Achieving Sustainability at MnDOT

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22nd Annual Transportation Research Research Conference
May 24, 2011
Defining Sustainability

Sustainable practices respect, support and regenerate environmental systems, the economy and society over many generations.
Environmental Sustainability

Sustainable practices

• Are compatible with and may enhance the environment
• Reduce emissions and pollution
• Reduce the amount of resources needed to build, operate and maintain structures or systems
Societal Sustainability

Sustainable solutions increase opportunity and improve quality of life for all

- Accessible, safe, secure
- Mobility choice
- Community asset
Economic Sustainability

Sustainable solutions

• Support economic vitality
• Are cost-efficient
• Affordable
• Make wise use of economic resources (human, natural, manufactured, financial)
Basic Principles for Sustainability

• Use all resources wisely
• Consider the needs of future generations
• Evaluate a wide range of risks
• Protect and enhance the environment
• Conserve energy and natural resources
• Involve the public in transportation planning processes
• Improve quality of life (now and for future generations)
• Encourage innovative approaches to the design, operation and maintenance of our facilities
Sustainability in Practice
Lessons

• It’s about balance
  – Economy, Society, Environment

• Can’t do it alone – collaboration is required
  – No one person or entity has all the pieces

• Requires innovation and creativity
  – The most sustainable solution varies with the context

• Meets the challenges of the “New Normal”
Recent MnDOT Examples

- Quality of Life research
- Expanding the use of CSS
- Performance-based solutions
- Flood mitigation bonding
- Better Roads for a Better Minnesota
- Minnesota GO
- Sustainable highways review
Moving Forward

MnDOT already has many policies, practices, initiatives and procedures that contribute to sustainability – we can start there

- What exactly are we doing agency-wide and how do all the pieces fit together?
- How do we build on and institutionalize success?
- Where are the gaps?
- What are our priorities?
- How do we measure progress and...
Understanding Where We Are

FHWA Sustainable Highway Tool

• A collection of best practices (credits) and scoring system to measure sustainability
  o System planning
  o Maintenance and operations planning
  o Project development practices

Evaluate where MnDOT is today and identify priorities for increasing sustainability in the future
Objective of MnDOT’s Review

- Understand how Mn/DOT scores (as an agency and for typical projects) and WHY
- Use this information to determine next steps to increase sustainability in the transportation system and internal practices
  - Identify gaps
  - Identify high-value opportunities
  - Establish priorities
- Provide feedback on the tool itself
Welcome!

Pilot Test Version of the FHWA Sustainable Highways Self-Evaluation Tool

This website represents a significant revision of the FHWA Beta tool released in the Fall of 2010. We received many valuable stakeholder comments on the beta tool, and have made some significant changes to improve the tool and to address many of the comments. A few of the major modifications:

- Focuses on the evaluation of specific projects through the Project Development (PD) credits. The System Planning and Operations and Maintenance credits will be revisited and released later.
- Greatly simplifies credits and scoring. The credit explanations have been simplified and many credits have been eliminated or combined with others.
- Makes scoring smaller projects easier. We have created a “basic” version of the tool that includes credits that would be more

What do you want to do?

Learn
A guided tour through this website to learn about sustainable highways and integrating sustainability best practices into Project Development.

Browse
A gateway to browse the complete set of credits that can be used to evaluate sustainability in project development.
A collection of best practices (credits) that can be used to measure sustainability in roadway projects and within agencies

- Being developed by FHWA to provide consistency around what sustainability means
- Based in large part on GreenRoads
- Voluntary self-evaluation
- Still in development
What Is a Sustainable Highway?

• Satisfy life-cycle functional requirements while reducing negative environmental impacts and consumption of natural resources

• Assess and consider sustainability from conception through construction, maintenance and operations for its lifecycle

• Consider sustainability from the perspective that highways are one part of the transportation infrastructure and that transportation is one aspect of meeting human needs

• Measure success using a holistic range of indicators, such as multi-modal travel performance and materials and methods used for construction
Components of the (Beta) Tool

- **System Planning (SP)**
  - Agency-wide network management and planning; involves having appropriate policies, procedures and systems in place
  - Not specific to any one project

- **Operations & Maintenance (OM)**
  - Agency-wide practices, policies and procedures for overall functionality and efficiency of a highway network
  - Not specific to any one project

- **Project Development (PD)**
  - Development of a project once the general need and proposed solution are programmed. Includes environmental review, project planning, design, and construction decisions specific to the project.
Transportation System Planning

Agency wide criteria, applies to all roadways

- Comprehensive integrated planning
- Environmental management systems
- Context sensitive solutions
- Equity analysis
- Integrated land use planning
- Multimodal transportation
- Professional development
- TDM
- Safety
- Air quality
- GHG emissions
- Climate change (adaptation)
- Noise reduction
Operations, Management & Maintenance

Agency wide criteria, applies to all roadways:

- Pollution prevention
- Pavement, paved surface and bridge management systems
- Traffic control infrastructure
- Cleaning and litter
- Roadside

- Infrastructure
- Snow and ice control
- Mobility
- Safety
- Renewable energy
- Sustainable purchasing
- Alternative fuel fleet
- Recycle and re-use
- Ecological
“Basic” Project Development Review

• Subset of criteria for preservation-type projects
  o Small reconstruction projects that do not expand capacity
  o Preservation to extend service life of existing facility and safety
  o Restore pavement structure, ride quality and spot safety

• MnDOT is reviewing four projects
  o TH 53 – rural 4-lane divided concrete
  o TH 23 – urban mill and overlay with curb and gutter, sidewalk replacement, etc.
  o TH 248 – pavement reclamation & bituminous overlay
"Basic" Project Development Criteria

• “Basic” criteria applicable to all projects
  o Cost benefit and lifecycle cost analysis, safety, freight mobility, outreach, tracking environmental commitments, habitat restoration, stormwater, ecological connectivity, recycle and reuse materials, bike and ped access, historical/cultural preservation, low-emitting materials, lighting, ITS, long-life pavement, construction equipment emissions, construction noise, construction quality control

• MnDOT added criteria from the expanded list
  o Energy/emissions in pavement materials,
“Extended” Project Development

• Major projects/expansion
  o New construction projects for a new roadway facility or structure where nothing of its type currently exists
  o Major reconstruction projects that add travel lanes to an existing roadway or bridge

• MnDOT is reviewing two “extended” projects
  o TH 60 Bigelow Bypass – four-lane rural expansion
  o TH 75 two-lane roundabout

• All “basic” criteria, PLUS
  o CSS, renewable energy, vegetation, transit/HOV access, scenic/natural qualities, earthwork balance and construction environmental training
Moving Forward

A programmatic approach to increased sustainability

• Incorporate sustainability into the vision and plans

• Evaluate where and how to increase sustainability across the agency, both for the transportation system and internal business practices

  § Consultant review using FHWA tool complete in June

• Continue research and adoption of best practices
Thank you!

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