



GRAY TO GREEN: IMPLEMENTING SUSTAINABLE TRANSPORTATION

NCAMPO Annual Transportation Planning Conference
2016

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AGENDA



- Introduction
- What is Greenroads®?
- Example projects
- Case study: intersection re-design
 - > Credits
 - > Costs



Meador Kansas Ellis Trail, Bellingham, WA
1st Certified Project in the world (2012)



Construction Team Site Meeting
Sandy Forks Road Reconstruction Project
City of Raleigh, NC

OUR BIG AUDACIOUS GOAL

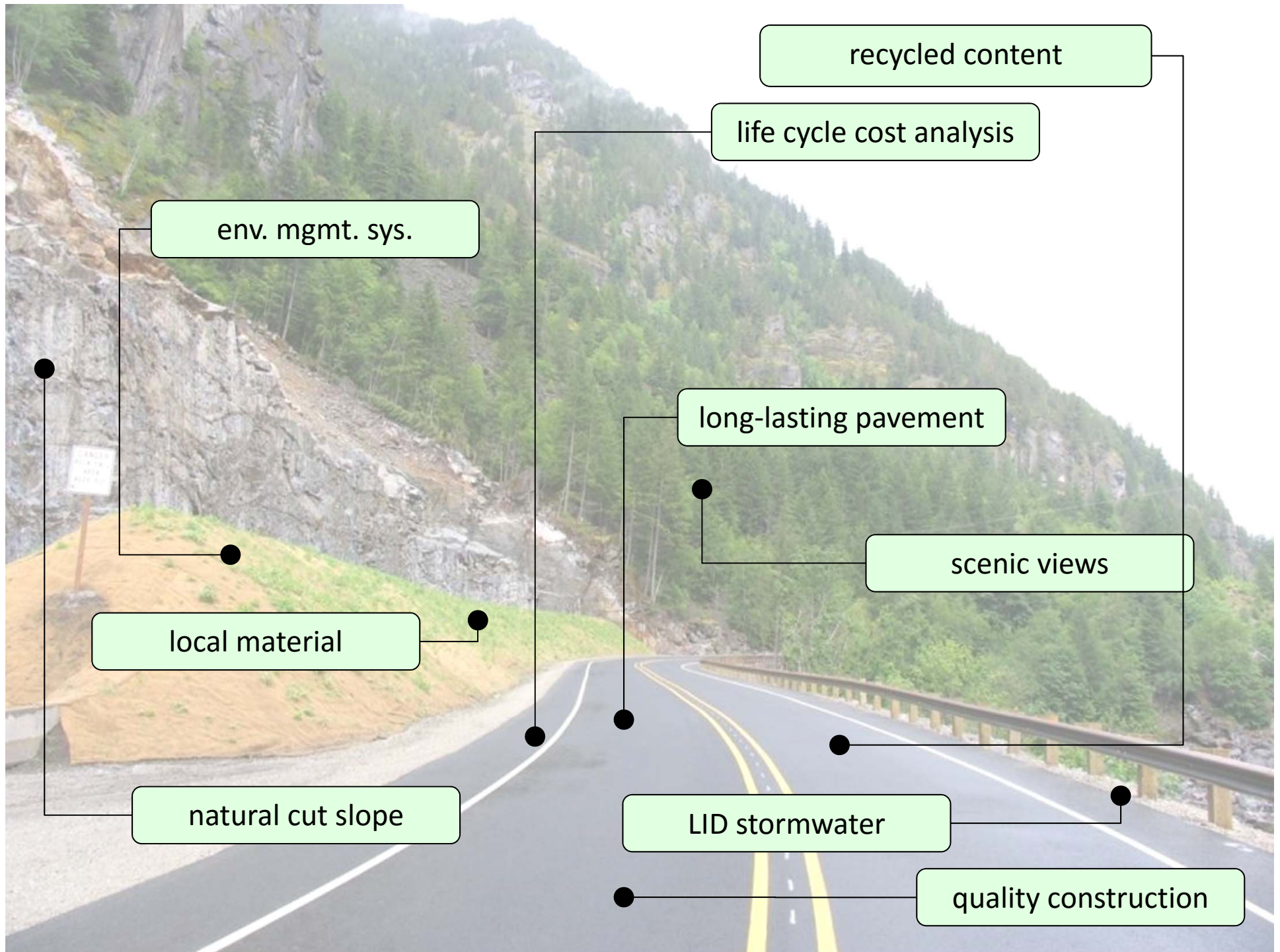
Fundamentally change the way transport projects are built on a global scale.

1. They can and must be built to be more sustainable.
2. We have the technology, skills, and desire to do so now.
3. We just need to get beyond “business as usual.”



So what does a Greenroad look like?





ped./bicycle access

safety enhancements

art

fewer emissions

bus rapid transit



recycled content

regional material

quality construction

LID stormwater

native vegetation



West Dowling Road Phase II

Alaska Department of Transportation



Photo by HDR

What is Greenroads?

An independent 3rd party sustainability rating system for transportation design and construction. It awards points for more sustainable practices and can help quantify and communicate the sustainable attributes of a transport project.

It is like LEED® for transportation.



James Street Bridge Replacement and Road Improvements City of Bellingham



What can Greenroads do for you?

- ✓ Define sustainable features on your project
- ✓ Benchmark and manage sustainability
- ✓ Communicate sustainability efforts to key stakeholders
- ✓ Stimulate the market for green transportation

It helps improve transportation project sustainability.



14th Street: Market Street to Colfax Avenue City and County of Denver



Photos from Concrete Works of Colorado, Inc. (prime contractor)

What does Greenroads address?

Greenroads is a project-oriented system of performance metrics focusing on design and construction actions and outcomes. Planning/operations/maintenance are represented and impacted by project development and delivery; this tool is primarily intended for design and construction, but can be used in many ways.

Greenroads addresses design and construction activities.



Smokey Point Transit Center Community Transit



Does Greenroads work for my project?

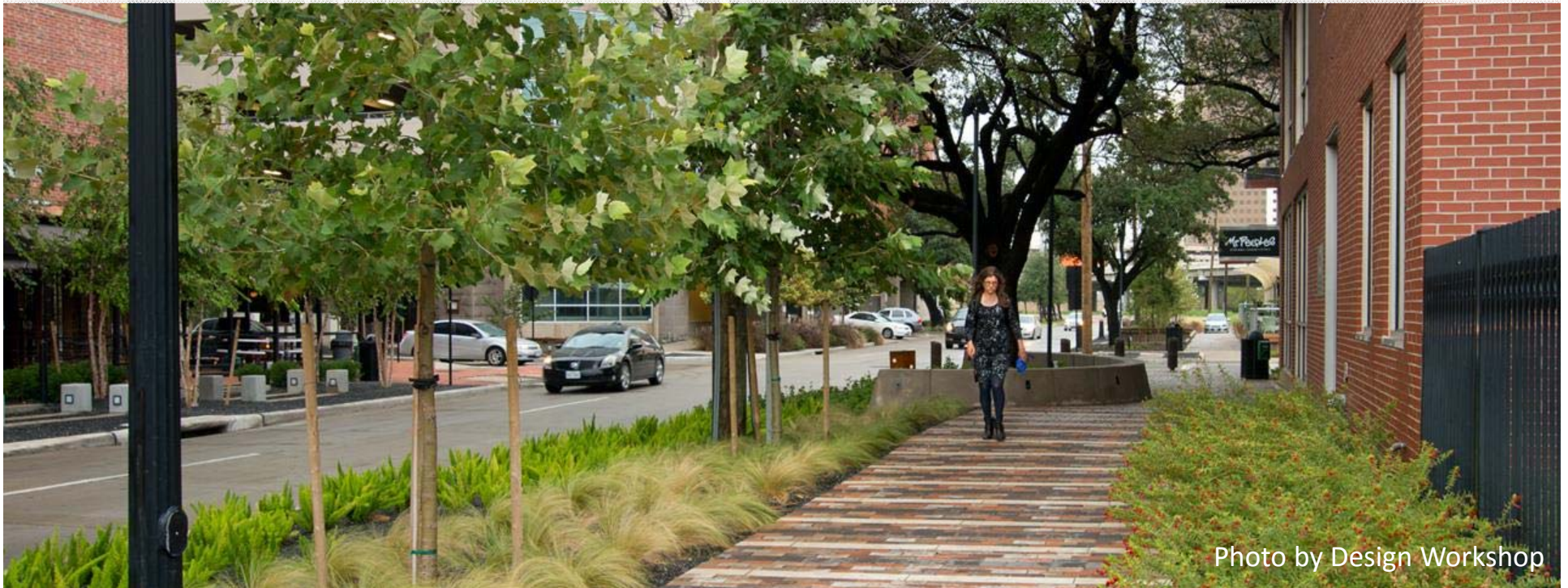
Greenroads works for streets, highways, bridges, tunnels, rails and trails, and more! It is applicable to a wide range of project sizes and scopes. It works for huge billion dollar mega-projects and for routine pavement overlay projects and everything in between.

Greenroads works for all types and sizes of surface transportation projects.



Bagby Street Reconstruction

Houston Midtown Redevelopment Authority



Why bother with a rating system for transportation projects?

Greenroads Projects are safer and quieter, more durable and less expensive, less congested and more accessible for everyone, and of course, better all around for the environment. Greenroads are higher performance and verifiably more sustainable than a typical project.

Greenroads are a necessary centerpiece of any green community, anywhere.

Greenroads is consistent with green development policy

Some examples from LEED and Greenroads:



State of North Carolina

Senate Bill 581 encourages green building practices in their jurisdictions through reduced permitting fees or partial rebates for construction projects that achieve LEED certification.



City of Tacoma: Greenroads Ordinance 38495

All City construction projects over \$5 million required to pursue Certification, with Gold aspirational goal and minimum Bronze Rating.



New Zealand Transport Agency

All alliance, design build and PPP projects >\$15 mil NZD required to certify with level determined by business case process. Silver Certification required >\$100 mil NZD.



5 Ways “Greenroads” Appears So Far

In Policy and Plans

- City of Tacoma (policy)
- City of Bellingham (plan)
- City of Austin (plan)
- NZ Transport Agency (policy + plan)

In Specs

- TxDOT/CMRA (reference)
- NZ Transport Agency (required)
- City of Bellingham (compel to perform)
- Community Transit (specials)
- Multnomah County (built in)
- City of Campbell (built in)

RFPs (Design, Design Build, P3)

- County of San Diego
- City of Ocean Shores
- Alaska DOT

In Bid Administration

- City of Santa Ana (flat rate for all)
- City of Raleigh (itemized, alternates)
- City of Fayetteville (cash incentive)
- City of Charlotte (2017)
- City of Bothell (itemized)
- City of Campbell (built in, alternates)
- City of San Jose (alternates)

In Alternative Delivery Contracts

- Caltrans (promised, required)
- Indiana DOT (promised)
- Ministry of Transport Ontario (required)
- NZ Transport Agency (required)
- TxDOT/CTMRA (promised, required)

Coming soon....in green bonds!



GREENROADS BY THE NUMBERS (APRIL 2016)

213+ Projects pursuing ratings, rated to date since 2010, worldwide

34 Certified Projects worldwide (12+ pending 2016)

>\$12 billion dollars in construction value in 10 states, 6 countries

217 Level 1 Sustainable Transportation Professionals

1 most-used transportation rating system in the world








The Greenroads® Rating System v2





Greenroads Categories: Version 2

Category	Description	Points
Project Requirements ⓘ	12 minimum requirements for a Greenroad	0
Core Credit Categories		
 Environment & Water	Habitat, vegetation, soil, water, stormwater	30
 Construction Activities	Construction equipment, processes, quality	20
 Materials & Design	Material processing, transport, design	24
 Utilities & Controls	Operational systems, mobility, maintenance	20
 Access & Livability	Modal access, culture, aesthetics, safety	21
Total Voluntary Credit Points		115
Creativity & Effort ⓘ	Local values, integrated teams, write your own	15
Total Points		130

Certification Levels



40-49 points



50-59 points



60-79 points



80+ points



A few key takeaways:

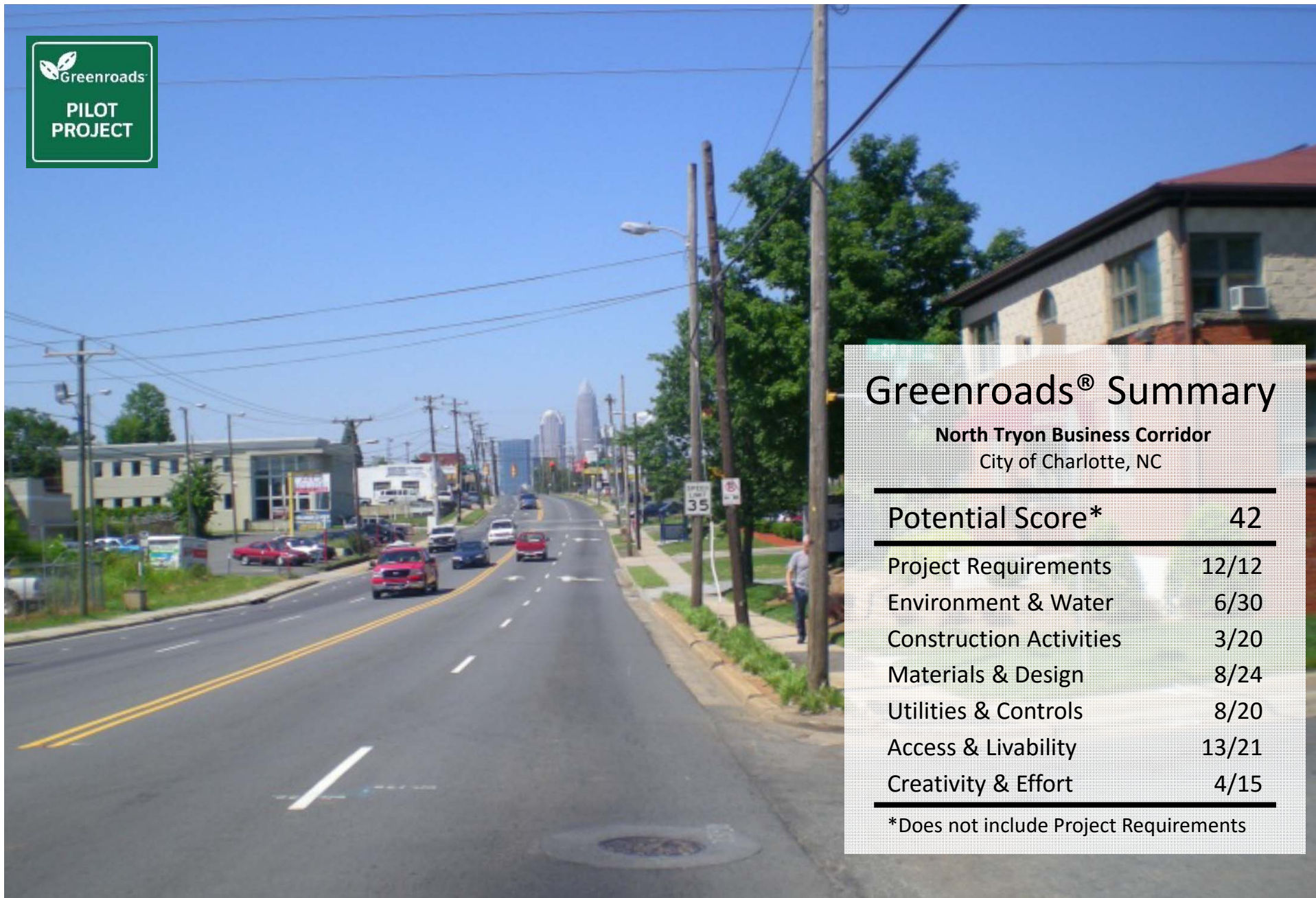
- Greenroads = higher standard, better performance
 - Beyond minimum compliance
 - Involve the whole team
 - Track green outcomes
- Green = investment in future
 - Address highest agency costs/policies
 - Save money, better ROI
 - Meet green funding criteria
- Get recognized for good work
 - Track green jobs
 - Show your commitment to sustainability and prove it



Chris Johnson, Project Manager
City of Raleigh, NC

Example Projects





Greenroads® Summary

North Tryon Business Corridor
City of Charlotte, NC

Potential Score*	42
Project Requirements	12/12
Environment & Water	6/30
Construction Activities	3/20
Materials & Design	8/24
Utilities & Controls	8/20
Access & Livability	13/21
Creativity & Effort	4/15

*Does not include Project Requirements

North Tryon Business Corridor

Charlotte, NC



Greenroads® Pilot Project

Person Street Greenscape & Roundabout

Fayetteville, NC, USA

Potential Score*	46
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Project Requirements	12/12
Environment & Water	16/30
Construction Activities	4/20
Materials & Design	7/24
Utilities & Controls	6/20
Access & Livability	7/21
Creativity & Effort	6/15

*Does not include Project Requirements

Person Street Greenscape & Roundabout

Fayetteville, NC

Sandy Forks Road Reconstruction

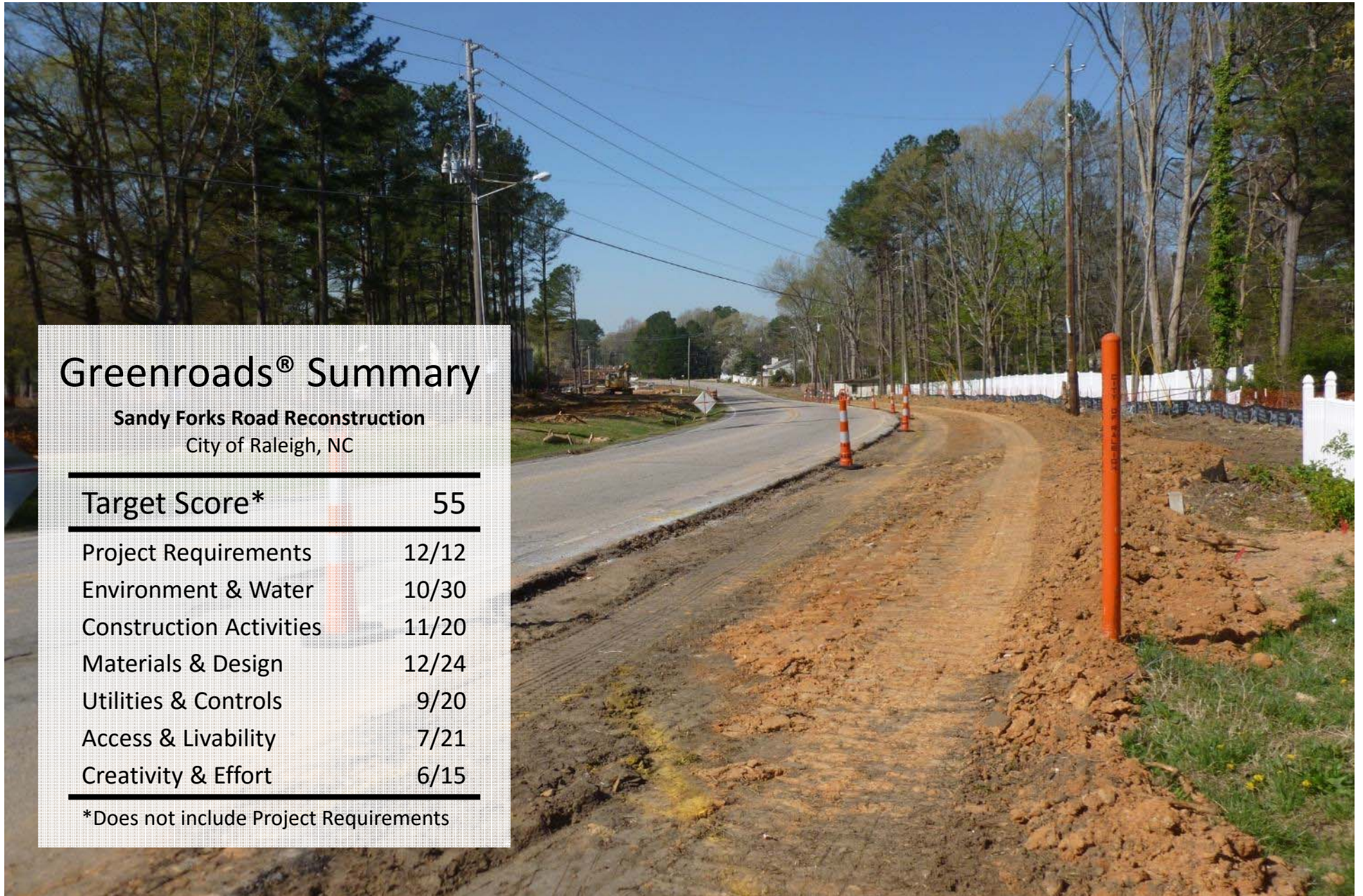
City of Raleigh, NC

Greenroads® Summary

Sandy Forks Road Reconstruction
City of Raleigh, NC

Target Score*	55
Project Requirements	12/12
Environment & Water	10/30
Construction Activities	11/20
Materials & Design	12/24
Utilities & Controls	9/20
Access & Livability	7/21
Creativity & Effort	6/15

*Does not include Project Requirements



Interstate 69 Section 5

Indiana DOT/Isolux Corsan



Greenroads® Summary

Interstate 69 Section 5 Pilot Project
Bloomington, IN, USA

Target Score*	40
Project Requirements	12/12
Environment & Water	6/30
Construction Activities	9/20
Materials & Design	6/24
Utilities & Controls	7/20
Access & Livability	5/21
Creativity & Effort	7/15

*Does not include Project Requirements



Monterey Road Rehabilitation

City of San José, CA

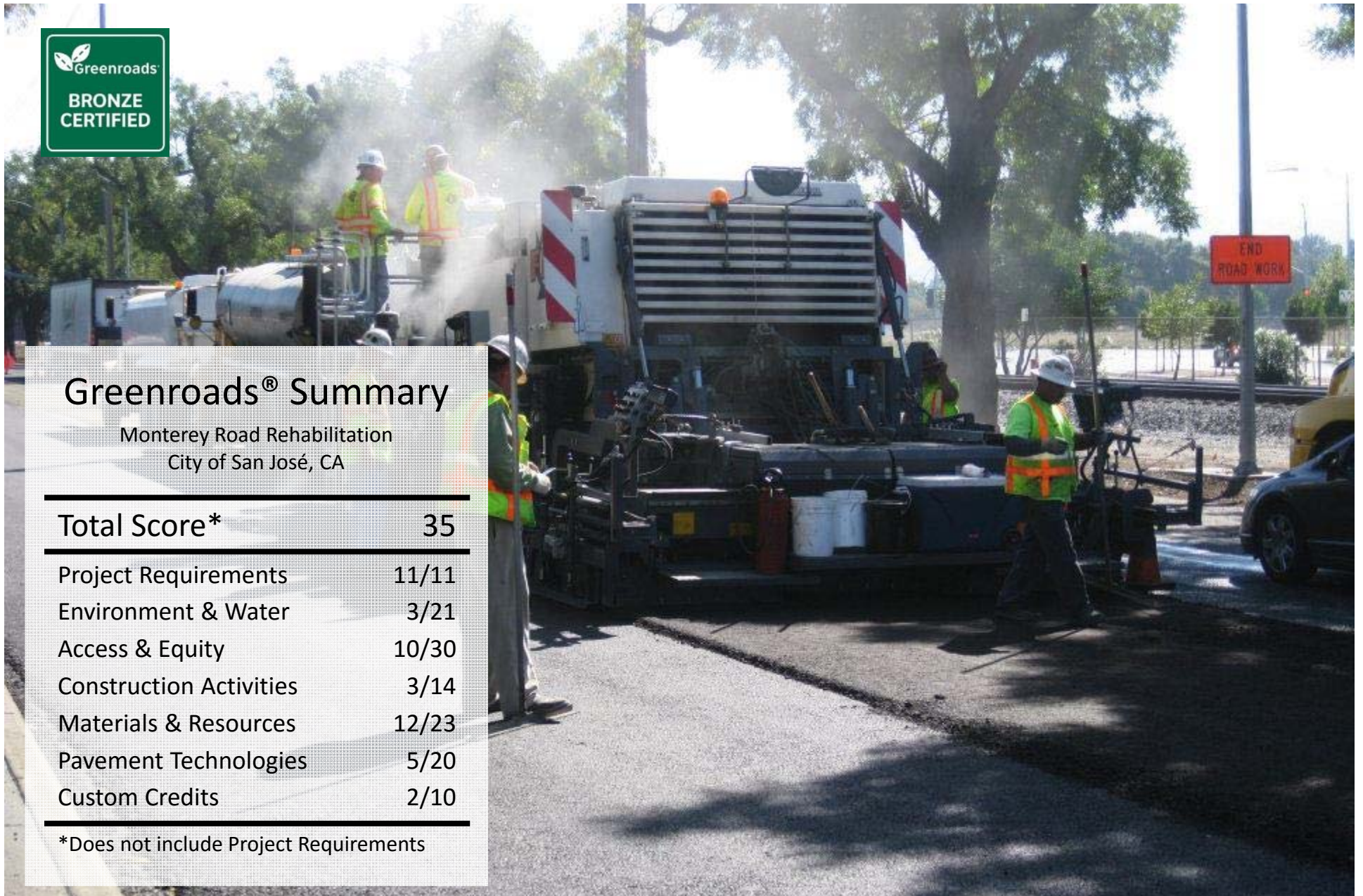


Greenroads® Summary

Monterey Road Rehabilitation
City of San José, CA

Total Score*	35
Project Requirements	11/11
Environment & Water	3/21
Access & Equity	10/30
Construction Activities	3/14
Materials & Resources	12/23
Pavement Technologies	5/20
Custom Credits	2/10

*Does not include Project Requirements



Next Steps to Get Involved

- Get Experience

- Screen your project for eligibility for FREE
- Try out a Practice Project
- Start early, get Registered
- Work with us internationally through Pilot Programs



- Get Educated and Participate

- Watch free video tutorials and testimonials online
- Take the STP Exam (Level 1 and 2) or practice first
- Donate to become a Founder for Greenroads
- Join up as a Member Organization
- Volunteering and committee opportunities for Members & STPs



www.greenroads.org





CASE STUDY

Intersection Re-design

INTERSECTION RE-DESIGN PROJECT



Reconstruction of SR 4 and Gilmore/Holden intersection

- > \$2.1M intersection safety improvement
- > Adds a second southbound lane
- > Realignment to improve sight distance
- > Minimize impact on adjacent property
- > Goal to become Ohio's first Greenroads®

Certified Project



PROJECT SITE



PROJECT SITE



PEDESTRIAN & BICYCLE CONSIDERATIONS



- No pedestrians on State Route 4
- Holden and Gilmore provide access to high school
- The city included sidewalk along Holden at their cost



GREENROADS EDUCATION



- Greenroads Webinar

- > City of Fairfield attended



- Common interest in evaluating an active project

- Greenroads Bootcamp

- > In depth investigation of credits and requirements

- > Attendees became registered STPs



ODOT REVIEW PROCESS



- White paper on approach to certification
 - > ODOT review meeting
- Specifications and quantities
 - > Identified items quantifiable as alternate bid items
 - > Developed notes to describe coordination and plans to be maintained by contractor



ANTICIPATED GREENROADS CREDITS



Credit Category	Minimum	Potential
Project Requirements	All 12	
Environment & Water	4	11
Construction Activities	9	12
Materials & Design	8	12
Utilities & Controls	3	7
Access & Livability	11	12
Creativity & Effort	1	3
TOTAL	36	57

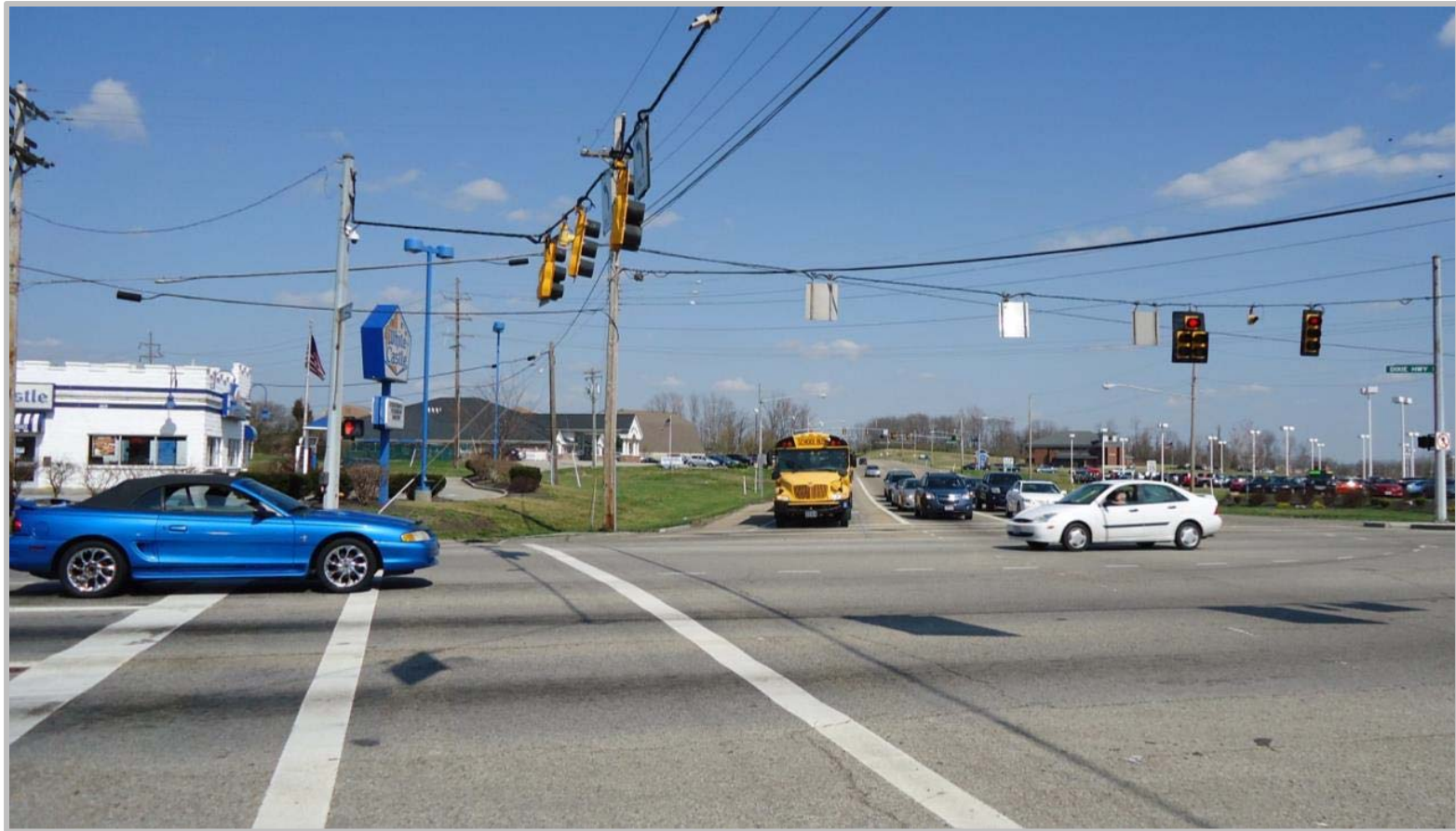
CONSTRUCTION COSTS



- ◉ Pre-construction meeting focused on Certification plan
 - > Review of general notes, website, STP process
- ◉ Construction bids for Alternate Bid Items
 - > Bids ranged from \$10,000 (0.5%) to \$30,000 (1.5%)
- ◉ Construction Engineering
 - > \$10,000 consultant fees and 80 to 120 hours for city engineering staff



COMING SOON: SUSTAINABLE CONSTRUCTION



FOR MORE INFORMATION



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