Michigan BrM Enhancements

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Current FDS List

- 1B - Bridge List Screen (Map w/ Conditional Colors)
- 3 - User Profile and User Certifications
- 5 - Multiple Use Dashboards
- 6 - Controls for Bridge Header
- 7 - MDOT Custom Controls
- 8 - Inspection Type Screen
- 9 - Parallel Inspections
- 10 - MiLogin
- 11a - Request for Action Screen
- 11b - Request for Action Screen Dashboard
- 12 - Comments Control with Username and Date Stamp
- 13 - Ancillary Structures
- 14 - My Assignment Dashboard
- 15 - Inspection Previous Field Value and Card Controls

- 16 - Navigation
- 17 - Load Rating Module
- 18 - Multimedia Screen Improvements
- 19 – Historical Bridge Information
- 20 - Reporting Features
- 21 - Mobile Inspection Module
- 22 - Scour Plan of Action
- 23 - Assign Jurisdiction
- 25 - Damage Inspection
- 26 - Quality Control Inspection
- 27 - Audit Log
- 29 - Email Configurability
- 30 - ProjectWise & Security Scan Tool

BIG OL' BOX OF REQUIREMENTS

1B - Bridge List Screen (Map w/ Conditional Colors)

◈ Based on minimum NBI Rating (58,59,60,62)

◈ Green Pin [Min Condition ≥ 7]

◈ Yellow Pin [6 ≤ Min Condition ≥ 5]

◈ Red Pin [Min Condition = 4]

◈ Maroon Pin [Min Condition ≤ 3]
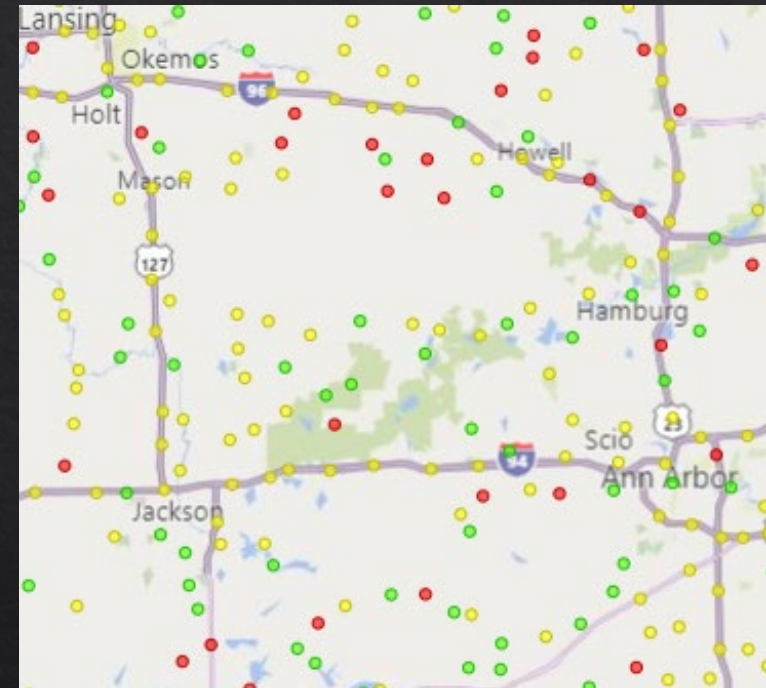
5 - Multiple Use Dashboards

- ◇ Structure Condition

- ◇ Request for Action / Critical Findings

- ◇ Load Rating

- ◇ Report Assignment

- ◇ If you can think it you can do it! (within Bridge data)

6 - Controls for Bridge Header

- Concatenated Fields Control

- Show Image Based on a Parameter

- Calculated Structure Condition Field
  - 'Poor Condition (4)'

- VFE Map Button

Item 41 = G or S

Item 41 = K

Item 41 = B

7 - MDOT Custom Controls

◈ Textbox Resize Vertically

◈ User Type-Ahead Field

◈ Work Candidates Grid Filters

◈ Tool Tip Enhancement

This textbox will adjust veritically based on the contents on load and after save. This textbox will adjust veritically based on the contents on load and after save. This textbox will adjust veritically based on the contents on load and after save. This textbox will adjust veritically based on the contents on load and after save. This textbox will adjust veritically based on the contents on load and after save. This textbox will adjust veritically based on the contents on load and after save. This textbox will adjust veritically based on the contents on load and after save.This textbox will adjust veritically based on the contents on load and after save. This textbox will adjust veritically based on the contents on load and after save. This textbox will

```
Substructure rating. NBI Item 60.
Table & Column Name: inspevnt.subrating
Datatype: char
Width: 1
Decimal Places: 0
Allow null: Y
Unique Key: N
Minimum: 0123456789
Maximum: N
Default: /_/
NBI Code: 060
Conversion Paircode: -1
Metric Units: -1
English Units: -1
Validation Type: LIST
```
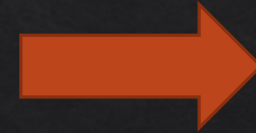
Substructure rating. NBI Item 60.

8 - Inspection Type Screen

- Streamlined Work Recommendation Entry
- Smart Form For Bridge Vs Culvert
- Field Dependent Control
  - Load Posting Signs
  - Delayed Inspection/ Frequency
- Component Tied To Element Grid
- "Repeater Control"
  - Fracture Critical Members
  - Fatigue Sensitive Members
  - Dolphin Tracking

9 - Parallel Inspections

◈ Multiple Inspections Open at Once

◈ Data Entry per Inspection Type

11b - Request for Action Screen Dashboard

Request For Action Dashboard

Jurisdiction: MDOT Statewide [Display]

NBI Filter: All   NHS Filter: All

Request For Action (RFA) Summary	Count
Total No. of Incomplete RFAs	1070
Total No. of Complete RFAs	1882
RFAs Submitted by Me	0
Incomplete RFAs Assigned to Me	0
Complete RFAs Assigned to Me	0
Critical Findings	144

Priority Level	In Progress	Complete	Reviewed by Committee	Not Reviewed by Committee
Level 1	126	215	62	279
Level 2	228	175	177	226
Level 3	270	258	306	222
Level 4	285	118	184	219

Intermediate Action Type	Complete	In Progress	Reviewed	Not Reviewed
Detailed Inspection	185	38	68	38
Damage Inspection	42	0	10	2
Scour Evaluation	50	19	32	5
Schedule Special Inspection	65	1	9	5
False Decking R&R	16	0	0	0
Load Rating	376	40	182	0
Load Reduction < 20%	0	0	0	0
Temporary Supports	223	74	83	42
PRJ Installation	49	29	16	20
Steel Repairs	215	136	118	70
Concrete Repairs	262	77	39	56
Beam End Repairs	34	15	13	19
Scour Repairs	33	15	16	6
Scale Concrete	857	139	242	120
Other Actions	419	71	90	67
Program Project	117	191	165	60
Joint Repair	54	30	5	28
Railing Repair	59	28	12	20
Sign Repair	60	27	17	19

Critical Finding Type	Complete	Incomplete
Close Bridge	59	0
Close Lane	51	0
Close Shoulder	30	0
Load Reduction ≥ 20%	4	0

12 - Comments Control with Username and Date Stamp

13 - Ancillary Structures

- Sign Cantilever
- Sign Truss
- Communication Tower
- Lattice Tower
- Lighting Tower
- Noise Wall
- Retaining Wall
- Spun Concrete Pole
- Steel Strain Pole
- Wood Pull
- Culverts <10'
- Frangible/Non-Frangible Lights
- Embedded Poles
- Mast Arms

13 - Ancillary Structures

- Dashboards
- Work Candidates
- Request for Action
- Layouts/Filters across assets
- Multimedia
- Reports

14 - My Assignment Dashboard

15 - Inspection Previous Field Value and Card Controls

16 - Navigation

- Side Navigation Enhancement

- Bridge Summary Page

17 - Load Rating Module

Load Rating Assumptions

Created by: *Read Only*   Event Name: *read only*

Rating Considers Field Conditions of Members*: `drop down`   Related Inspection Date: [ ]

Deck Rating at Time of Load Rating: [ ]   Super Rating at Time of Load Rating: [ ]

Sub Rating at Time of Load Rating: [ ]   Culvert Rating at Time of Load Rating: [ ]

Deterioration*: [ ]

Most Recent Year Construct/ Reconstruct/Overlay*: [ ]

History of Work Impacting Load Rating*: [ ]

Superstructure

Superstructure Component*: *drop down*   Beam fy (ksi): [ ]   Beam f'c / fb (ksi): [ ]

Composite: *drop down*   Number of Beams: [ ]   Shop Drawings Verified: *drop down*

Beam Size(s) & Names (each span): [ ]

Deck

Thickness (in): [ ]   Fy / fc' (ksi): [ ] / [ ]   Deck Design Load > H15: *drop down*

Wearing Surface Material: [ ]   Wearing Surface Thickness (in): [ ]   Wearing Surface Unit Weight (pcf): [ ]

17 - Load Rating Module

Roadway

	Left		Center		Right	
Barrier Type / Weight (plf):	☐	/ ☐	☐	/ ☐	☐	/ ☐
Sidewalk Width / Thick (in):	☐	/ ☐	☐	/ ☐	☐	/ ☐
Shoulder Width (ft):	☐		☐	/ ☐	☐	
Number of Striped Lanes/ Lane Width (ft):	☐	/ ☐	☐	/ ☐	☐	/ ☐
Shoulder Width & Striped Lanes Field Verified:	*drop down*					

Additional Information

Additional Loads: ☐

Unique Factors that Affect Rating: ☐

Load Rating Summary

Compliance Issues

Compliance Issues: *Read Only 1, Read Only 2, Read Only 3*

Analysis Program:* *drop down*

Analysis Program Version: ☐

Controlling Component and Failure Mode*: ☐

17 - Load Rating Module

17 - Load Rating Module

18 - Multimedia Screen Improvements

◇ Field Dependent Dropdowns

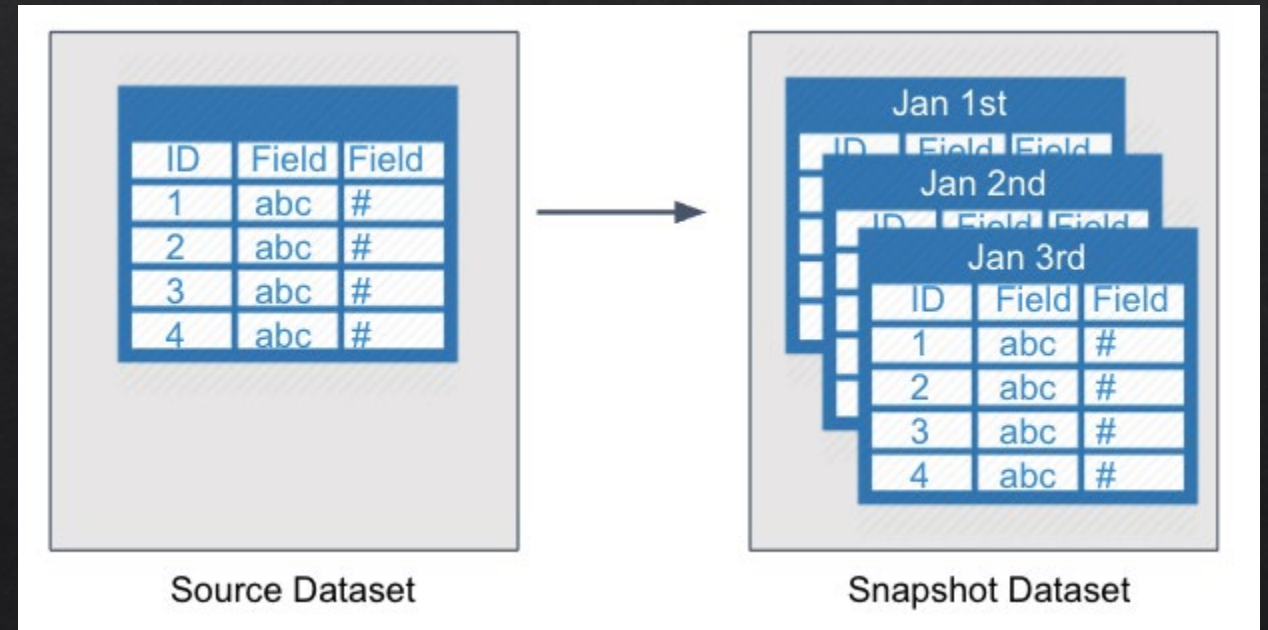   ◇ Category drives Sub-Category

19 – Historic Bridge Information

◈ Database Script managed by Schedule Task

◈ Set at a given frequency in Schedule Task module

◈ Data only Available by Database Query

Source Dataset

Snapshot Dataset

22 – Scour Plan Of Action

22 – Scour Plan Of Action

Inspection and Monitoring Summary

Type	Latest Date Completed	Current Frequency	Inspector	Agency
Inspection Type	MM/DD/YYYY	##	FirstName LastName	Agency Name
Inspection Type	MM/DD/YYYY	##	FirstName LastName	Agency Name
Inspection Type	MM/DD/YYYY	##	FirstName LastName	Agency Name
Inspection Type	MM/DD/YYYY	##	FirstName LastName	Agency Name
Inspection Type	MM/DD/YYYY	##	FirstName LastName	Agency Name

Bridge Closure Plan

Conditions to Consider Bridge Closure:
- ☐ Water Surface Elevation _____ ft
- ☐ Overtopping of Road or Structure
- ☐ Pressure Flow
- ☐ High Debris Accumulation
- ☑ Observed Structure Movement/Settlement
- ☑ Loss of Scour Countermeasures
- ☐ Observed Scour

Comments

Responsible Contacts [Add Existing Contact] [Add New Contact]

Name	Title	Agency	Work Phone	Cell Phone	Email	Resp. for Closure	Resp. for Opening	
FirstName LastName	Title	Agency	###-###-####	###-###-####	email@email.com	T/F	T/F	🖊🗑
FirstName LastName	Title	Agency	###-###-####	###-###-####	email@email.com	T/F	T/F	🖊🗑

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Detour Route

Possible Detour Route:

Bridges/Culverts on Detour Route [Map Detour Bridges/Culverts] [Add Bridge/Culvert]

Detour Struct#	Feature Intersected	Scour Rating	Load Posting	
###############	Feature Intersected	Scour Rating	##	🗑
###############	Feature Intersected	Scour Rating	##	🗑

<< 1 >>   2 item(s) on **1** page(s)

[Save] [Save & Close] [Cancel] [Delete]

23 – Assign Jurisdiction

- ◈ Inspections Assigned to An Individual
- ◈ "Primary" Group
- ◈ "Secondary" Groups
  - ◈ Non-Admin can assign only for their Primary Group

25 – Damage Inspection

26 – Quality Control Inspection

◈ Field QC

27 – Audit Log

30 – ProjectWise & Security Scan Tool

The Project Identification Tool (PIT) is being developed by Mayvue for MDOT using BrM as core

Objectives of Phase I

Identify candidate pavement projects by accessing past project and condition info

Prioritize projects based on configured goals and available funding

Optimize projects based on cost/benefit analysis unique to the "optimizer"

Forecast pavement condition based on federal metrics: International Roughness Index (IRI), Cracking/Rutting, Faulting
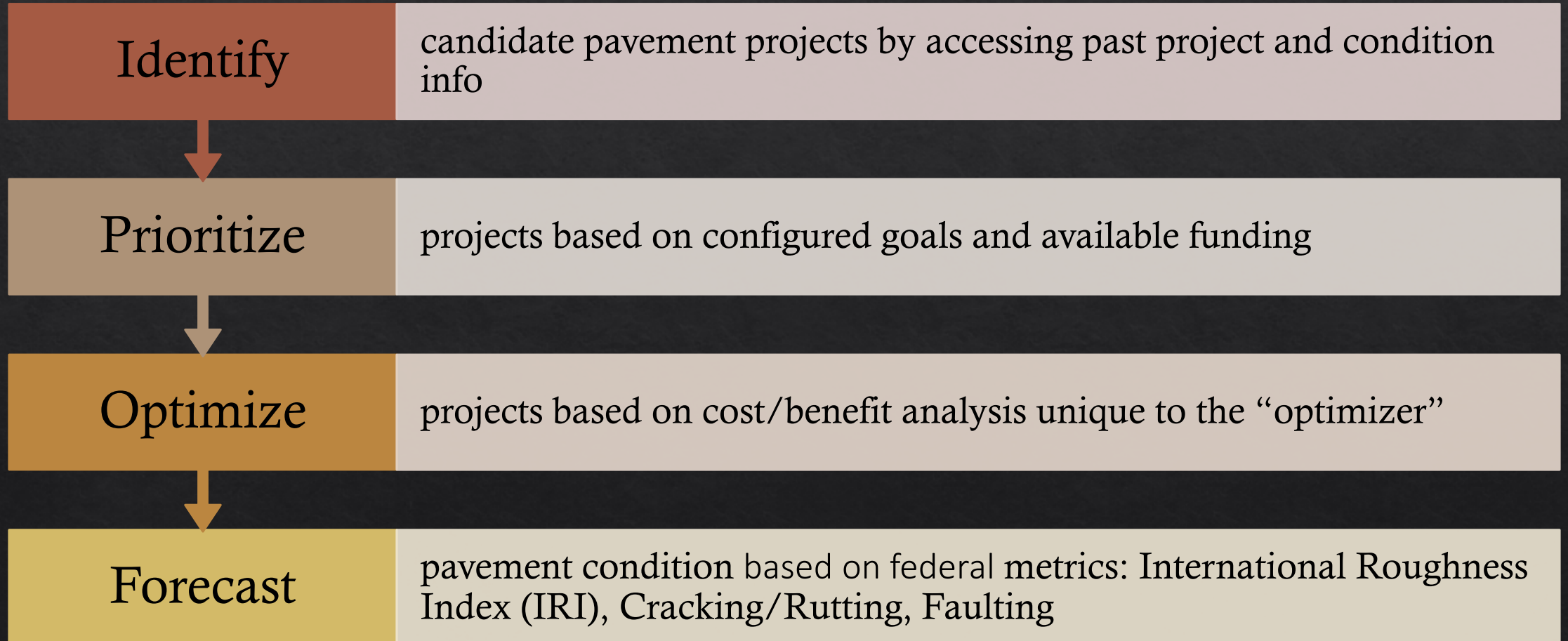
Phase 1 Screens & Modules

Round 1:
- Pavement List Screen
- Segment Manager Screen
- Asset Link Manager Screen
- Element & Metric Deterioration Screen
- General Condition Rating Builder Module

Round 2:
- Inventory Screen
- Base Inspection Module
- Utility, Weight Profiles, and Analysis Module
- GCR Deterioration – Stepped/Linear Screen
- Benefits & Actions Module
- Network & Lifecycle Policies Module
- Funding Sources Screen

Round 3:
- Projects Module
- Prioritizer Screen
- Analysis – Single Segment Screen
- Pavement Optimizer Module & Queue

What's Next?

Engage in internal process improvement discussions to integrate PIT into our highway Call for Projects

Identify additional functionality for Phase II, including:
- Network level optimization
- Multi-Asset Analysis and Integration with BrM
- Recursive Analysis/Lifecycle Cost Analysis for Pavement
- Dashboard by user type

Explore PIT's future as an AASHTOWare product
- Solicitation to other states to determine level of interest

Questions

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