

# Local Agency Bridge Program 2019 Bridge Conference





Fix the Damn  
Roads!



Fix the Damn  
Roads!

And Bridges Too!

# Local Bridge Program – FY 2018

## ■ FY 2018

- 82 Local Bridge Projects Let to Contract: Total = \$42 million



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## ■ Project Breakdown

- 30 Replacement Projects = \$32 million
- 52 Rehabilitation/PM Projects = \$10 million

## ■ Low Bid vs Application Estimates

- \$11 million in bid savings for FY 2018

# Local Bridge Projects – 2018

## 2018 Bridge Applications

- 427 Applications for \$308 million
- ~ \$53 million in funding (\$4.7 mill extra)








# Local Bridge Projects – 2018

## 2018 Bridge Applications

- 427 Applications for \$308 million
- ~ \$53 million in funding (\$4.7 mill extra)
- 105 Projects selected for FY 2021 (17% approval rate by dollars)
  - Replacement – 28 Projects (55% dollars)
  - Rehab/PM - 54 Projects (45% dollars)
- “Mix of Fixes” – improves long term bridge condition – Keep bridges Good/Fair longer

# Overall Local Bridge Condition


MiBRIDGE
Bridge Management and Inspection System

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Welcome Keith Cooper Jurisdiction

Administration   Assignments   Dashboards   Reports

### Structure Condition Dashboard

Jurisdiction LA Statewide ▼ Display

<u>Structure Inventory Summary</u>	Count	<u>Structure Condition Summary</u>	Count	<u>SD/FO Summary</u>	Count
Total No. of Structures	7,278	<b>Good/Fair (5 or Greater)</b>	<b>5,959</b>	*Structurally Deficient	949
Highway (NBI) Structures greater than 20'	6,645	Highway included in NBI	5,691	*Functionally Obsolete	621
Highway Structures less than 20'	310	Non NBI Structures (<20, RR, Ped, etc.)	268	*Non-Deficient Structures	5,045
Rail Road Structures (X)	250	<b>Poor (4)</b>	<b>599</b>	*No Current SD/FO Rating	1,398
Pedestrian Structures (P)	65	Highway included in NBI	540	<b>NBI Condition - Goals Summary</b>	<b>Pct.</b>
Other Non-Highway Structures (V, Plaza)	8	Non NBI Structures (<20, RR, Ped, etc.)	59	*Good/Fair (5 or Greater)	85.7%
<b>Additional Bridge Inventory Information</b>		<b>Serious/Critical (3 or less)</b>	<b>476</b>	Freeway	0.0%
Posted Structures	1,055	Highway included in NBI	409	Non-Freeway	85.7%
Closed Structures	56	Non NBI Structures (<20, RR, Ped, etc.)	67	*Poor/Serious/Critical (4 or Less)	14.3%
Fracture Critical Structures	71	<b>Unrated Structures</b>	<b>244</b>	Freeway	0.0%
Scour Critical Structures	1,190	Highway included in NBI	5	Non-Freeway	14.3%
Scheduled/Under Construction (S, G)	7	Non NBI Structures (<20, RR, Ped, etc.)	239	*Poor NHS Deck Area	13.8%
				*Applies ONLY to Highway Structures > 20'	

#### Structure Inventory Summary



# Local Bridge Condition

- 2019 - Local Agency Bridges
  - 6645 NBI Bridges
  - 85.7% Good or Fair
  - 862 Fair (5)
  - 599 Poor (4)
  - 476 Serious or Critical (3 or less)

# Local Bridge Condition

- 2019 - Local Agency Bridges
  - 6645 NBI Bridges
  - 85.7% Good or Fair
  - 862 Fair (5)
  - 599 Poor (4)
  - 476 Serious or Critical (3 or less)
- 1075 Poor/Serious/Critical Bridges
- How do we address 1075 Poor/Serious/Critical Bridges?

# Local Bridge Condition

- 2019 - Local Agency Bridges
  - 6635 NBI Bridges
  - 85.7% Good or Fair
  - 862 Fair (5)
  - 599 Poor (4)
  - 476 Serious or Critical (3 or less)
- 1075 Poor/Serious/Critical Bridges
- One Solution: Bridge Bundling

# Bridge Bundling

- Bridge Bundling
  - Group similar bridges for efficient design and construction
- Feasibility study on Bridge Bundling in MI - March 2019
- MDOT with support from CRA and MML will present to Governor and Legislature
- Possible Goal: Zero Serious/Critical bridges by 2025!



# 2019 Call For Applications

- Sent out February 25th to CRA and MML  
– Call for FY 2022 Construction
- **Deadline – May 1, 2019**

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- **Deadline – May 1, 2019**
- Local Bridge Program Website
  - Call Letter/Instructions
  - Estimating Worksheet - Updated
  - 2018 Selected Projects for FY 2021

# Call For Applications

- Application limit – 5 Total
  - Multiple PM's count as 1 Application
    - No limit on structures in multiple PM application
    - Bundle for cost effectiveness
      - Minimize Mob and Traffic Control costs
    - Good Estimate Range for PM App - \$200k-\$500k
      - **PM projects are often underestimated**
      - Use estimating worksheet
      - Factor in unknowns and small quantities

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- Application limit – 5 Total
  - Multiple PM's count as 1 Application
    - No limit on structures in multiple PM application
    - Bundle for cost effectiveness
      - Minimize Mob and Traffic Control costs
    - Good Estimate Range for PM App - \$150k-500k
      - **PM projects are often underestimated**
      - Use estimating worksheets
      - Factor in unknowns and small quantities
  - PM's selected by RBC consensus



# Call For Applications

- Key Items for Applications
  - Complete Narrative
  - Current Signed Resolution
  - Public Utility relocation costs
  - Detailed Cost Estimates – Use Updated Worksheet

# Call For Applications

- Key Items for Applications
  - Complete Narrative
  - Current Signed Resolution
  - Public Utility relocation costs
  - Detailed Cost Estimates – Use Updated Worksheet
  - Proper Scoping of Work
    - Rehabilitation and PM projects
    - Replacements – Don't underestimate size of new bridge
- Applications - Due May 1, 2019

# How to Increase Chances for Selection

- Look for additional sources of funding
  - STP, Safety, Economic Development, etc.
- Closed bridges – consider removing bridge and cul-da-sac road.
- Bundling PM applications
- Increase the Local Agencies funding share – Ex. - 5% to 10% or higher
- Ideas to conserve Local Bridge Program Funds – “Innovative Ideas/Right Fit”

# Side By Side Box Beam Bridges



## Road & Bridge Design Publications

Monthly Update – December 2018



**Effective immediately, MDOT is discontinuing the use of transversely post-tensioned, prestressed concrete side-by-side box beams as a superstructure alternative for MDOT trunkline bridges. This will only apply to MDOT trunkline projects, and not local agency projects. The following guides will be deleted or have modifications based on this change. The deleted guides will be posted as an [archived material](#) for use in rehabilitation, CPM and local agency projects. Holders of paper manuals may want to retain the deleted guides for their use. The deleted guides will not be updated(maintained).**

**This will also affect the Bridge Design Manual. The sections listed below were modified/ updated to reflect the change.**

Deleted Bridge Design Guides:

6.29.06A	Bridge Railing, 2 Tube on Prestressed Box Beam Deck
6.29.09E	Bridge Barrier Railing, Type 4 on Prestressed Box Beam Deck
6.29.10D	Aesthetic Parapet Tube Railing on Prestressed Concrete Box Beam
6.29.17A	Bridge Railing, 4-Tube Bicycle Railing <a href="#">Option on Prestressed Box Beam Deck</a>
6.60.11B	Pier for Prestressed Concrete Box Beams for Live Load
6.65.12	Prestressed Concrete Box Beam Details
6.65.13	Prestressed Concrete Box Beam and Post - Tensioning Details
6.65.13A	Prestressed Concrete Box Beam and Post Tensioning Details

# Side By Side Box Beam Bridges

- Reasons to Eliminate SBS Box Beams
  - Longevity – About half the service life vs other superstructures
  - Constructability Issues
    - Differential Camber
    - Post Tension ducts not lining up
  - Difficult Inspection
    - Can not see between beams
  - Fabrication Issues
    - Styrofoam floating/difficult to cast

# Side By Side Box Beam Bridges



# Side By Side Box Beam Bridges



# Side By Side Box Beam Bridges





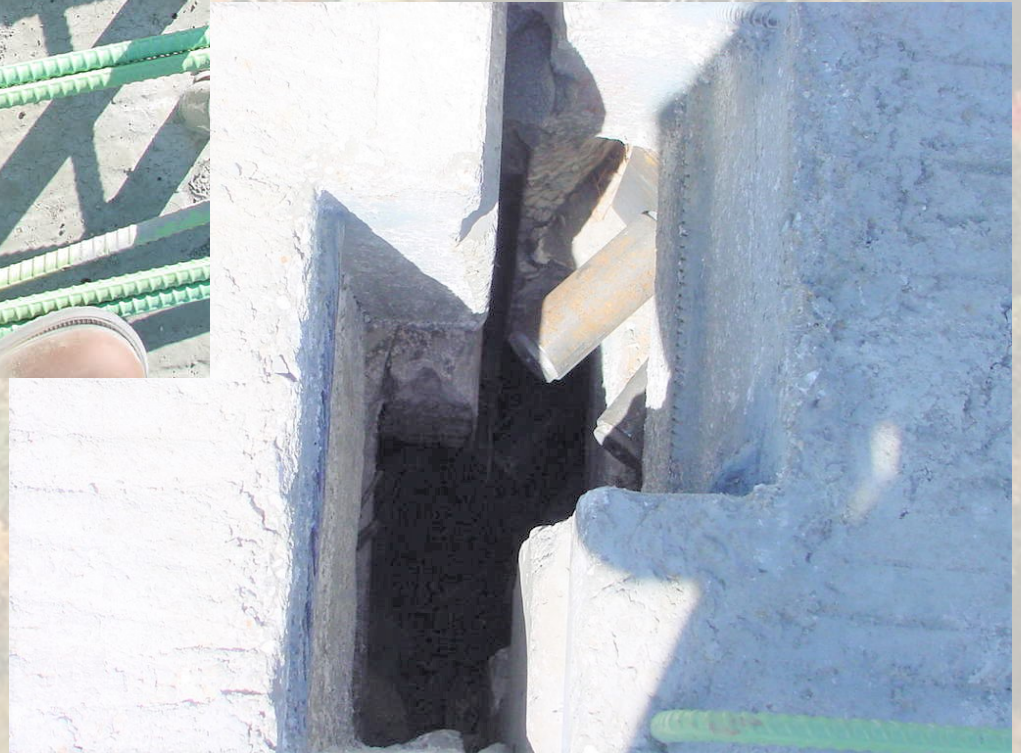
# Side By Side Box Beam Bridges



# Side By Side Box Beam Bridges



# Side By Side Box Beam Bridges



# Project Reminders

- Soil Borings
  - Borings MUST be a min. of 10 feet below est. pile tip.
  - One boring per substructure unit
  - LBP bears the risk in construction if inaccurate Geotech information
  - Avoid
    - Delays
    - Contractor Claims
    - Cost overruns



# Secondary Route Bridge Design Plan Guides

- Template Plans/Guides for Single Span Bridges (Superstructure)
  - Assist Designers with plan development – Reduce Design time
- Life Cycle Cost Analysis to Determine
  - Most Cost Effective Designs
- Increase Design Plan QC/QA
- Designer develops substructure plan
- Instructions/Plans/Guides available to LA and Consultants
  - Plans in MicroStation/AutoCAD format on Local Bridge Program website

# Bridge Asset Management

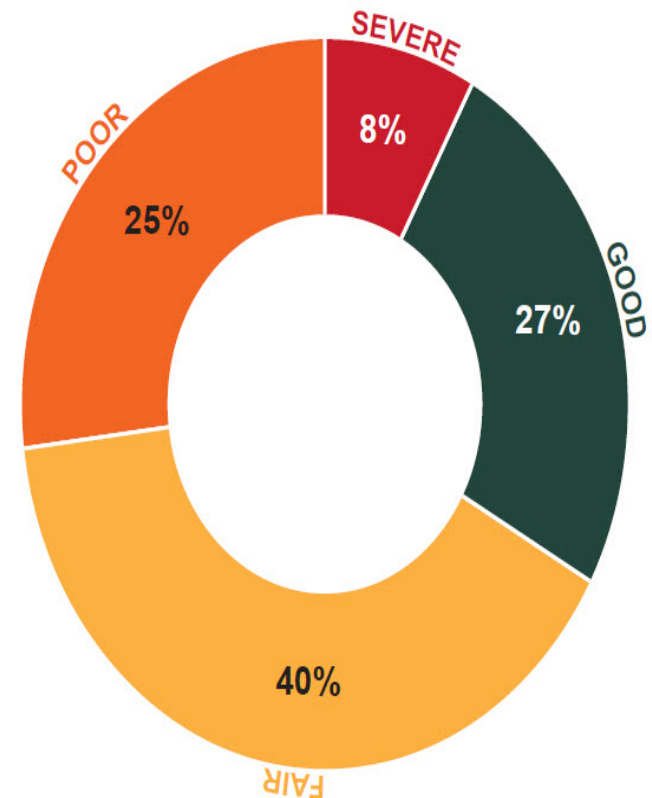
- Culvert Inventory Pilot Evaluation Program
  - Collect culvert data on locally owned roads statewide
  - Goals
    - Est. Total Number of Culverts
    - Est. Overall Condition
    - Determine physical characteristics
    - Est. Agency labor to collect inventory data

# Bridge Asset Management

## ESTIMATED STATEWIDE LOCAL AGENCY INVENTORY

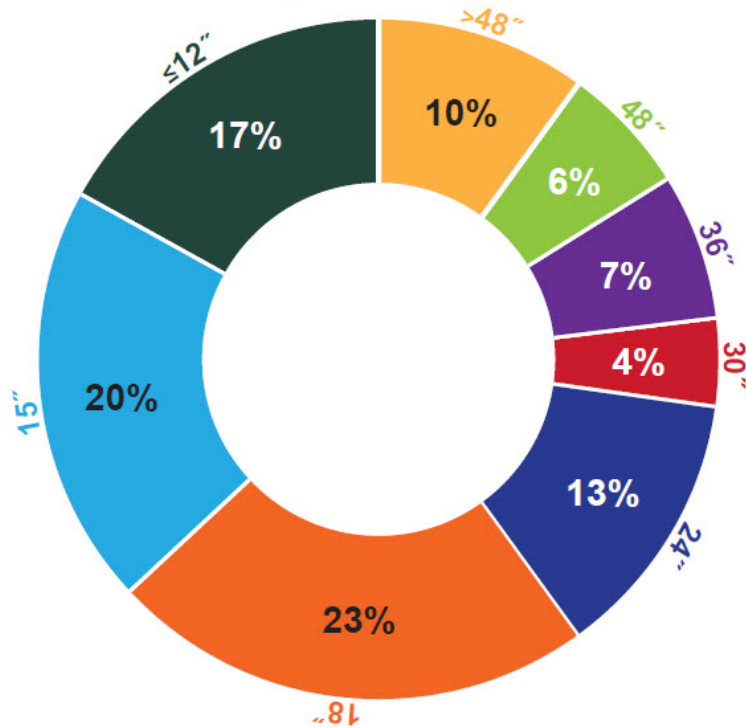
- ▶ Estimated number of local agency culverts: 196,000
- ▶ 27 percent of the culverts are in good condition
- ▶ 69 percent of the culverts are corrugated steel pipe
- ▶ Estimated time to inventory a culvert: 17 minutes
- ▶ Estimated time to inventory and inspect a culvert: 25 minutes
- ▶ Estimated length of local agency culverts: 7.3 million to 9.2 million feet (1,389 to 1,756 miles) of culvert. This is enough culvert pipe to build a single straight culvert from Houghton, Michigan, to the tip of Key West, Florida. (see map below)
- ▶ Estimated replacement cost of local agency culverts: \$1.48 billion

Estimated Local Agency Culvert Condition

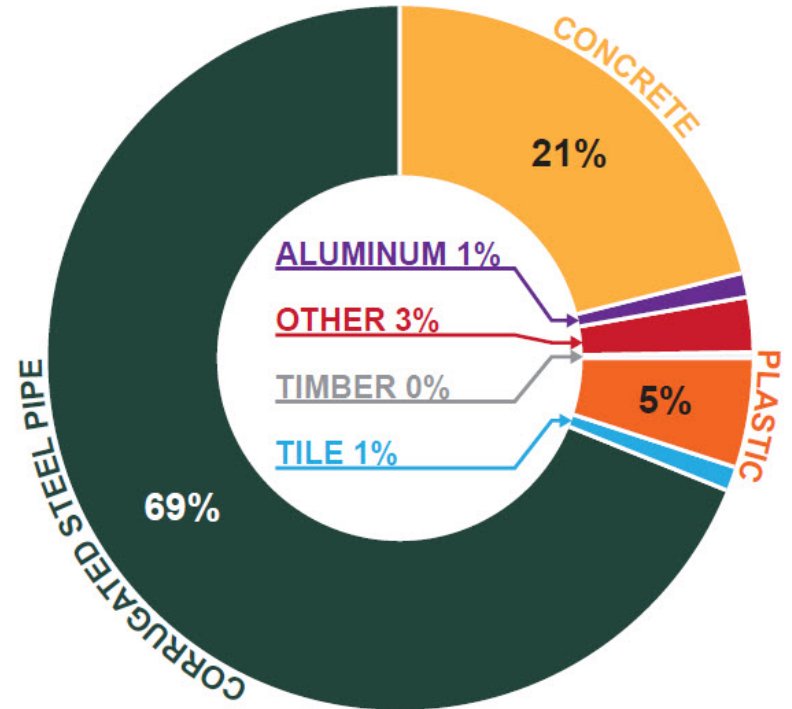


# Bridge Asset Management

Reported Culverts by Span or Diameter (in inches)



Reported Culverts by Material Type





# Bridge Asset Management

- Key Findings
  - Annual Inspection Costs Estimated at \$2.5 million (5-year cycle = \$10 million)
  - 10% of Local culverts are 48" Dia. or greater
  - 69% Corrugated Steel
  - 21% Concrete
  - Condition Data:
    - 27%: Good
    - 40%: Fair
    - 33%: Poor

# Bridge Asset Management

Michigan.gov

HOME INTERACTIVE MAPS REPORTING HUB DASHBOARDS Q SEARCH

TRANSPORTATION ASSET MANAGEMENT COUNCIL

TAMC

CONFERENCE TRAINING SUPPORT ABOUT US

## Preserving Roads & Bridges

The Michigan Transportation Asset Management Council (TAMC) - A resource for independent, objective data on the condition of Michigan's roads and bridges and a resource for implementing the concepts of Asset Management.

### Interactive Maps

Create an up-to-date road and bridge condition map

### Reporting Hub

Investment Reporting Tool (IRT), Act 51 Distribution and Reporting System (ADARS), Non-Trunkline Federal Aid (NFTA)

### Dashboards

Condition, operation, and investment in Michigan's public road system

### Training

Sponsored training, support, and education programs.

### Council & Committee Meetings

Meeting dates and approved minutes for the council.

# Bridge Asset Management

Michigan.gov

TAMC ABOUT TAMC

## Interactive Map

Download PASER Ratings

State Capitol

Search by location, street, or bridge

### Map Options

Street

Aerial

Hybrid

### Map Layers



Road and Bridge Ratings

### Rating



Poor

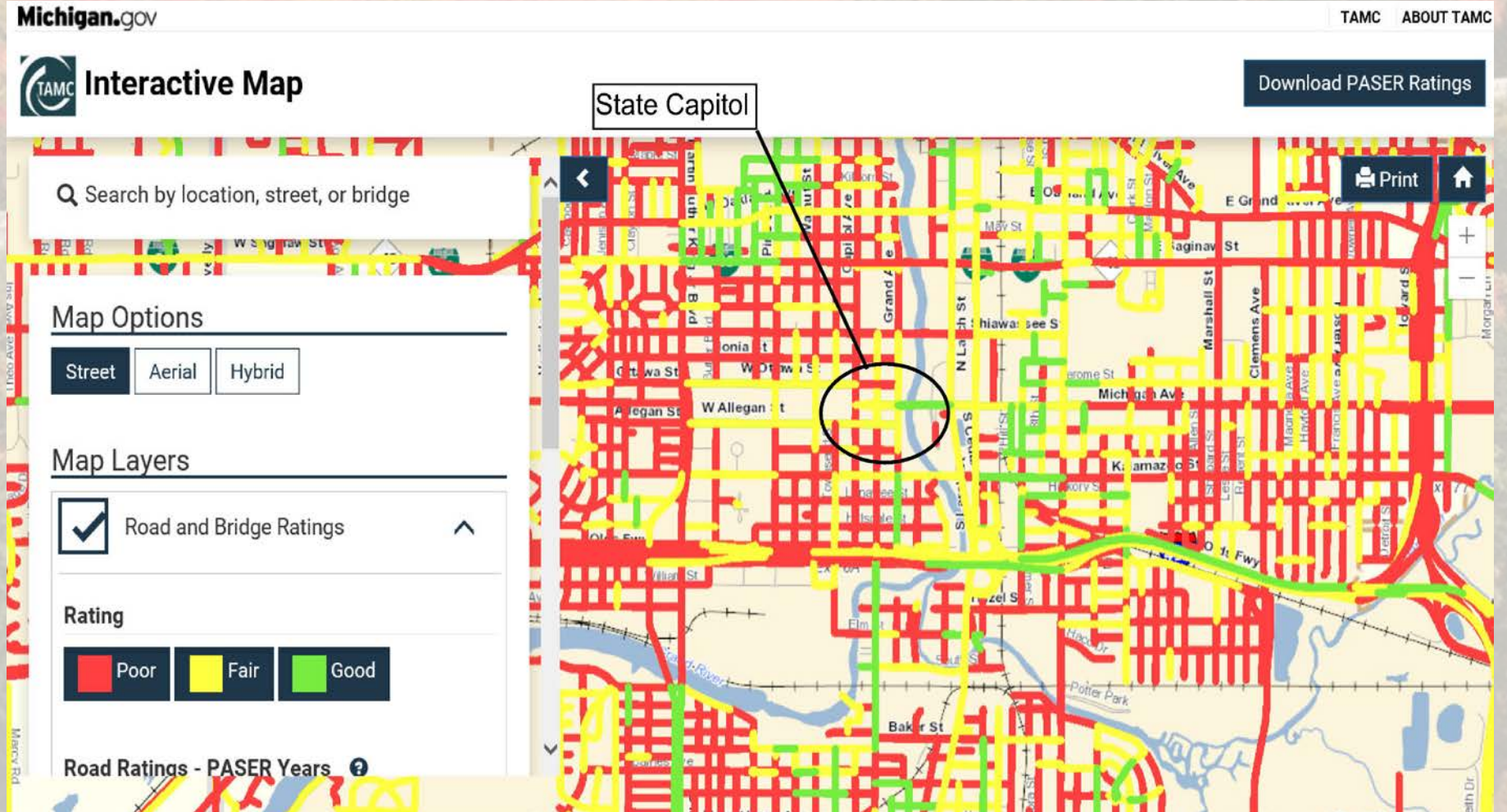


Fair



Good

Road Ratings - PASER Years ?



# Regional Bridge Council Meetings

## Local Bridge Program Update – RBC's

Bay Region: May 1<sup>st</sup> @ 10:00am, Midland CRC

Grand Region: May 6<sup>th</sup> @ 10:00am, Ottawa CRC

Metro Region: April 24<sup>th</sup> @ 10:00am, St. Clair CRC

North Region: April 18<sup>th</sup> @ 10:00am, MDOT Gaylord Office

Southwest Region: April 29<sup>th</sup> @ 10:00am, Van Buren CRC

Superior Region: April 19<sup>th</sup> @ 8:30am, Marquette CRC

University Region: May 8<sup>th</sup> @ 9:00am, Ingham CDR

# Bridge Unit Staff

- **Keith Cooper: Bridge Program Manager**
  - Phone: (517) 335-4526 – New Phone #
- **Mark Harrison: Project Development Engineer**
  - Phone: (517) 335-4522 - New Phone #
- **Tim Barry: Bridge Staff Engineer**
  - Phone: (517) 335-2844
- **Pablo Rojas: Bridge Staff Engineer**
  - Phone: (517) 335-4527 - New Phone #
- **Rita Levine: Bridge/Rural Staff Engineer**
  - Phone: (517) 335-4528 - New Phone #

# Threatened & Endangered Mussels

- Start Your Review for Endangered Mussels Early
- Form 5323: New NEPA Program Application
  - Replaces pages 4 through 6 of Current Program App
  - One Section Covers T & E
- Check US-FWS' Website and Enter Project Information into IPaC for Possible Presence of Federally Listed Endangered Mussels.
- Check MDEQ's MiWater Database for Potential State Listed Mussel Impacts. MDNR May Require a Permit.
- If Your Project May Impact Protected Federal Mussels, US-FWS May Require a Mussel Survey

# Threatened & Endangered Mussels

- If a Mussel Survey is Required by US-FWS
  - A Section 10(a)(1A) Permit is Required from US-FWS Before Beginning the Survey.
  - The Surveyor is Required to Hold an ESA section 10(a)(1A) Permit from US-FWS and Must Receive Site Specific Authorization from US-FWS Prior to Performing a Survey.
- If State Listed Mussels are Anticipated, a Relocation Plan Can Be Submitted With Survey Plan to MDNR. If Listed Mussels are Encountered During the Survey, They Can Be Relocated at the Time.

# Threatened & Endangered Mussels

- If Federally Listed Mussels are Encountered During the Survey:
  - The US-FWS Must be Notified and a Relocation and Monitoring Plan Must Be Submitted.
  - Once the Relocation and Monitoring Plan has been Approved, US-FWS will Issue a Permit.



# Threatened & Endangered Mussels

- Possible Delays for Bridge Projects
  - Acquiring Initial Permits
  - Acquiring Relocation / Monitoring Plan
  - Water Temperature must be Greater than 50°F
  - Air Temperature must be Between 50-90°F
  - Seasonal Restriction:
    - Survey: June 1<sup>st</sup> through October 15<sup>th</sup>
    - Relocation: June 1<sup>st</sup> through September 15<sup>th</sup>
  - Time for MDNR and/or US-FWS
    - Issue Survey Permit
    - Issue Relocation Permit



Questions?