$16,200	\$36,300	\$12,000	<u>\$64,500</u>

Costs – ISI Fees

- **Application Fee = \$1,000**
- **Verification Fee...**

Project Size (\$)	Non-Member	Members
Up to 2 Million	\$3,000	\$2,400
2 to 5 Million	\$8,500	<u>\$7,000</u>
5 to 25 Million	\$17,000	\$14,000
25 to 100 Million	\$25,000	\$21,000
100 to 250 Million	\$33,000	\$28,000
Over 250 Million	\$20,000 + \$5,000 per 100 Million	

- **Appeals = \$500 each**

Total Costs

■ Example Project

Design = \$ 250,000
Const. = \$ 2,500,000
Total = \$ 2,750,000

■ Envision Costs

Pts. Added = \$ 64,500
Assembly = \$ 6,000
Application = \$ 1,000
Verification = \$ 7,000
Appeals = \$ 2,000
Total = \$ 80,500

Cost of Going Green = 3% of Design + Construction

Department-Wide Application

■ Why?

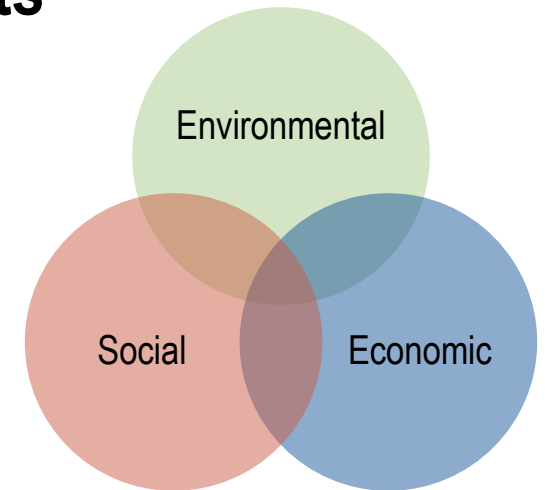
- Use of concepts in sustainable design
- Receive recognition of achievements

■ When?

- For all or select projects?
- High profile or “green” projects?

■ How?

- Insert concepts to Department guidelines
- Include as part of SOWs



Thank you!

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