

AASHTOWare Bridge Management Update



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AASHTOWare Bridge Task Force Chairman





AASHTOWare Bridge Management

www.AASHTOWareBridge.com



AASHTOWare Bridge

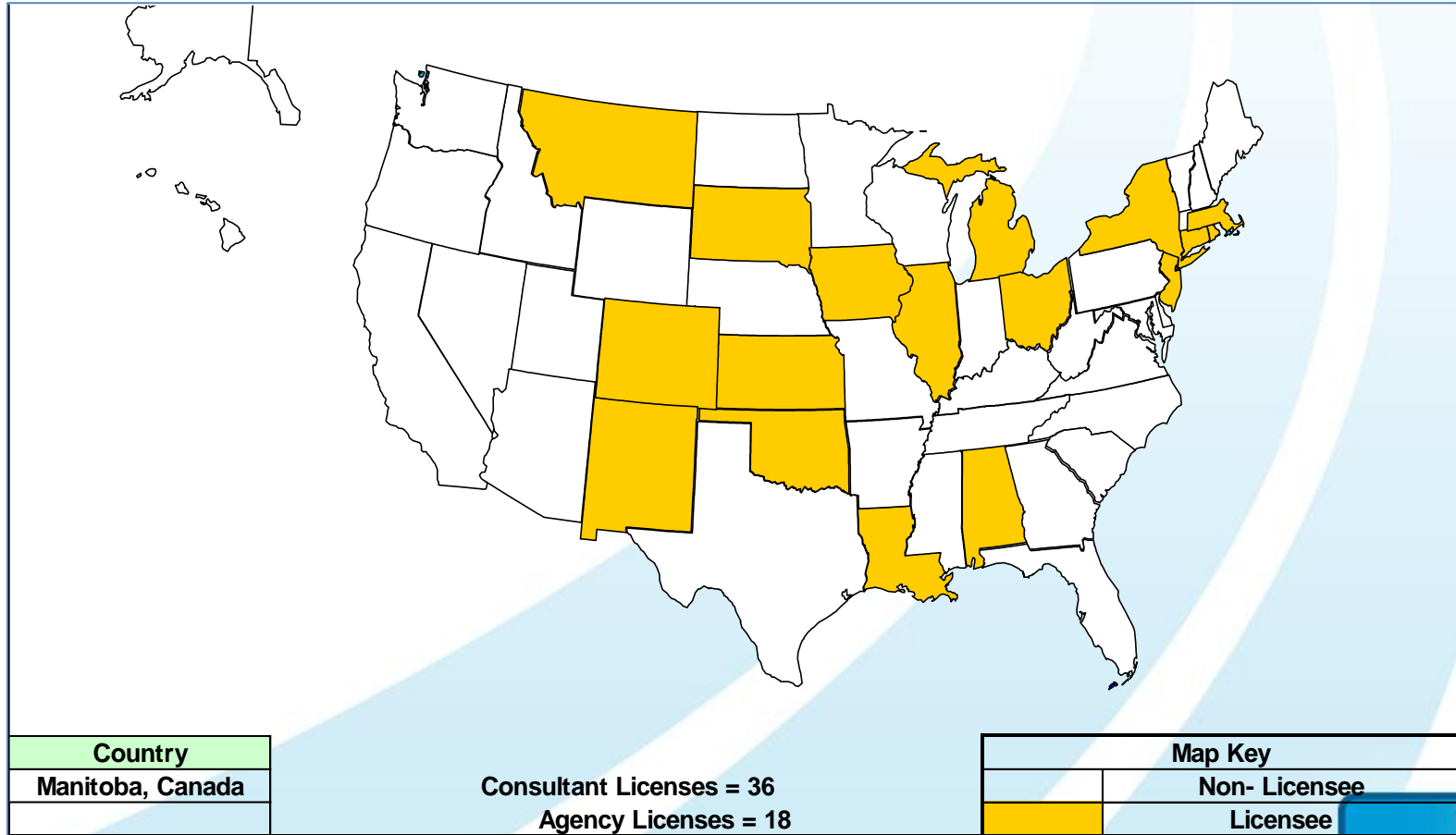
- Bridge Rating
- Bridge Design
- Bridge Management

- Software is owned by the states and it's a cooperative development effort



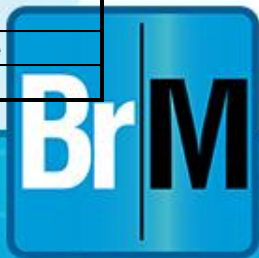
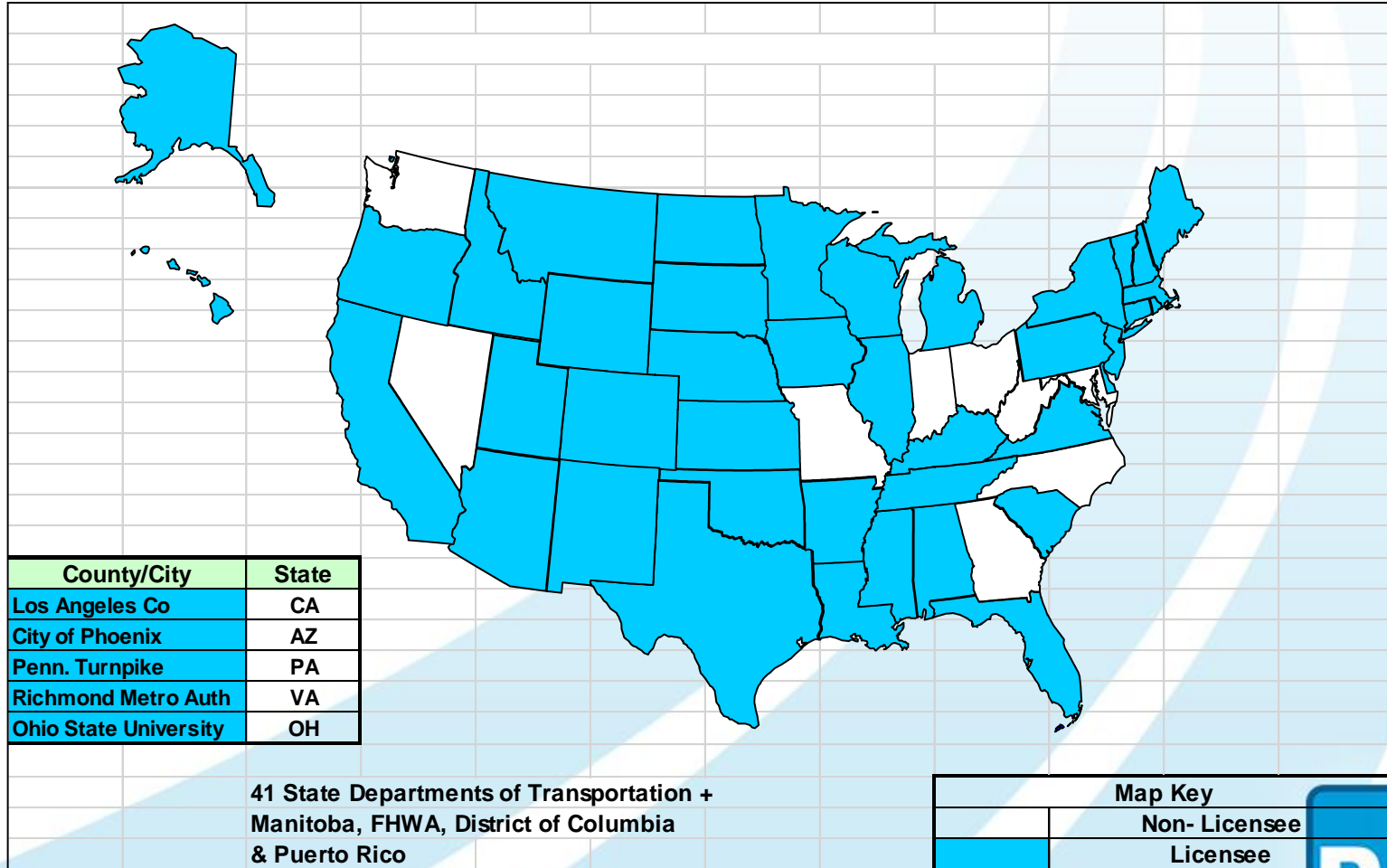
AASHTOWare Bridge Design

Current Participation

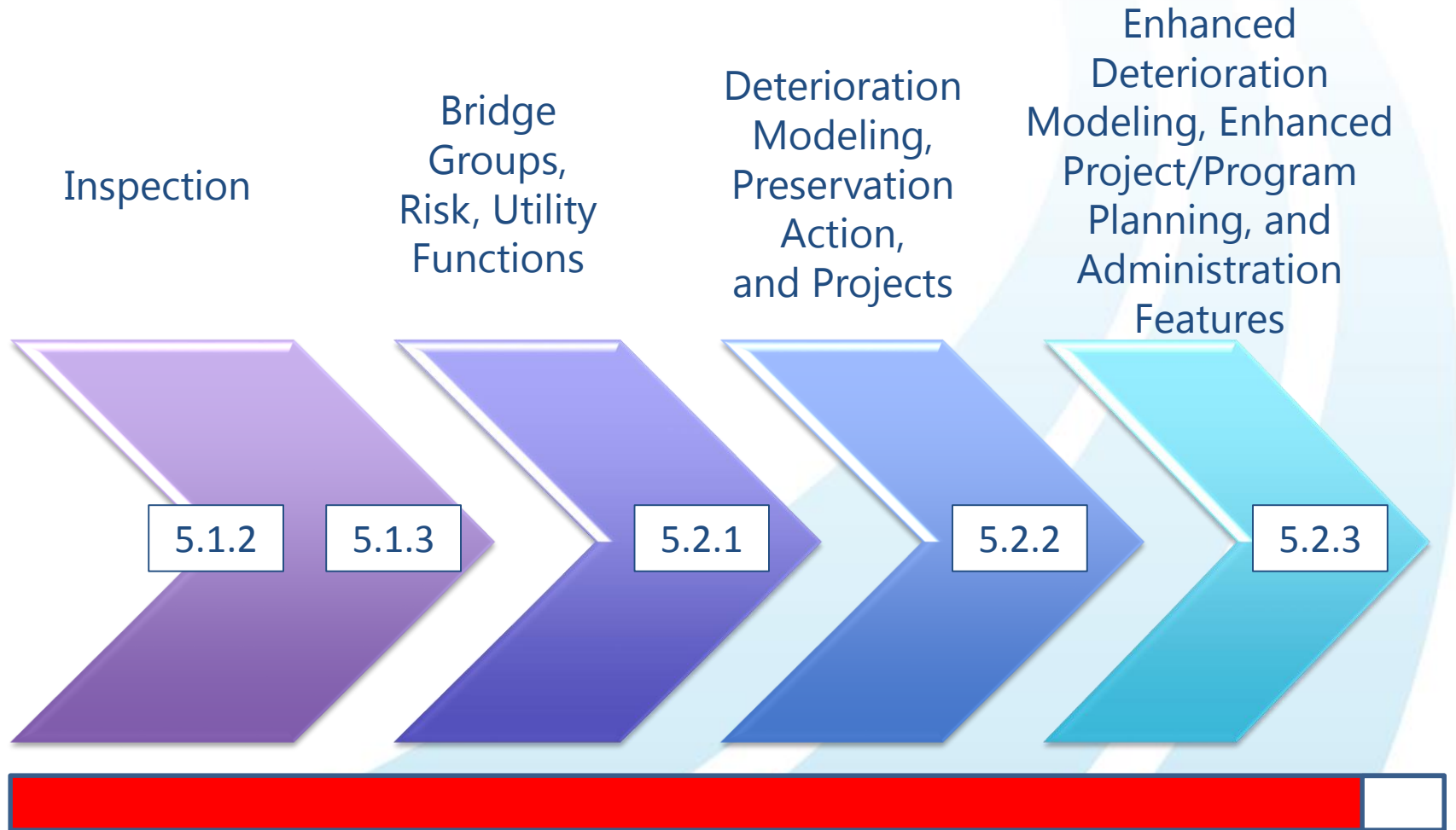


AASHTOWare Bridge Management

Current Participation



Bridge Management 5.2 Stages



Bridge Management 5.2 Stages

- Development on 5.2 is rapidly moving towards completion with coordinated efforts between the Task Force, TRT, and Contractor
- Phased releases
 - Version 5.1.2/5.1.3 (Mar 2012 / May 2013)
 - New inspection and inventory functionality, integration with mapping
 - Version 5.2.1 (Feb 2014)
 - Core program framework, risk assessments, integrated utility functions, network corridors
 - Version 5.2.2 (October 2015)
 - Implementation of new deterioration models and multi-objective analysis
 - Version 5.2.3 (Planned late 2016)
 - Enhancements to Deterioration Modeling
 - Integrated project and program planning
 - All administrative features



MAP-21

Upon final delivery of the AASHTOWare Bridge Management 5.2 software, the software will fulfill all MAP-21 requirements:

1. Collecting, processing, storing, and updating inventory and condition data for all NHS bridge and pavement assets;
Currently supported for bridges.
2. Forecasting deterioration for all NHS bridge (and pavement) assets;
In BrM 5.2.3 we will have full implementation for all (NHS) bridges.
3. Determining the life-cycle benefit-cost analysis of alternative strategies (including a no action decision) for managing the condition of all NHS bridge and pavement assets;
Currently partially supported in BrM 5.2.2 for bridges, and will be fully supported in BrM 5.2.3.



MAP-21 (Cont'd)

4. Identifying short- and long-term budget needs for managing the condition of all NHS bridge and pavement assets;
Will be fully supported in BrM 5.2.3.
5. Determining the optimal strategies for identifying potential projects for managing pavements and bridges; and
Will be supported in BrM 5.2.3 for bridges.
6. Recommending programs and implementation schedules to manage the condition of all Interstate highway pavements, non-Interstate NHS highway pavements, and NHS bridge assets within policy and budget constraints.
Will be supported in BrM 5.2.3 for bridges.



Bridge Management 5.2.2

- Released in November 2015
- Key Features
 - Deterioration Modeling including Weibull shaping parameters and protection factors for protective elements
 - Project Planning and Analysis Module
 - Conversion of the database from Metric to U.S. Customary units
 - New Inspection Process to better handle inspection dates and data for the NBI submittal
 - Application Programming Interface (API)
 - Database GUID conversion

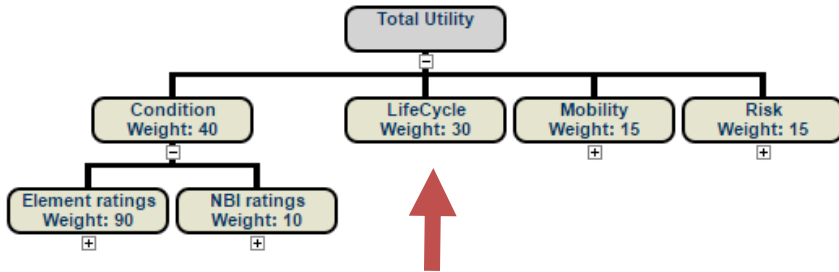


Bridge Management 5.2.3

- Currently in Beta Testing & Planned Release in Fall 2016
- Fully supporting the FHWA (Proposed) Rule Making
- Key Features
 - Capability to perform life cycle cost analysis
 - Capability to perform network level analysis
 - Tracking and reporting of FHWA's 23 metrics
 - Dashboards for easy data visualization and tracking performance measures
 - Enhanced User Help System
 - Tunnels module to record and track National Tunnel Inventory data as required by FHWA



Components



Total Utility -


No editable details to display.



Programs > Performance Measures

Select Performance Measures

Performance Measures	Best Value	Worst Value		
Utility (Scour - Bentley Test)	100.00	0.00		
Health Index	100.00	0.00		
Pct. Good/Fair (Surface-Based)	100.00	0.00		

 Add new record

Performance Constraints by Segment

Segment	Utility (Scour - Bentley Test)	Health Index	Pct. Good/Fair (Surface-Based)
Division 1, 1 On the NHS	Min: <input type="text"/> Target: <input type="text"/>	Min: <input type="text" value="50"/> Target: <input type="text" value="80"/>	Target: <input type="text" value="90"/>
Division 3, 1 On the NHS	Min: <input type="text"/> Target: <input type="text"/>	Min: <input type="text" value="50"/> Target: <input type="text" value="75"/>	Target: <input type="text" value="80"/>
Division 1, 0 Not on NHS	Min: <input type="text"/> Target: <input type="text"/>	Min: <input type="text" value="50"/> Target: <input type="text" value="80"/>	Target: <input type="text" value="85"/>
Division 10, 1 On the NHS	Min: <input type="text"/> Target: <input type="text"/>	Min: <input type="text" value="50"/> Target: <input type="text" value="75"/>	Target: <input type="text" value="80"/>
Division 3, 0 Not on NHS	Min: <input type="text"/> Target: <input type="text"/>	Min: <input type="text" value="50"/> Target: <input type="text" value="80"/>	Target: <input type="text" value="90"/>
Division 10, 0 Not on NHS	Min: <input type="text"/> Target: <input type="text"/>	Min: <input type="text" value="50"/> Target: <input type="text" value="75"/>	Target: <input type="text" value="80"/>

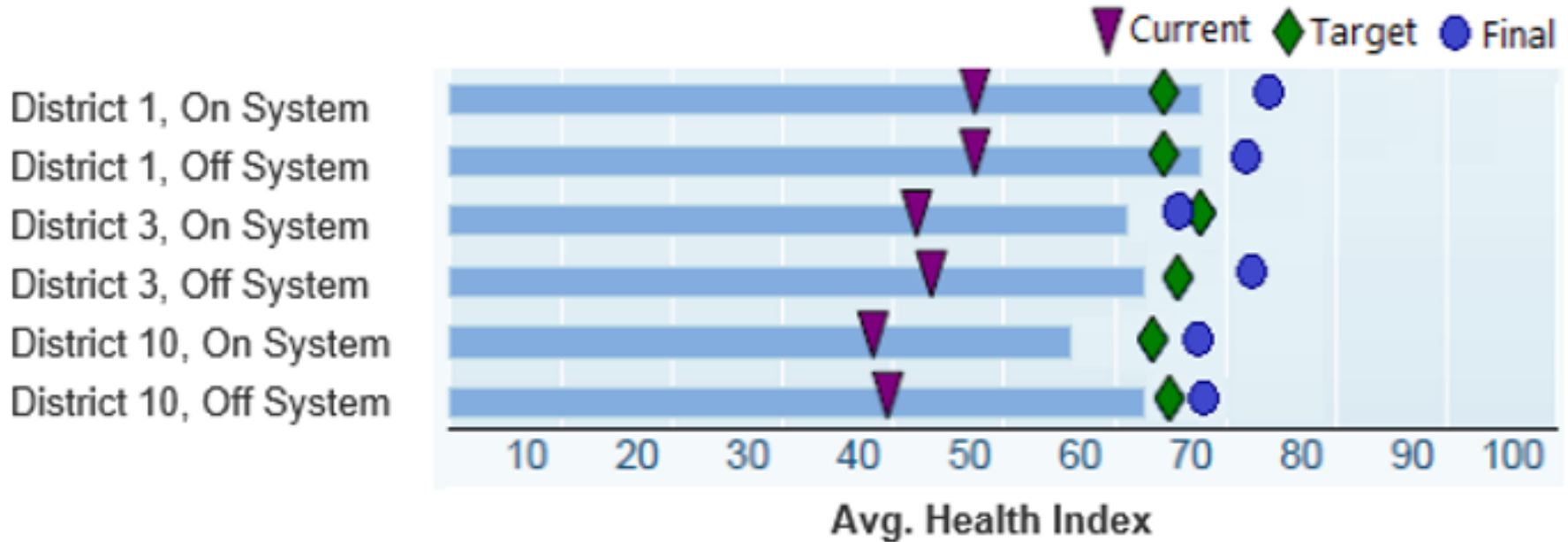
Program Optimization

Print Export

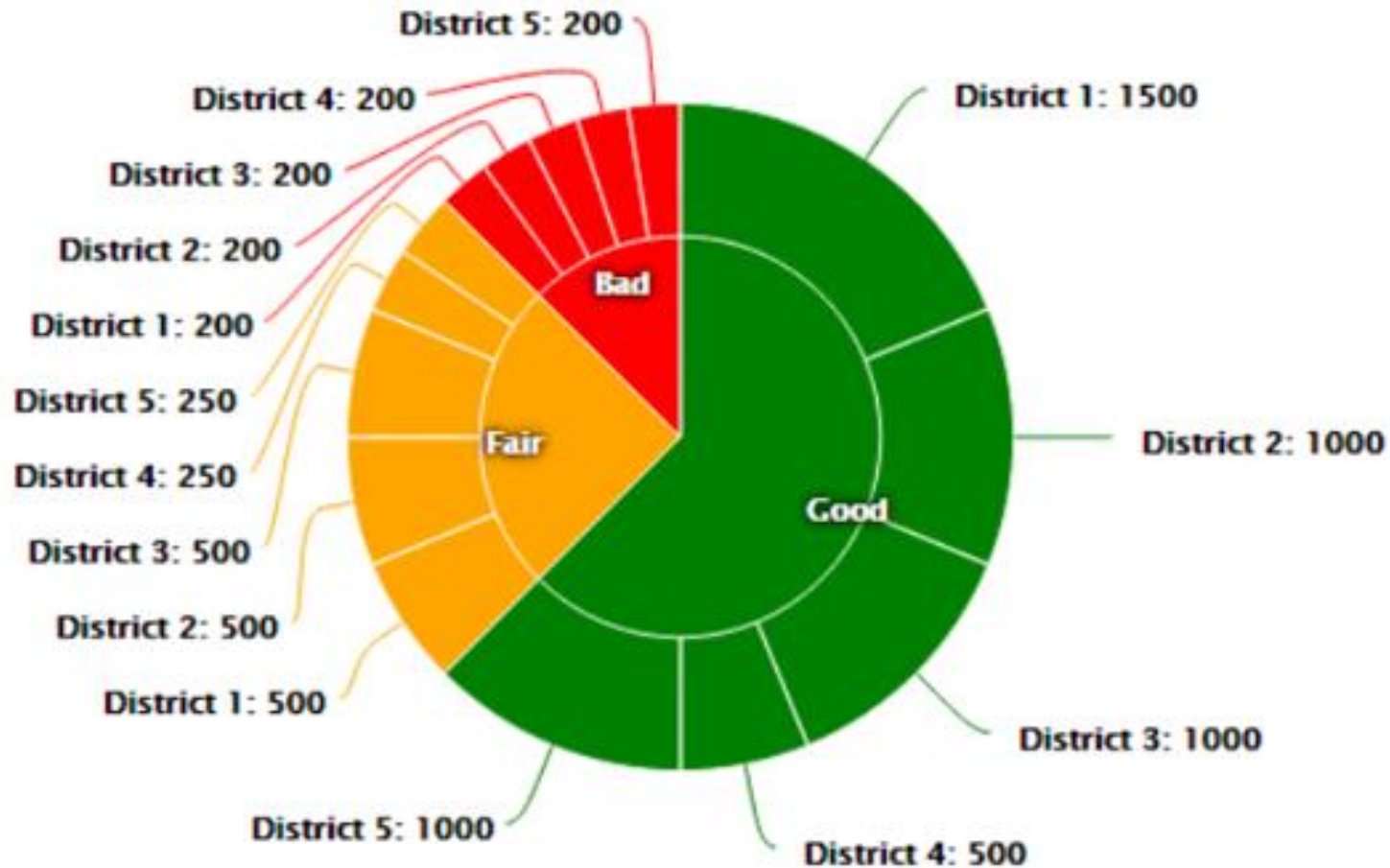
Future Performance by Segment

Performance : Avg. Health Inde: ▾

Year: 2017 ▾



Program Optimization



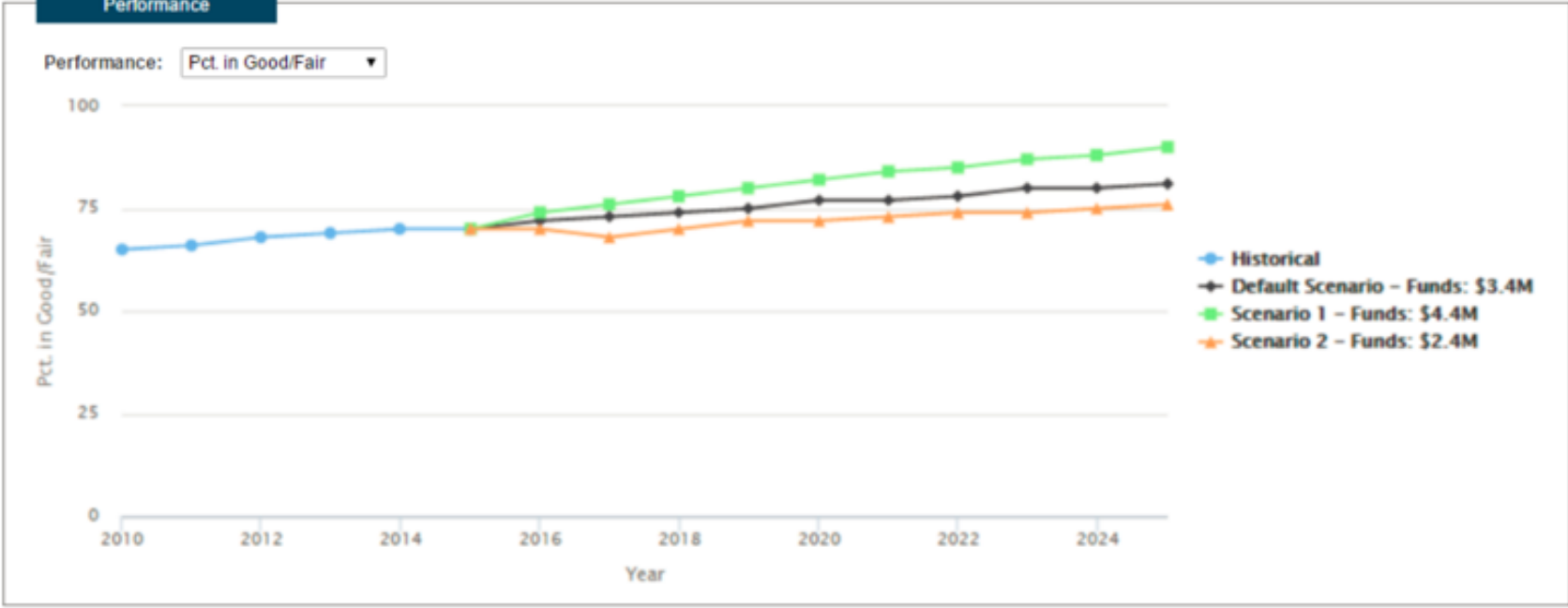
Print Export

Compare by Scenario

Program: Preservation Progra Segment: All

Performance

Performance: Pct. in Good/Fair

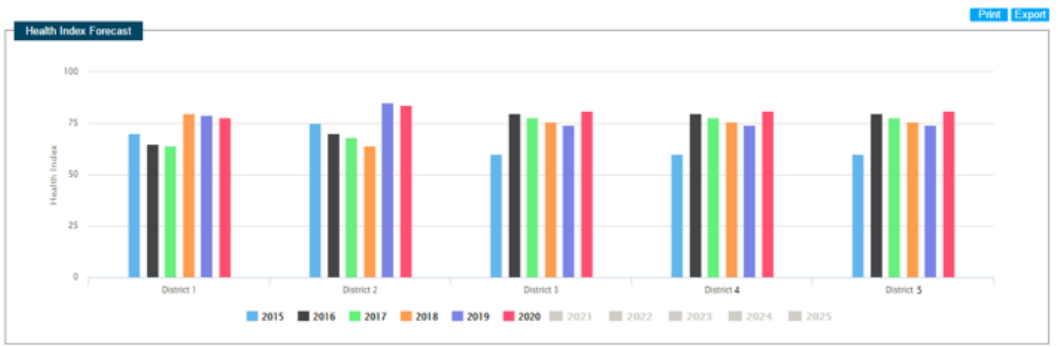
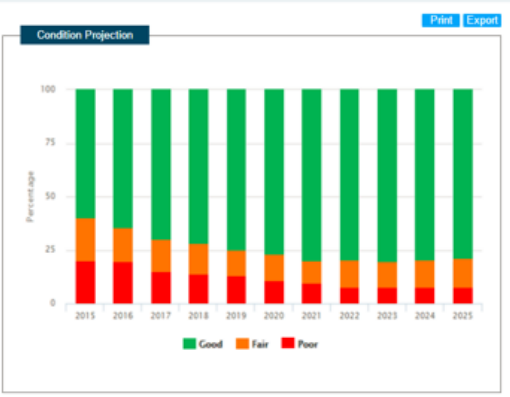
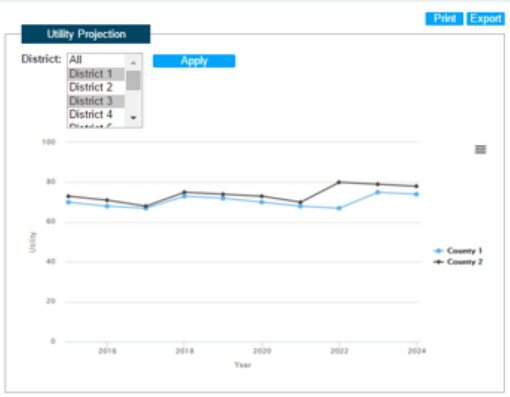
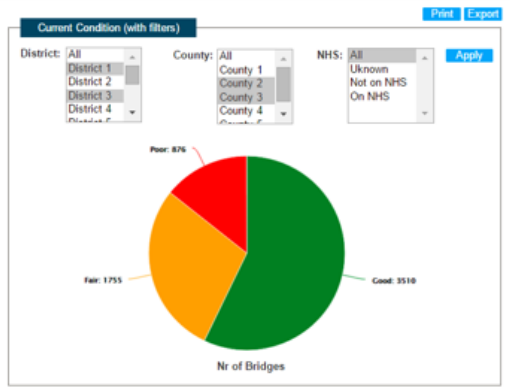
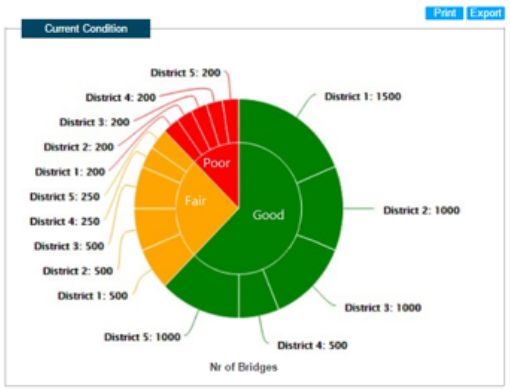




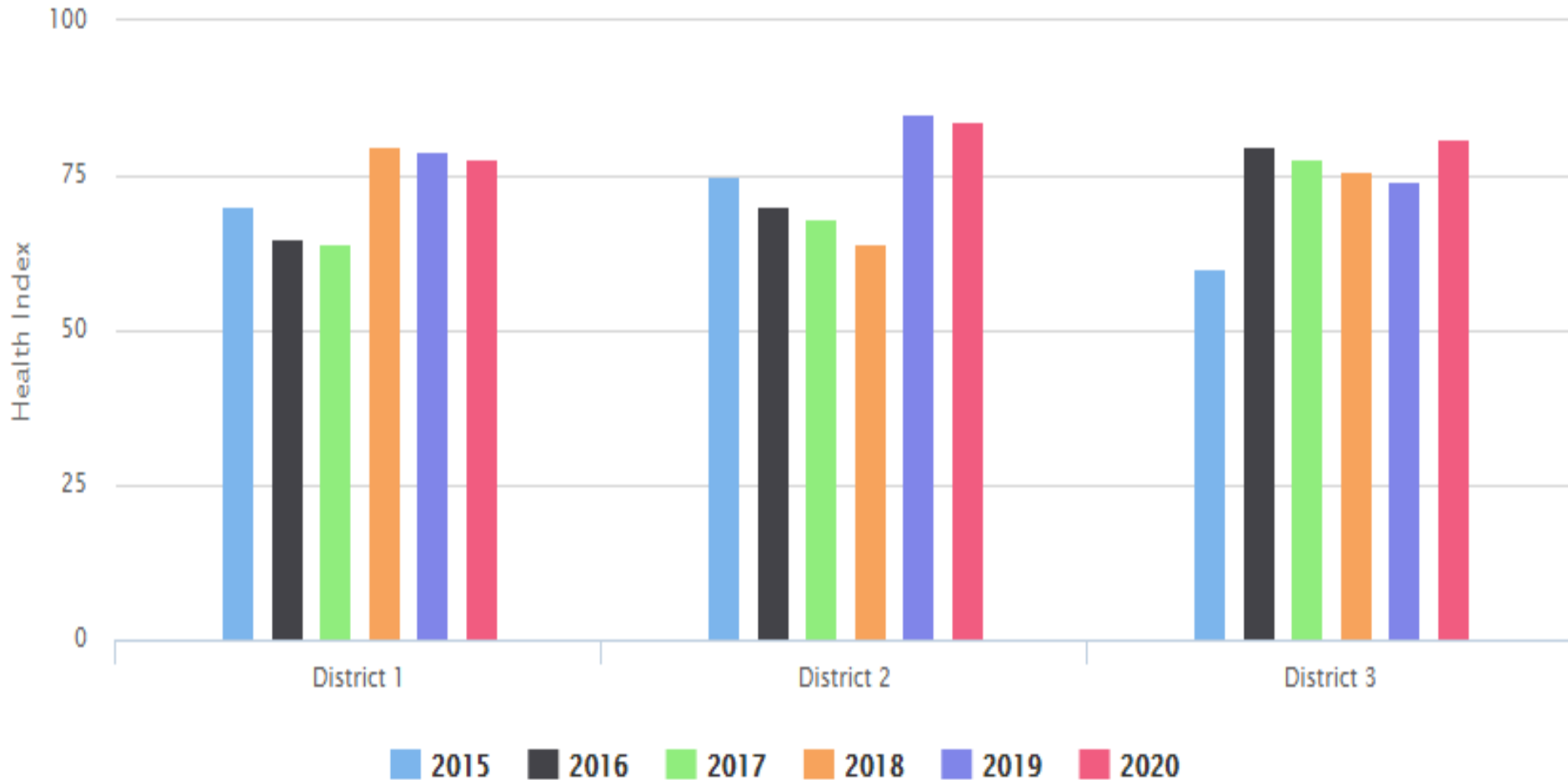
Program Results

Performance Measures | Funding Allocation | Program Planning | Program Results | Executive Summary

- BRIDGES
- REPORTS
- ADMIN
- INSPECTION
- GATEWAY
- ANALYSIS
- PROJECTS
- PROGRAMS
 - Program List
 - Create/Edit Program
 - Performance Measure
 - Funding Allocation
 - Program Planning
 - Program Results
 - Executive Summary
- SCENARIOS

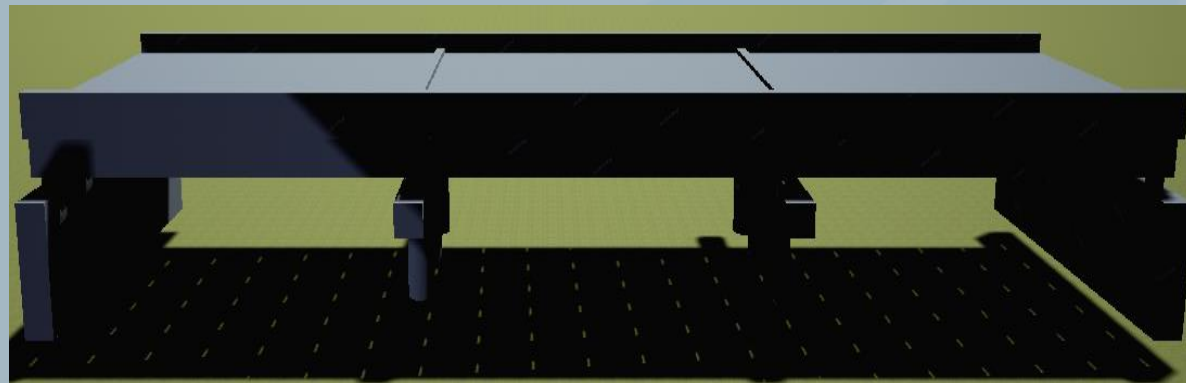


Program Optimization



MDOT's 3DBridge Tool

- A tablet application for MDOT Bridge Inspectors for the collection, display, and summarizing of Bridge Inspection Data
- Currently in final development with Colin Brooks from the Michigan Tech Research Institute



MDOT's 3DBridge Tool

Helps MDOT take advantage of the advances in portable data entry technologies, reduce the need for field staff time to collect inspection data and improve quality



MDOT's 3D Bridge Tool

Select Bridge from Queue. Server queries database, generates Bridge Model XML Document, and passes to Server

Select A Bridge To Load <input checked="" type="checkbox"/>	
M-14 - Curtis Road	Please Select A Bridge
M-14 WB - Maple Road	
M-99 NB - Grand River	Download XML
M-99 SB - Grand River	Downloaded: N/A
Bridge Street - Grand River	Load

Level: Minimal_Default (Persistent)

MDOT's 3D Bridge Tool



MDOT's 3D Bridge Tool

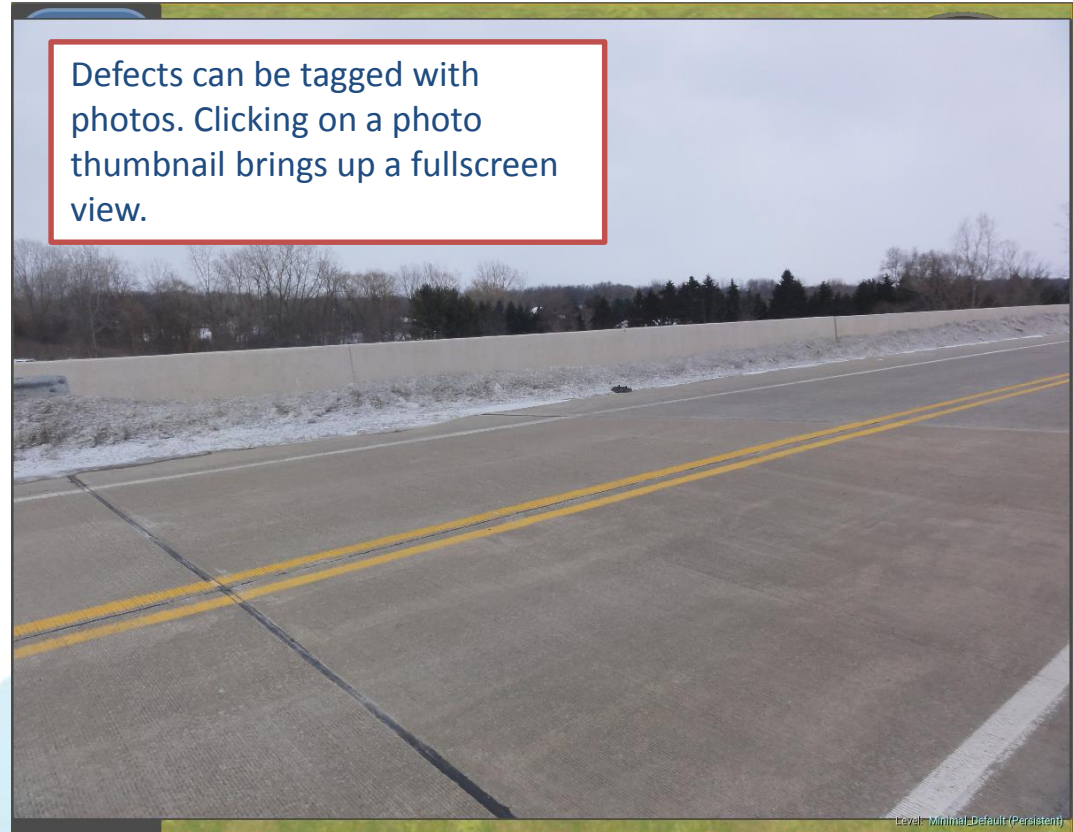
The screenshot displays the MDOT's 3D Bridge Tool interface. On the left, there is a vertical sidebar with three icons: 'Load Bridge' (a bridge), 'Summary' (a checklist), and 'Settings' (a gear). The main area shows a 3D view of a bridge deck with a red circular defect marker. A context-sensitive inspection form is overlaid on the 3D view. The form includes a dropdown menu for 'Deck - 4s' with a green checkmark icon, a dropdown for 'Reinforced Concrete Coated Bars' with a green checkmark icon, a dropdown for 'Delamination/Spall/Patched Area', and a dropdown for 'Poor'. Below these, there is a field for 'Area: 84' and an 'Edit Marker' button. The 'Defect Description' field contains the text: 'Spall greater than 1 in. deep or greater than 6 in. diameter. Patched area is unsound or showing distress. Does not warrant structural review.' Below this is a 'Comments:' field with an 'Add Picture' button. At the bottom of the form, there are two 'Remove' buttons. A compass in the top right corner shows 'E' and 'W' directions. A small text at the bottom right of the 3D view reads 'Level: Minimal_Default (Persistent)'.

Context-sensitive descriptions are attached to each element type, just as in the "Bridge Element Inspection Manual"

Each defect can be annotated with description, photos, location and quantity

Fields will be pre-populated with the db values from most recent inspection in future.

MDOT's 3D Bridge Tool



MDOT's 3D Bridge Tool

- Webinar is currently planned for October 11th for states to learn more information – watch your emails for announcement.



Questions?

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