

Domestic Scan 07-05

# Best Practices in Bridge Management Decision-Making

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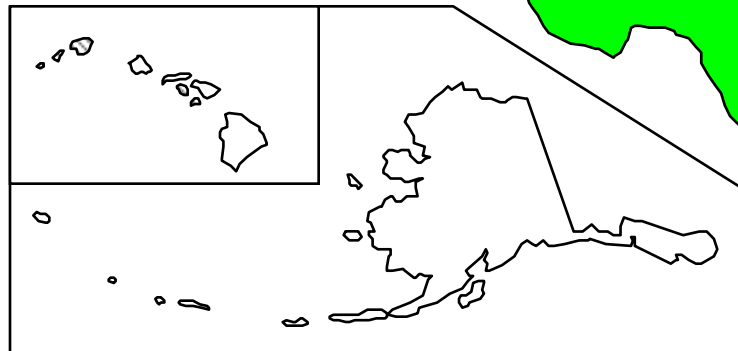
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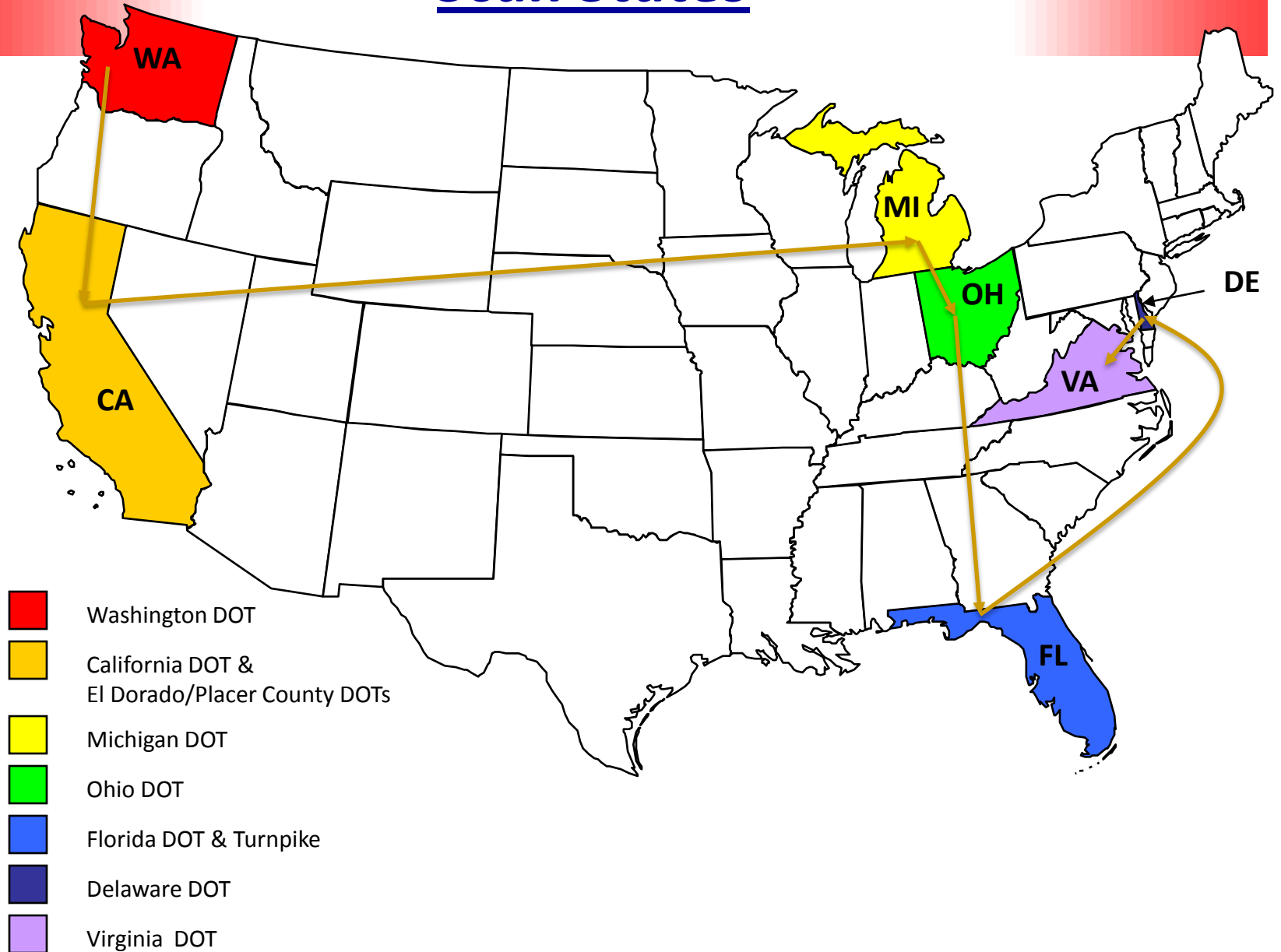


Academia

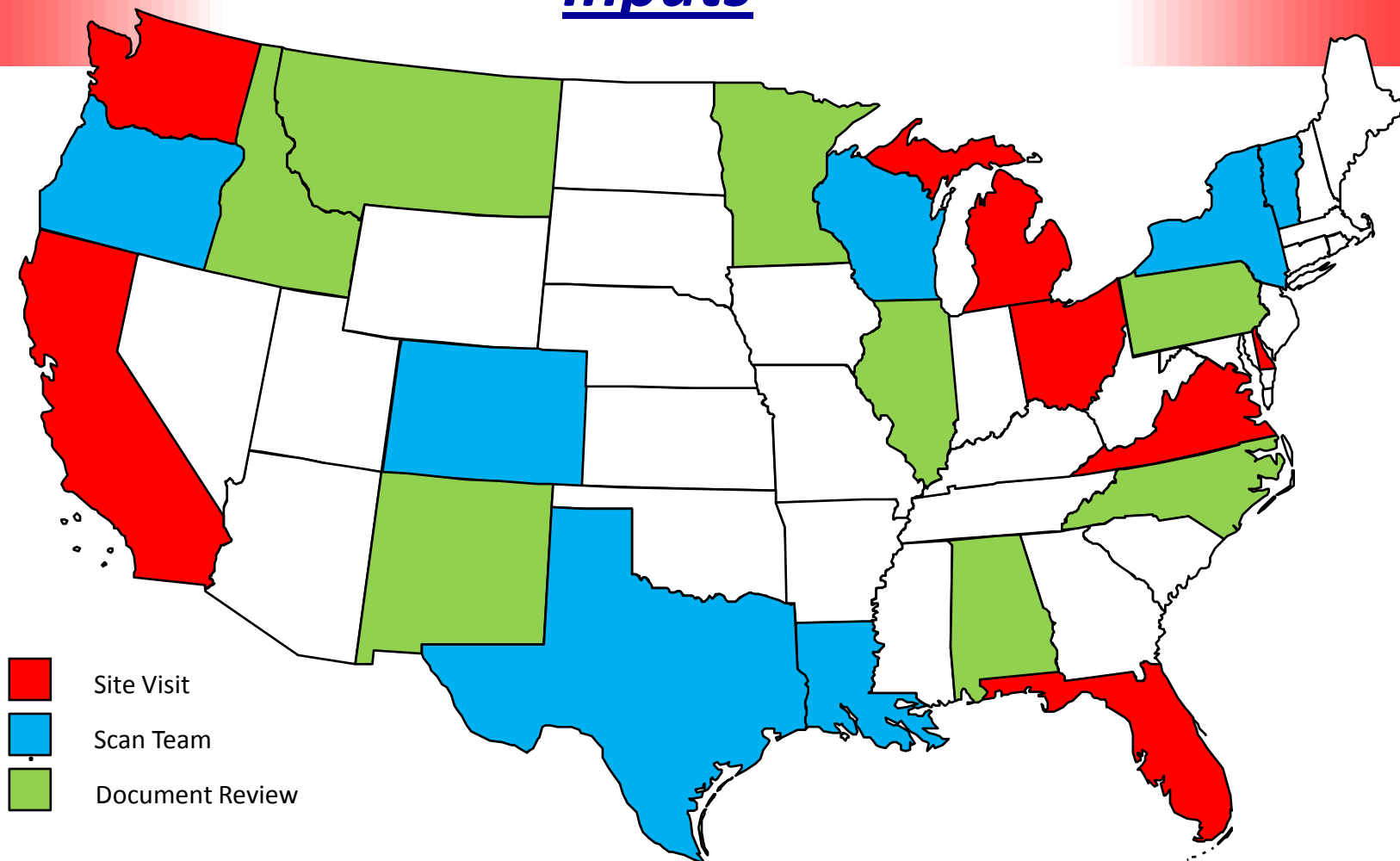


Consultant

# Scan States



# Inputs



# Purpose

**Discover** and collect information on how DOTs manage maintenance of highway bridges and how maintenance impacts the overall bridge program

**Focus** on decision processes for maintenance programs;

How Do Decisions Rely On:

- Bridge Conditions
- Maintenance Needs
- Effectiveness of Maintenance
- Funding Availability



California

# **Recommendations**

**Preventive Maintenance**

**Bridge Management Process**

**Agency Support**



*Florida*

# **Recommendations**

## **Preventive Maintenance**

## **Bridge Management Process**

- ***Maintenance Needs***
- ***Performance Measures***
- ***Prioritization***
- ***Verification***

## **Agency Support**



**Michigan**

# **Preventive Maintenance**

- ***Significant part of program***
- ***Applied before bridges become deficient***
- ***Implements clear plans of action***
- ***Flexible allocation of resources***



***Washington***



# **Bridge Management Process**

## **Maintenance Needs**

- ***Uniform, specific and repeatable***
- ***Identified at the bridge element level***
- ***Stated as standard work actions***
- ***Accessible throughout the agency***

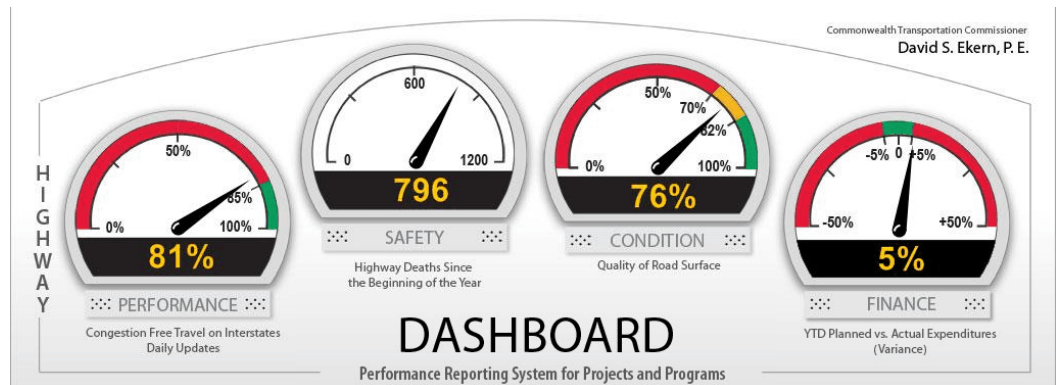


***California***

# Bridge Management Process

## Performance Measures

- *Match objectives in bridge maintenance*
- *Identify work to advance maintenance objectives*
- *Provide simple indications of status of bridge networks*

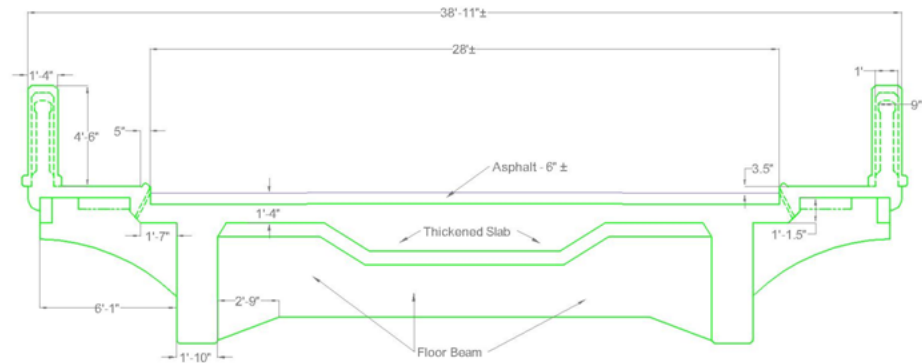


Virginia

# **Bridge Management Process**

## **Prioritization**

- ***Integrate objectives for deficiencies, preventive maintenance, network performance, and risk***
- ***Engage both central and regional DOT offices***
- ***Advance from network-level rankings to selection of specific projects***



**Florida**

# **Bridge Management Process**

## **Verification**

- ***Maintenance work completed***
- ***Conditions improved, Risk reduced, or PM met***
- ***Report to BMS, MMS, Capital Program, ...***



***Michigan***

# **Agency Support**

## **All levels**

- **Inspectors:** *Identify needs, Recommend actions, Verify completion*
- **Crews:** *Execute work, Take initiative*
- **District Engineers:** *Evaluate needs and trends, Seek funds and projects*
- **DOT Central:** *Use quantitative performance measures, Recognize districts' first-hand knowledge*
- **DOT Executives:** *Maintenance is not a episodic. Maintenance is continuing support*

# Implementation

## FHWA

- *Demo project of best practices*
- *Guidelines Re: Preventive Maintenance*
- *Policy on required maintenance for Federal-Aid projects*
- *Webinar on scan findings & DOT case studies*

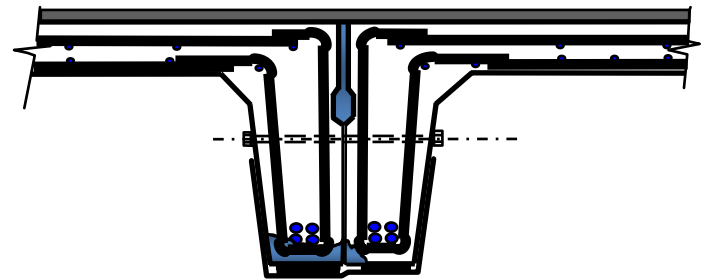


Michigan

# Implementation

## Web Repository

- *Repair techniques for skills training*
- *Spreadsheets & applications from scan*
- *Information exchange on bridge maintenance techniques, decisions, and actions*



Washington

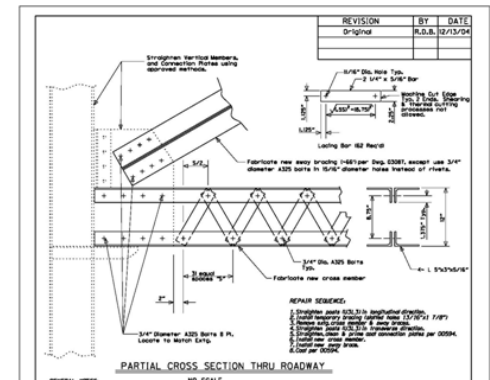
## Implementation

**Pontis**

## *Use inspectors' recommendations in project formation*

**NCHRP**

***Set-aside for bridge maintenance and preservation***



## Oregon



# Implementation

## NCHRP Syntheses (proposed)

- *Cost-effective maintenance contracting*
- *Optimal performance measures for bridge preventive maintenance*
- *Identification, prioritization, and monitoring of bridge management decisions and actions*



Michigan

# Implementation

## NHI:

- *Cross training of maintenance and inspection technicians*
- *Bridge Safety Inspection Course: Addition on maintenance needs*



Florida

# Implementation

## Scan Documents

- *Scan final report*
- *AASHTO, TRB presentations*
- *Articles in Public Roads, Roads and Bridges, Bridge Design & Engineering, . . .*



Virginia

# *Timeline*

***Scan Travel  
Scan Report  
Implementation***

***June 2009  
November 2009  
Summer 2009  
& beyond***

