PERFORMANCE MEASURES REPORT OUT

2012 SEBPP Conference

Atlanta, GA

Group number: 1	Discussion topic: Preservation Performance

Discussion Highlights (note main discussion items)

- Fl- is tiered for performance measures
- Funding
- Alabama does state structures, and local do their own inspections
- GA- Inspect state and local structures

Notable Practices (Note practices, strategies, policies, products, etc that are working well)

- Tier performance
- Quality control and assessment

Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

- Guidelines to develop QA
- Guidelines to develop performance measures for preservation

Group number: Table 2	Discussion topic: Preservation Performance Measures

Discussion Highlights (note main discussion items)

- How do you track cost, effectively, of maintenance cost? Need to be able to track cost at all times as it relates to a particular asset or function of that asset
- Bridge Management Systems – Pontis, Deighton, AgileAssets
- What are your performance measures?
- In order to compete with construction costs, you need to track asset management costs
- Need to be able to manipulate the Health Index of a structure to make informed decisions
- How do you consider a structure a good structure?
- What kind of return are we getting on our investment – should be seen in added years to service life?
- May be helpful to track the rate of change in conditions for the structure
- While establishing performance measures, be careful of making decisions based on cumulative indices such as health index

Notable Practices (Note practices, strategies, policies, products, etc that are working well)

- A bridge is considered good based on the individual states definition
- DOTs present use NBI Standards for rating bridges
- By doing corridor PM/rehab, there is a better return on investment than there is if spread out over multiple corridors

Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

- Need to establish performance goals
- Return on Investment needs to be a consideration in decision making

Group number: 3	Discussion topic: Preservation Performance Managers

Discussion Highlights (note main discussion items)

1 (top) - Creating well-defined goals and roles based on identified areas of interest

- Example from NCDOT – in pavement division 10% of inventory is "touched" every year, implement a similar percentage for bridge inventory
- Utilizing a risk-based approach to preservation and maintenance, but also for inspections
- Other countries – stagger inspections moreso based on age and condition
- Risk criteria – traffic volumes, detour route, age, consequence of failure, probability of failure

2 (top) – Incorporating performance measures into funding decisions

- Use a bridge management system to show lots of different reports using the same data – targeted to executive management, maintenance personnel, and other roles
- Use data to generate reports which represent funding needs in clearly defined ways (compete against other areas such as pavement)
- Utilize trade-off analysis when possible

3(top) – Employing best tools and approaches to help improve ROI

- Create clear regional specifications and share them
- Clearly decide upon and outline the data that is needed
- Mining of data – establish best practices
- Keep detailed documentation of all maintenance activities
- Quantify problems using innovative methods (NDT, lab testing) and identify life extension when necessary

8 (bottom) – Prioritizing bridge projects and scheduling the work, timeframes to ensure work is completed

- Strong feeling that traffic counts are the most important, but don't ignore the detour route
- Rural farm bridges so often at the bottom of the list – what is the detour?
- Utilize a corridor approach to repairs – traffic control is expensive – do as much as possible while the lane is closed – have a software notification system to help provide alerts

Notable Practices (Note practices, strategies, policies, products, etc that are working well)

- Corps of Engineers testing the amount of reinforcement steel and it's condition at a given time
- NCDOT has a FHWA bridge preservation agreement
- Performance measures are enforced in relationship with performance evaluations for personnel in an effort to offer more transparency (NCDOT)

Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

- Effective data presentation is key to incorporate performance measures into funding decisions
- Have regional approaches to help employ the best tools and practices to help return on investments
- Somehow quantify the effectiveness of preservation measures on a given structure
- Use funding for bridge preservation versus bridge maintenance
- Prioritization of bridge projects should be concentrated in areas of higher traffic counts. Generate a formula incorporating available data to help establish a list of priority structures.
- As we develop long range goals, short term goals should follow suit
- Look at developing a formula that is easily attainable from existing data – weigh the different risk factors and have separate formulas for preservation, maintenance, replacement, other decisions. Take regional factors into account.

Group number: Table 4 and 5	Discussion topic: Bridge Preservation

Discussion Highlights (note main discussion items)

- **Determination of bridge condition**
- **What determines bridge replacements? Structurally deficient or structurally obsolete (ADT, elements, or NBI codes)**

Notable Practices (Note practices, strategies, policies, products, etc that are working well)

- **Well documented inspection and maintenance data**

Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

- **Coding system for different types of bridges for replacement or rehab. (color coded)**
- **Life cycle cost for bridges**
- **Designate money for fire bridges versus non-fire bridges**
- **Decision tree for every structure**
- **Regular maintenance schedule or evaluation for each bridge**
- **The "abandoned" bridge. When do you stop "preserving" a bridge and look at replacement**
- **Can scour repair be listed as bridge preservation?**

Group number: Table 6	Discussion topic: Preservation Performance Measures

Discussion Highlights (note main discussion items)

- **Overlays**
- **Joints**
- **Condition Codes**

Notable Practices (Note practices, strategies, policies, products, etc that are working well)

- **Try using infer red images**
- **Removing joint areas / Porto Rico /No Movement**

Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

- **Using more qualified contractors instead of only lowest bid.**
- **Using a QTL and QA that performance measures meets agency qualifications.**
- **Have a website to exchange policies and procedures.**
- **Have separate training for inspectors verses new construction.**

Group number: 7	Discussion topic: Preservation Performance Measures

Discussion Highlights (note main discussion items)

Well defined goals & roles

Funding decisions

Help improve return on investment

Short and long range objectives

Criteria for selecting bridge projects

Quality assurance review for districts/counties

Notable Practices (Note practices, strategies, policies, products, etc that are working well)

- **Condition ratings**
- **Performance ratings**
- **Using in house maintenance crews**
- **States that don't inspect the county structures do quality assurance reviews**

Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

Help improve funding decisions

Need better bridge management system

Need a nationwide tracking system showing what type of preservation repairs are working or not working and which is best cost effective for return of service of structures.

Group number: Table 8	

Discussion Highlights (note main discussion items)

- **Performance measures:**
  SC- 3 main measures: User benefits vs Funds expent
  User costs of: Bridges that are restricted/closed, structurally def./not closed
  Benefit measures:
  FHWA=Still in Development
  Criteria for Bridges in Good Condition:
  Incorporation of funding decisions based upon bridge ratings

Notable Practices (Note practices, strategies, policies, products, etc that are working well)

VA Performance Goal: No more than 8% of Bridges=Structurally Def.
VA Categories=Poor, Fair, Good
SC= 6 or greater for all 3 categories on the NBI
SC=projects picked based upon district input
SC=Maintenance funding Approach=match fed funds first, agreement with local FHWA office
VA=agreement with FHWA for some measures
SC=utilizes "on call" contractors for deck work, w/pre-determined unit pricing
Use defined work scope on projects to do only what is needed

Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

- **If states could agree to regional performance measures it would be very useful**

Group number: 9/12	Discussion topic: Preservation Performance Measures

Discussion Highlights (note main discussion items)

Report Condition of Bridges
State Legal Weights
Standards for Weight Restrictions
No Posted State Routes
Bridge Level Decisions
Deficiency Ratings for Deck, Superstructure & Substructure
Health index
Criteria for bridge condition
How Projects are selected
15,000,000 per year for bride preservation
Projects based on condition of main components
Short Term or Long Term Plans

Notable Practices (Note practices, strategies, policies, products, etc that are working well)

Dedicated of Funding for Bridge Repairs
Deck condition measure – (NBI Data)
Strength measure – (Load Rating)
Track A & B Priorities
Network (Route Segment) Performance measures

Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

Guideline for measuring return on investment
Standardize nationwide health index measure

Group number: Table 10	Discussion topic: Preservation Performance Measures

Discussion Highlights (note main discussion items)

- Setting up a program/ Adjusting the program (Wish List)
- 1) Dedicated funding source
- 2) Planed Program
- A) preservation activities
- B) prioritize work
- 1) reactive activities
- 2) proactive activities
- C) Measure activities
- 1) Quality of work
- 2) Cost of work
- 3) Time limits
- 4) results achieved
- 3) Develop deterioration models for your state
- A) based upon historical data (pontis)
- B) use deterioration models to help plan repairs and maintenance models
- C) use data to develop and refine preservation programs
- 4) re-evaluate preservation program
- 5) Refine preservation program

Notable Practices (Note practices, strategies, policies, products, etc that are working well)

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Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

- Proposed Action
- 1) Support from Legislature and Governor support for preservation plan
- 2) Secure dedicated funding (State)
- 3) FHWA provides support for standardized preservation practices
- (taking into account regional differences --- Regional offices take the lead)

Group number: 11	Discussion topic: Preservation Performance Measures

Discussion Highlights (note main discussion items)

- Performance measures – global measures vs. measuring effectiveness of specific preservation actions.
- Preservation goals / performance measures
- Establishing short and long term goal.
- Availability and ease of access to data to support performance measures.
  - Condition data
  - Actions completed
  - Cost data
- Incorporating functional issues in preservation decision making.
- Addressing different preservation needs in combined projects/programs.

Notable Practices (Note practices, strategies, policies, products, etc that are working well)

- Element condition state data for use in determining which bridges to evaluate for preservation needs

Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

- Developing a system that can merge data from multiple systems/sources to support performance measures.
  - Condition data
  - Actions completed
  - Cost data
- Guidelines to assist DOTs in implementing preservation performance measures
  - Identifying practical, effective performance measures
  - Establishing practical, reachable goals
  - Estimating necessary resources:
    - Preservation funds
    - Staffing and processes necessary to:
    - Calculate performance measures
    - Implement preservation projects
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Group number: Table 13	Discussion topic: Preservation Performance Measures

Discussion Highlights (note main discussion items)

- Tools required to implement a bridge preservation program
- Discount factors
- Substructure
- Superstructure
- Deck
- Politics of funding
- Underwater repairs
- Asset management
- Research needs
- Galvanize

Notable Practices (Note practices, strategies, policies, products, etc that are working well)

- Encasements / Protective coatings
- Scour critical (Action plans)
- Rip rap
- Preservation / rehab / Replacement
- Asset management

Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

- Bridge life of like structures and exposure conditions data analyzes
- Documentation of life history with treatment measures and all maintenance activities to include materials used
- A minimum percentage of federal funding dedicated towards preservation
- Awareness education of new products available for preservation

Group number: Table 14	Discussion topic: Preservation Management

Discussion Highlights (note main discussion items)

- Be careful in selecting performance measures – may cause influences that are undesirable (Critical)
- General public to legislators should be able to understand the grading system Compare apples to apples.
- What preservation threshold compared to maintenance or Rehab.
- Common performance measures Nationwide.
- Budget availability to preserve bridges.
- Everyone should have a standard Performance Measure (Common Guidelines)
- Everyone involved should have same terminology.
- What is the term of my investment.
- Select performance measures that don't cause overreaction.
- Public Perception of our bridges.
- Manage public expectations
- Develop performance measures to be consistent.
- Granularity of performance measures
- New federal regulations regarding performance measures linked to funding allocations
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Notable Practices (Note practices, strategies, policies, products, etc that are working well)

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Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

- How do we handle the competing needs of performance measures?
- Have the States develop performance measure for the national level.
- Develop procedures to manage public expectations of performance measures
- Ability to convert performance measures to levels that are understandable

Group number: Table 15	Discussion topic: Preservation Performance

Discussion Highlights (note main discussion items)

- **Data Needs**
- **State vs. Local bridges**
- **Condition state vs. health index**
- **Balancing data driven and regional considerations in project selection**

Notable Practices (Note practices, strategies, policies, products, etc that are working well)

- **Georgia has a link between BMS and MMS systems so work can be tracked**

Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

- **Developing meaningful and economic data needs**
- **Do we need to develop separate performance measures for state and local bridge inventory**
- **Considering maintenance history when making repair vs. replacement decisions**
- **Incorporating life cycle costs in bridge design type selection**