Performance Measures for Context Sensitive Solutions – A Guidebook for State DOTs

CSS - A Business Philosophy

- Project designed collaboratively with community and regulatory agency stakeholders
- Fits its physical setting
- Supports community values
- Preserves scenic, historic, aesthetic & other resources
- Maintains safety and mobility

CSS Measurement Challenge

No “best practices” models + Each project is unique + CSS crosses disciplines and phases of project delivery = Tough area to measure!
Why Measure?

• Make CSS state of the practice not state of the art
• Strengthen agency leadership support of CSS principles
• Maintain focus on strategic CSS goals
• Strengthen trust with stakeholders and customers

Framework Concept

Project Level

- Look at Processes
- CSS Performance Measures Framework
- Organization Level
- Look at Outcomes

Project Level

- CSS principles rooted at project level
- Work for one or many projects
- Foster team commitment
- Apply at milestones in project delivery
- Strengthen stakeholder trust
Guiding Concepts for Project Measures

- Collaborative self-assessment
- Integrate measures into project development process as an aid
- Develop tailored consensus-based concepts to measure against
  - Problems and needs for all projects
  - Project vision or goals

Project Level - Key Process Focus Areas

- Use of multi-disciplinary teams
- Public engagement
- Project problems and needs
- Project vision or goals
- Alternatives analysis
- Construction and maintenance

Project Measures – Key Outcome Focus Areas

- Meeting project problems and needs
- Achievement of project vision or goals
- Stakeholder satisfaction
- Quality assurance review
Organizational Level

- Used to assess performance of entire organization
- Fewer in number than project-level measures
- Rely on central reporting of data
- Vital resource for senior management
- Monitored on regular schedule

Organization Measures - Key Process Focus Areas

- Training
- Manuals
- Policies
- Motivation

Organization Measures - Key Outcome Focus Areas

- Environmental stewardship
- Timeframe and budget
- Stakeholder satisfaction
Matrix of CSS Measures

- Performance Measures for Context Sensitive Solutions - A guidebook for State DOTs:
  http://trb.org/publications/nchrp/nchrp_w69.pdf

Case Study Examples

- Cost/Benefit Data
- Performance Measurement
AZ Route 179 Needs Based Implementation Plan

Cost/Benefit
• Save time & $ by involving entire community in planning & design from the beginning
• Single, continuous process using same team throughout

Performance Measures
• Trust restored
• Held up as a model for future local/regional planning processes by ADOT, counties, FHWA, Forest Service

CA Highway 1 Median Barrier

Cost/Benefit
• Slip form technology/innovative design solution installed at less than 1/3 the cost of traditional barrier

Performance Measures
• Reduced potential for cross-median collisions. When struck, little maintenance required
• Members of public interested in residential

CO Berthoud Pass Mountain Access Project-Arapaho NF

Cost/Benefit
• Reduced template of roadway from planned 80 feet to 65 feet. Resulted in $30 million savings + reduced impact to forest

Performance Measures
• Placement of snow storage area/sedimentation basins yielded 90% recovery of winter traction sand - improved water quality
### CO Castlewood Canyon Historic Bridge Project

#### Cost/Benefit
- Use of innovative materials & methods warranted $300,000 federal research funds
- CO saved over $500,000 in rehabing the structure rather than replacing it

#### Performance Measures

### CO I-25 New Pueblo Freeway

#### Cost/Benefit
- Public involvement process developed sense of community & trust and agreement to land acquisition
- Area that had 2 interchanges will now be served by one resulting in $100 million savings

#### Performance Measures
- EIS completed more quickly than average

### WY Yellowstone National Park - Grand Loop Road

#### Cost/Benefit
- Approach to minimizing impacts is saving $.
- Proactive approach by construction staff has yielded $ savings, e.g. during construction personnel eliminated proposed timber crib wall-saved $400,000

#### Performance Measures
- Customer survey of stakeholders and members of the road team, conducted after design contract package is completed and again upon construction completion
IL Prairie Parkway Phase 1
Preliminary Engineering Study

Cost/Benefit
• More thorough evaluation of alternatives at earlier stage than usual yielded higher level of understanding-led to eliminating 1 of 3 initial screening phases and yielded several $100 thousand & 3 months time savings

Performance Measures

NJ Route 31 Section 6E/6F

Cost/Benefit
• Numerous simple, low cost elements had a dramatic effect on aesthetics and functionality of the improvements but none of these features added significant cost to the project

Performance Measures

MN TH 38 Edge of the Wilderness National Scenic Byway

Cost/Benefit
• Collaboration of stakeholders set the stage for cost-effective joint ventures & stewardship
• Cost savings thru spot location flexibility in design solutions
• Reconstruction was advanced by at least 10 years

Performance Measures
### MT Going-to-the-Sun Road Rehabilitation - Glacier NP

**Cost/Benefit**
- IDIQ contract to a single prime contractor will allow cost/savings & quality control
- Polymer injections to stabilize existing road base will avoid removal of existing pavement structure & yield cost savings

**Performance Measures**

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### TN SR 73 Gatlinburg

**Cost/Benefit**

**Performance Measures**
- A measure of success will be the use of the CSS process model on other projects in TN, even those that are underway

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### VA Route 33 Bridge Replacement Project

**Cost/Benefit**
- Widening project: alt. through town was selected - less costly in $ and environmental impact than a bypass
- Project used as springboard to redevelop business

**Performance Measures**
- Increase in sales & property taxes

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<tr>
<th><strong>WA SR 20 Deception Pass State Park - Replacement of Guardrail</strong></th>
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<tr>
<td><strong>Cost/Benefit</strong> <strong>Performance Measures</strong></td>
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<td>• Drivers will be polled—success will be if…drivers feel there is minimal visual change; drivers feel the new system was built in the CCC style; drivers think the stone masonry looks like the original bollards; and if # of severe accidents is reduced</td>
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