



Local Agency Bridge
Program
2015 Bridge Conference

Project Letting Summary

A scenic view of a large suspension bridge spanning a body of water, with greenery in the foreground. The bridge has two prominent towers and is supported by a series of piers. The water is a mix of blue and green, and the sky is light blue with some clouds. In the foreground, there are green bushes and grasses.

■ FY 2014

- 77 Local Bridge Projects Let to Contract: Total = \$44 million
- 84 Total Projects = \$51 million

Project Letting Summary

A scenic view of a large suspension bridge, likely the Mackinac Island Bridge, spanning a wide body of water. The bridge features two prominent white towers with steel trusses. The water is a deep blue-green, and the sky is a pale blue with soft, white clouds. In the foreground, there are green bushes and grasses, slightly out of focus, framing the bottom and right sides of the image.

■ FY 2014

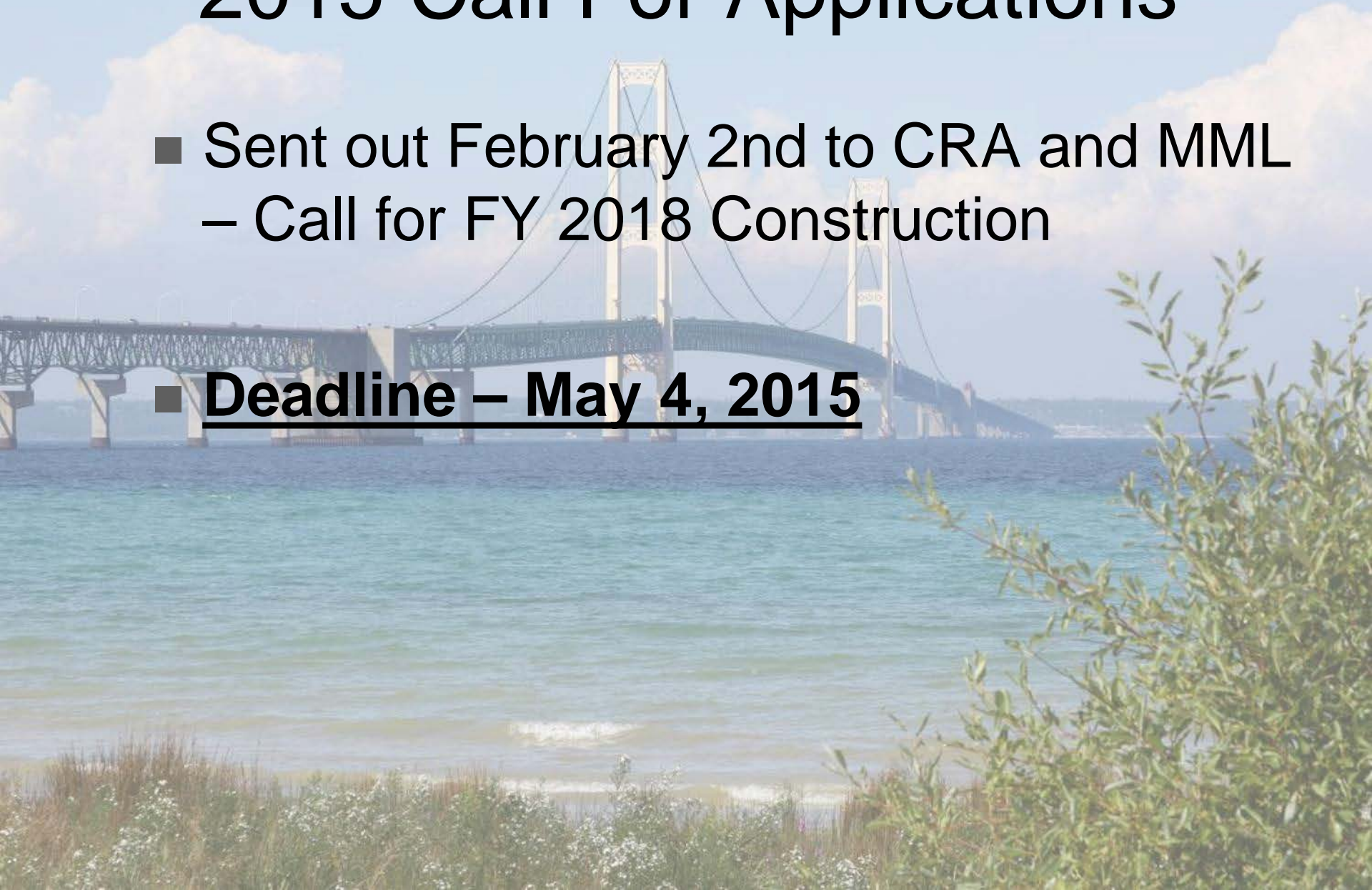
- 77 Local Bridge Projects Let to Contract: Total = \$44 million
- 84 Total Projects = \$51 million

■ FY 2015 (As of March 1st)

- 38 Local Bridge Projects = \$24 million
- April Advertised Projects
 - 15 Local Bridge Projects = \$11 million

2015 Call For Applications

- Sent out February 2nd to CRA and MML
– Call for FY 2018 Construction
- **Deadline – May 4, 2015**



2015 Call For Applications

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– Call for FY 2018 Construction
- **Deadline – May 4, 2015**
- “Call For Projects” Location:
www.michigan.gov/mdot, Doing
Business, Local Agency Program, Bridge
Program, Call For Projects

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 \$150k-400k
 - Lower than 150K – not cost effective
 - Higher estimates limits RBC selection ability

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 - Higher estimates limits RBC selection ability
 - PM's selected by RBC consensus – Not by Points

Call For Applications

- Application Estimates:
 - General Estimate: Replacements
 - Rural: \$220/sft of Proposed Deck Area
 - Urban: \$280/sft of Proposed Deck Area
 - Approach Costs: \$35k/Sta, \$150k minimum, Urban higher (\$300k to \$500k)
 - Replace, Rehab and Preventative Maintenance – Fill Out “Estimate Worksheet of Costs”

Call For Applications

■ Application Changes

- Cost Estimate Worksheets updated – cost increases
- Mobilization estimate 10%
- Partial Painting Cost increased
- Encourage Asset Management Plan with App.
- Do NOT include PE, CE and ROW costs

Call For Applications

- **Application Changes**
 - Cost Estimate Worksheets updated – cost increases
 - Mobilization estimate 10%
 - Partial Painting Cost increased
 - Encourage Asset Management Plan with App.
 - Do NOT include PE, CE and ROW costs
- Electronic submission preferred
 - Convert to .pdf – DO NOT scan

Call For Applications

- Accurate/Updated SI & A
 - Application rating points based SI & A information
 - Common issues/errors
 - ADT - Outdated
 - Route Classification incorrect
 - Load Rating and Posting Codes incorrect/outdated
 - SI&A Posted Loading not matching bridge site posting
 - Lack detail in item condition description
 - Lack work recommendations

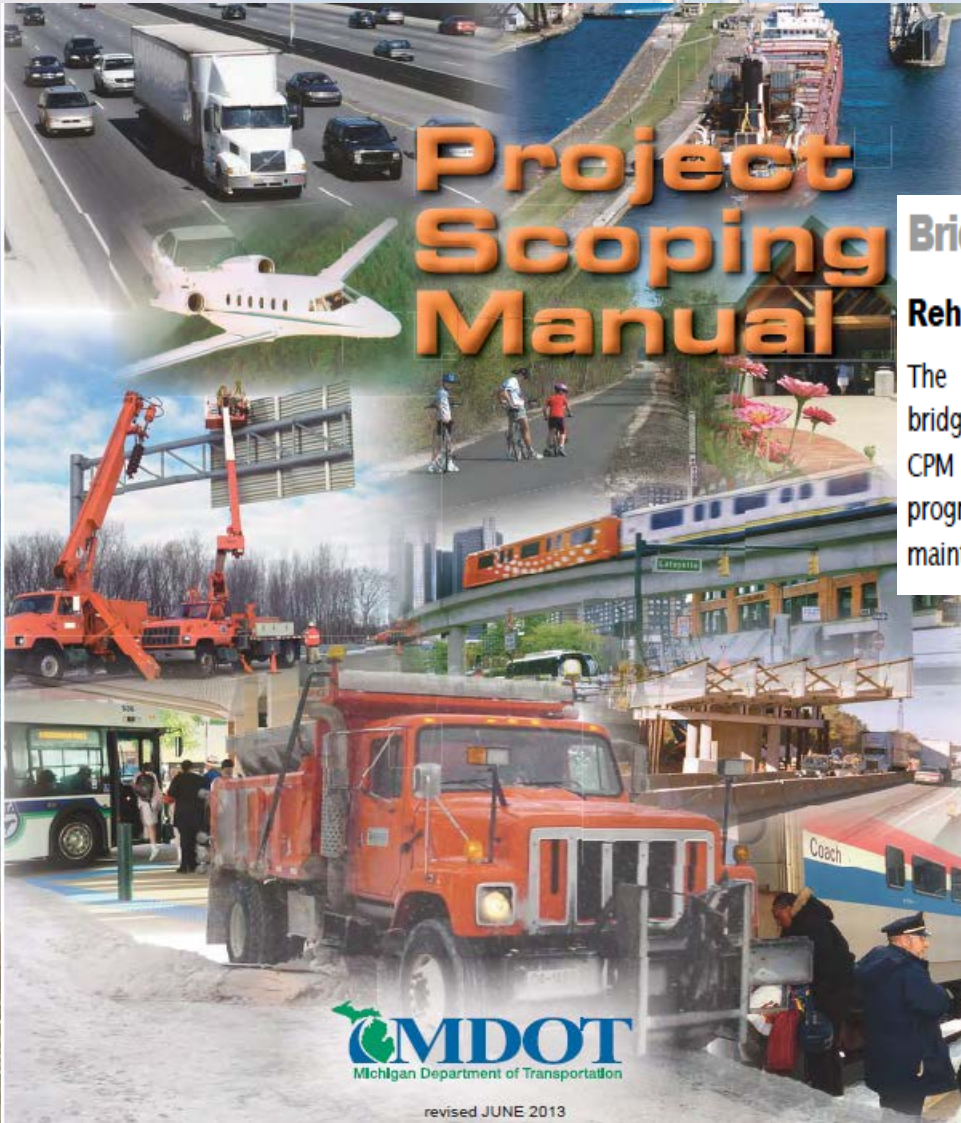
Call For Applications

- Key Items to include in Applications
 - Complete Narrative
 - Current Resolution
 - Public Utility relocation costs
 - Detailed Cost Estimates – Use Worksheets

Call For Applications

- Key Items to include in Applications
 - Complete Narrative
 - Current Resolution
 - Public Utility relocation costs
 - Detailed Cost Estimates – Use Worksheets
 - Proper Scoping of Work
 - Rehabilitation and PM projects
 - Replacements – Don't underestimate size of new bridge
- Applications - Due May 4, 2015

Application Scoping



Bridge Network Strategy Development

Rehabilitation and Replacement for Bridges

The purpose of the bridge program is to preserve MDOT's trunkline bridges. It is a balanced strategy made up of Replacement, Rehabilitation, CPM and Capital Scheduled Maintenance (CSM). The emphasis area of this program is to address the needs of all structures of critical concern, and maintain the freeway and non-freeway bridges in good or fair condition.

Application Scoping

BRIDGE DECK PRESERVATION MATRIX

DECK CONDITION STATE				REPAIR OPTIONS	POTENTIAL RESULT TO DECK BSIR		NEXT ANTICIPATED EVALUATION
Top Surface		Bottom Surface			Top Surface BSIR #58a	Bottom Surface BSIR #58b	
BSIR #58a	Deficiencies % (a)	BSIR #58b	Deficiencies % (b)				
≥ 5	N/A	N/A	N/A	Hold (c) Seal Cracks/Healer Sealer (d)	No Change	No Change	1 to 8 years
	≤ 5%	> 5	≤ 2%	Epoxy Overlay	8, 9	No Change	10 to 15 years
	≤ 10%	≥ 4	≤ 25%	Deck Patch (e)	Up by 1 pt.	No Change	3 to 10 years
4 or 5	10% to 25%	5 or 6	≤ 10%	Deep Concrete Overlay (h)	8, 9	No Change	25 to 30 years
		4	10% to 25%	Shallow Concrete Overlay (h, i)	8, 9	No Change	10 to 15 years
				HMA Overlay with waterproofing membrane (f, h, i)	8, 9	No Change	8 to 10 years
		2 or 3	> 25%	HMA Cap (g, h, i)	8, 9	No Change	2 to 4 years
≤ 3	>25%	> 5	< 2%	Deep Concrete Overlay (h)	8, 9	No Change	20 to 25 years
		4 or 5	2% to 25%	Shallow Concrete Overlay (h, i)	8, 9	No Change	10 years
				HMA Overlay with waterproofing membrane (f, h, i)	8, 9	No Change	5 to 7 years
		2 or 3	>25%	HMA Cap (g, h, i)	8, 9	No Change	1 to 3 years
				Replace Deck	9	9	40+ years

- (a) Percent of deck surface area that is spalled, delaminated, or patched with temporary patch material.
 (b) Percent of deck underside area that is spalled, delaminated or map cracked.
 (c) The "Hold" option implies that there is on-going maintenance of filling potholes with cold patch and scaling of incipient spalls.
 (d) Seal cracks when cracks are easily visible and minimal map cracking. Apply healer sealer when crack density is too great to seal individually by hand. Sustains the current condition longer.
 (e) Crack sealing can also be used to seal the perimeter of deck patches.
 (f) Hot Mix Asphalt overlay with waterproofing membrane. Deck patching required prior to placement of waterproofing membrane.
 (g) Hot Mix Asphalt cap without waterproofing membrane for ride quality improvement. Deck should be scheduled for replacement in the 5 year plan.
 (h) If bridge crosses over traveled lanes and the deck contains slag aggregate, do deck replacement.
 (i) When deck bottom surface is rated poor (or worse) and may have loose or delaminated concrete over traveled lanes, an in-depth inspection should be scheduled. Any loose or delaminated concrete should be scaled off and false decking should be placed over traveled lanes where there is potential for additional concrete to become loose.

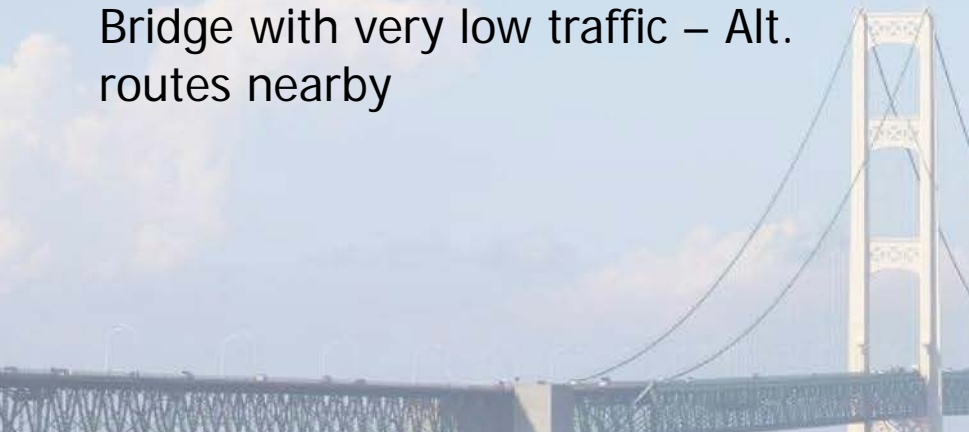
Application Examples

A scenic view of a large suspension bridge, likely the Mackinac Island Bridge, spanning a wide body of water. The bridge features two prominent white towers with decorative elements. The water is a clear blue-green, and the sky is a pale blue with soft, white clouds. In the foreground, there are green bushes and grasses, some with small white flowers, partially obscuring the view of the water and bridge.

- Reasons Why Applications are Rated Low
 - Low ADT Bridges
 - Closed Bridges
 - Too General or incomplete estimates
 - Minimal or incomplete scope on Rehab and PM applications
 - Incorrect Project Scope

Low ADT Bridges

Bridge with very low traffic – Alt. routes nearby



Closed Bridges

Bridges closed for many years



General or Incomplete Estimates

LAP – Bridge Cost Estimating Worksheets – Fillable forms on website

2015 **LAP - BRIDGE COST ESTIMATE WORKSHEET** **REV 10/2015**
 - CPM, REHAB, REPLACE -

REGION: _____ FISCAL YEAR: _____ STRUCTURE ID: (3-5 digits) _____
 ENGINEER: _____ DATE: _____ BRIDGE ID: _____
 LOCATION: _____ DECK AREA: _____ SFT _____ STR. TYPE: XXX-XXXX
 PRIMARY WORK ACTIVITY: _____ DECK DIM: _____

WORK ACTIVITY	QUANTITY	UNIT	UNIT COST	TOTAL
NEW BRIDGE				
Multiple Spans, Concrete (add demo & road approach & traffic control)		SFT	\$210.00 /SFT	
Multiple Spans, Steel (as above)		SFT	\$230.00 /SFT	
Over Water or Single Span (add to replacement cost)		SFT	\$50.00 /SFT	
Precast 3-sided Culvert or 4-sided Box Culvert		SFT	\$400.00 /SFT	
Other				
NEW SUPERSTRUCTURE				
Concrete (includes remove exist super, new railing, add i.c. & approach)		SFT	\$130.00 /SFT	
Steel (as above)		SFT	\$170.00 /SFT	
Over Water (add to new superstructure cost)		SFT	\$35.00 /SFT	
Other				
WIDENING				
Added portion only, ft of width (add road approach transition)		SFT	\$270.00 /SFT	
Other				
NEW DECK				
(includes remove exist deck & new railing (add i.c. & approach))		SFT	\$73.00 /SFT	
Other				
DEMOLITION				
Entire bridge, grade separation		SFT	\$32.00 /SFT	
Entire bridge, over water		SFT	\$42.00 /SFT	
Other				
SUPERSTRUCTURE REPAIR				
Concrete Deck Patch (includes hand chipping)		SFT	\$36.00 /SFT	
Full Depth Patch		SFT	\$40.00 /SFT	
HMA Cap (no membrane, add bridge rail if req'd)		SFT	\$1.40 /SFT	
HMA Overlay with WP membrane (add bridge rail if req'd)		SFT	\$5.00 /SFT	
Removal of Concrete Wearing Course (latex) or HMA Overlay		SFT	\$1.50 /SFT	
Spall Overlay		SFT	\$44.00 /SFT	
Shallow Overlay (includes joint rep & hydro, add bridge rail if req'd)		SFT	\$30.00 /SFT	
Deep Overlay (includes joint rep & hydro, add bridge rail if req'd)		SFT	\$32.00 /SFT	
High Load HI Repair (PCI Beam)		SFT	\$200.00 /SFT	
PCI Beam End Repair (\$2000-\$4000 per beam end)		EA	\$4,000.00 /EA	
Repair Structural Steel (\$2000 bolted, \$6000 welded)		EA	\$6,000.00 /EA	
Paint Structural Steel (includes clean & coat)		SFT	\$50.00 /SFT	
Partial Painting (includes clean & coat)		SFT	\$40.00 /SFT	
HP & Hanger Replacement (includes temporary supports)		EA	\$7,300.00 /EA	
Other				
SUBSTRUCTURE REPAIR				
Pier repair (measured ± 2). Replace unit if spalled area > 30%		CFT	\$250.00 /CFT	
Pier repair over water (measured ± 2)		CFT	\$330.00 /CFT	
Pier replacement (measured ± 2)		CFT	\$65.00 /CFT	
Abutment repair (measured ± 2)		CFT	\$250.00 /CFT	
Temporary Supports for Substructure Repair		EA	\$1,900.00 /EA	
Slope Protection Repairs		SYD	\$62.00 /SYD	
Other				
MISCELLANEOUS				
Expansion or Construction Joints (includes removal)		FT	\$54.00 /FT	
Bridge Railing, remove and replace (\$205 Type 4, \$270 Aesthetic Parapet)		FT	\$260.00 /FT	
Three Beam Railing retrofit		FT	\$30.00 /FT	
Deck Drain Extensions		EA	\$600.00 /EA	
Articulating Concrete Block System (ACB)		SYD	\$180.00 /SYD	
Other Countermeasures		LSUM	LSUM	
ROAD WORK				
Approach Pavement, 12" RC (add C & G, CR, Slope, Drain, 40' ea. end (16' ea. quad))		SFT	\$115.00 /SFT	
Approach Curb & Gutter		FT	\$46.00 /FT	
Guardrail Anchorage to Bridge (<40')		quad	\$1,500.00 /quad	
Guardrail, Type B or T (beyond GR anchorage to bridge, <200')		FT	\$22.00 /FT	
Guardrail Ending (end section)		EA	\$1,800.00 /EA	
Roadway Approach work (beyond approach pavement)		LSUM	LSUM	
Utilities		LSUM	LSUM	
Other				
TRAFFIC CONTROL Unit Cost to be determined by Region or TSC T&S				
Part Width Construction		LSUM	LSUM	
Crossovers		EA	\$275,000.00 /EA	
Temporary Traffic Signals		set	\$22,000.00 /set	
RR Flagging		LSUM	LSUM	
Detour		LSUM	LSUM	
Other				
CONTINGENCY (10% - 20% (use higher contingency for small projects))		%	\$0.00	\$0
MOBILIZATION (estimate at 10% as of 12/9/2014)	10	%	\$0.00	\$0
INFLATION (assume 3% per year, beginning in 2015)		%	\$0.00	\$0
CONSTRUCTION TOTAL				\$0

(DOES NOT INCLUDE PE & CE)

2015 **LAP - CAPITAL SCHEDULED MAINTENANCE - BRIDGE CSM COST ESTIMATE WORKSHEET** **REV 10/2015**

REGION: _____ FISCAL YEAR: _____ STRUCTURE NUMBER: (3-5 digit) _____
 ENGINEER: _____ DATE: _____ BRIDGE ID: _____
 LOCATION: _____ DECK AREA: _____ SFT _____ STR. TYPE: XXX-XXXX
 PRIMARY WORK ACTIVITY: _____ DECK DIM: _____

WORK ITEM	QUANTITY	UNIT	UNIT COST	TOTAL
DECK				
Patching Concrete, C-L (deck or barrier rail patching)		CYD	\$750.00 /CYD	
Penetrating Reseal/Sealer, Bridge Deck		SYD	\$23.00 /SYD	
Crack Sealer		FT	\$9.00 /FT	
Water Repellent Treatment, Penetrating (deck surface)		SYD	\$20.00 /SYD	
Concrete Surface Coating (concrete barrier rail, deck sub fascia)		SYD	\$20.00 /SYD	
Resealing Bridge Construction Joints (not poured rubber)		FT	\$12.00 /FT	
End Header Replacement		FT	\$50.00 /FT	
Concrete, Grade D		CYD	\$600.00 /CYD	
Reinforcement, Steel, Epoxy Coated		LBS	\$1.48 /LB	
Adhesive Anchoring of Horiz. Bars		EA	\$25.00 /EA	
Drain Casting, Type 1		EA	\$400.00 /EA	
Drain Casting, Type 2		EA	\$400.00 /EA	
Drain Casting Assembly		EA	\$1,000.00 /EA	
Deck Drain Extension		EA	\$600.00 /EA	
Downspout Replacement		EA	\$600.00 /EA	
Embedded Galvanic Anode		EA	\$15.00 /EA	
Other				
SUPERSTRUCTURE				
Spot Painting (95% clean, 20% coat)		*SFT	\$30.00 /SFT	
Patching Concrete, C-L (concrete beam patching)		CYD	\$750.00 /CYD	
Water Repellent Treatment, Penetrating (concrete fascia beams)		SYD	\$20.00 /SYD	
Concrete Surface Coating (concrete fascia beams)		*SYD	\$20.00 /SYD	
Other				
SUBSTRUCTURE				
Patching Concrete, C-L (substructure patching)		CYD	\$750.00 /CYD	
Paton Forming (vertical & overhead surfaces)		SFT	\$35.00 /SFT	
Concrete Surface Coating (vertical surfaces)		*CYD	\$20.00 /CYD	
Substructure Horizontal Surface Sealer (horizontal surfaces)		*CYD	\$30.00 /CYD	
Water Repellent Treatment, Penetrating		SYD	\$20.00 /SYD	
Other				
DEMOLITION				
Hand Chipping, Shallow (~3' deep)		SYD	\$110.00 /SYD	
Hand Chipping, Deep (~6' deep min)		SYD	\$175.00 /SYD	
Hand Chipping, Other Than Deck (vertical & overhead surfaces)		CFT	\$70.00 /CFT	
Structures, Rehabilitation, Ram Portions (slope protection removal)		*CYD	\$250.00 /CYD	
Structures, Rehabilitation, Ram Portions (drain casting removal)		*EA	\$500.00 /EA	
False Decking		SFT	\$1.10 /SFT	
Other				
MISCELLANEOUS				
Joint, Expansion, Eng (pavement joint)		FT	\$15.00 /FT	
Joint, Pressure Relief 4 inch		FT	\$72.00 /FT	
Embankment, Structure, CIP		CYD	\$20.00 /CYD	
Backfill, Structure, CIP		CYD	\$22.00 /CYD	
Slope Paving, Header		FT	\$60.00 /FT	
Slope Paving, Concrete		SYD	\$50.00 /SYD	
Slope Paving, Precast Concrete		SYD	\$65.00 /SYD	
Articulating Concrete Block System (ACB)		SYD	\$150.00 /SYD	
Other				
TRAFFIC CONTROL				
Maintaining Traffic (from TSC or Region T&S)		LS	LS	
Other				
MOBILIZATION			10 %	\$0
CONSTRUCTION TOTAL				\$0

(DOES NOT INCLUDE PE & CE)
 * Estimated as unit shown. Paid for as LUMP SUM

Incomplete Application Scoping

Bridge Railing/GR upgrades,
Joints, P&H, Zone Paint



Incorrect Project Scope

Application for Replacement



Increase Application Rating

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

Local Bridge Funding

- Local Bridge Program
 - Federal Funds
 - Off-System federal bridge funds
 - \$18.4 million
 - State Funds
 - ½ cent of gas tax
 - \$27.1 million
 - Pending ballot proposal will not change funding amount



Local Bridge Funding

- MAP-21 extension expires May 31, 2015
- Received off-system waiver thru May 31
- MDOT swapping off for on-system funds on project by project basis
- Will approve applications ½ On-System and ½ Off-System
- Ensure LBP uses all Federal Funds



2014 Bridge Applications

- 334 Bridge Applications Received
 - \$235 million in applications ~ \$48 million in funding
- 90 Projects selected for FY 2017
 - “Mix of Fixes” –50% Replacement – 50% Rehab/PM
 - 27% of total \$ selected are Rehab/PM

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 - “Mix of Fixes” –50% Replacement – 50% Rehab/PM
 - 27% of total \$ selected are Rehab/PM
- “Mix of Fixes” – improves long term bridge condition vs replacement only

Design - QC/QA

- FHWA and MDOT reviewing Local design consultant QC/QA
 - Establish Bridge Design QC/QA
 - Result of findings due to I-35W bridge failure
 - Design error, inadequate load capacity
 - 17 local projects selected for review
- MDOT developing Bridge Design QC/QA Guidance Document

Design - QC/QA

- Results of Review
 - Various levels of QC/QA on projects
 - Looking for consistency on QC/QA
 - FHWA guidance document on Bridge Design QC/QA
- Developing a QC/QA certification sheet in the Bridge Program Application

Bridge Asset Management

- Transportation Asset Management Council (TAMC)
- Bridge Asset Management workshops
 - Training Dates and Locations
 - April 28 – Cadillac
 - September 29 – Battle Creek
 - September 30 – Farmington Hills
 - Additional information from LTAP soon.

Bridge Asset Management

A large suspension bridge with two tall towers and cables, spanning a wide body of water. The sky is blue with scattered white clouds. In the foreground, there are green bushes and grasses. The bridge is the central focus of the image.

- Bridge Dashboard Upgrades
 - Real Time Data
- Bridge Asset Management Forecasting
 - Develop Regional Bridge Preservation Plan
 - Use MiBridge to evaluate bridge condition by Region
 - Optimize best mix of fixes by Region

Bridge Asset Management



Transportation Asset Management Council
MI Transportation Reporting Portal

Michigan.gov

The Official State of Michigan Website

Subscribe to TAMC Updates [Login](#)

Report Comparison

Bridge

Bridge Comparison

Traffic

Safety

Maintenance

Finance

Bridge
Conditions

Bridge Conditions



Regional Map



Year

Geographic Area

Name

Category

2013

State

State of Michigan

All Bridges

Number of Bridges

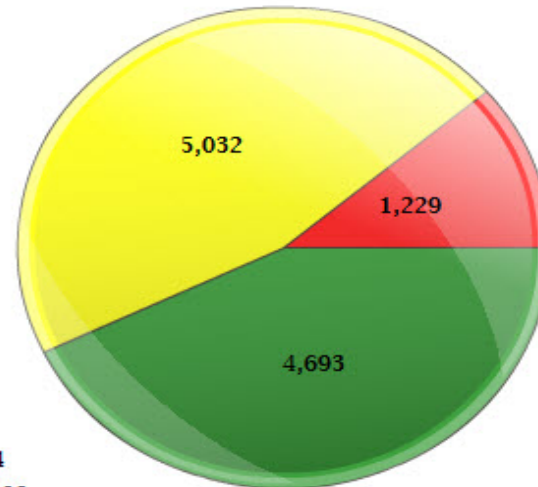
Total Deck Area (in sq. ft)

Structurally Deficient (SD) Deck Area



MICHIGAN TRANSPORTATION
ASSET MANAGEMENT COUNCIL

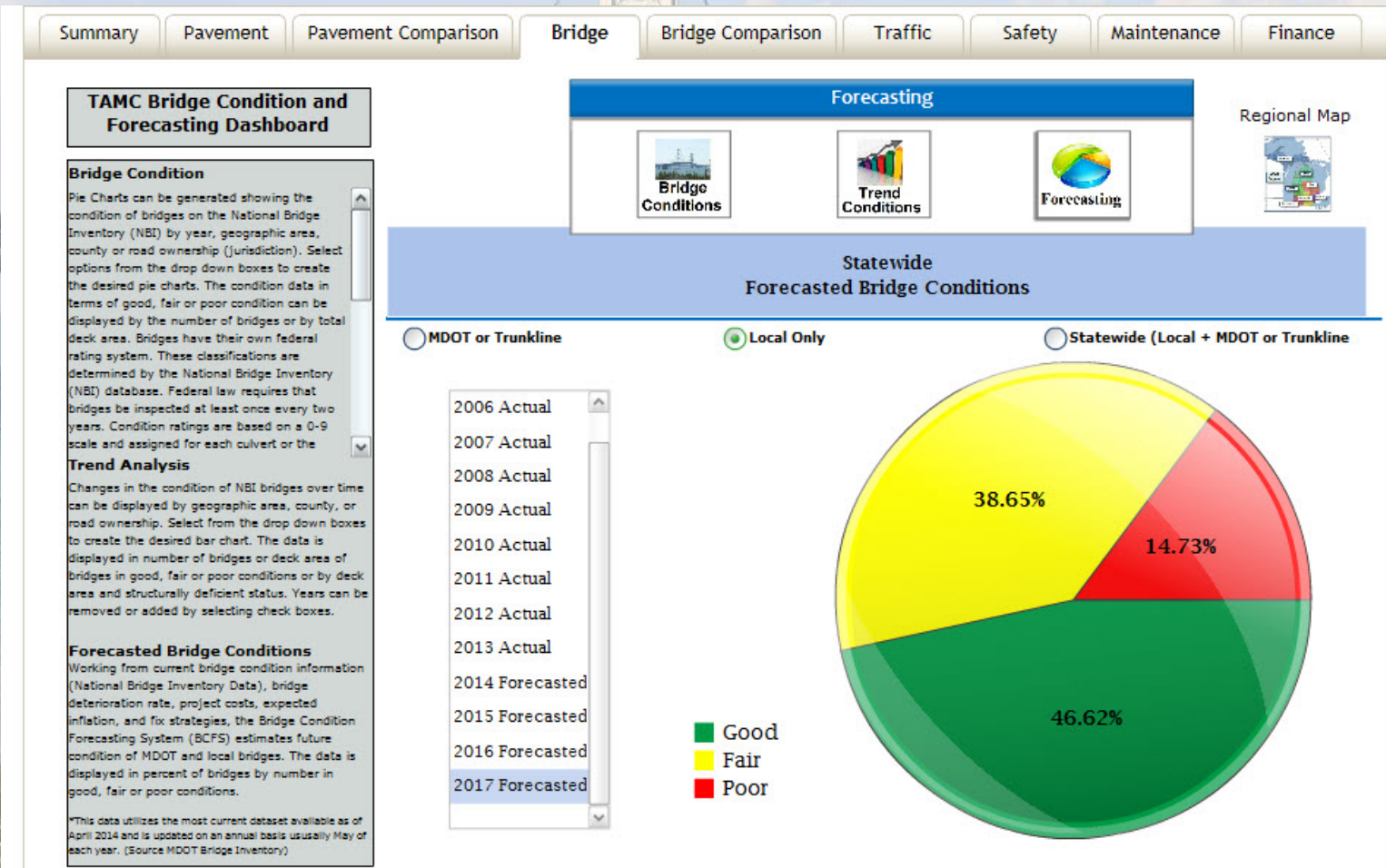
- Bridges Good
- Bridges Fair
- Bridges Poor



Number of Bridges	10,954
Total Bridge Deck Area (in sq. ft)	67,850,092
Structurally Deficient Deck Area (in sq. ft)	5,981,088

Bridge Asset Management

Forecasting



Local Bridge Program Website

- www.Michigan.gov/mdot
 - Click: Doing Business
 - Click: Local Agency Program
 - Click: Bridge Program
 - Details of the Local Bridge Program
 - Call for Projects
 - Call Letter and fillable estimate worksheets
 - 2014 Selected Projects List – FY 2017
 - Reference Guides, Manuals & Special Details

Regional Bridge Council Meetings

Financial and Program Update

Bay Region: April 24th @ 10:00am, Genesee CRC

Grand Region: May 4th @ 10:00am, Ottawa CRC

Metro Region: April 29^h @ 10:00am, St. Clair CRC

North Region: April 16th @ 10:00am, MDOT Gaylord Office

Southwest Region: April 27th @ 10:00am, Van Buren CRC

Superior Region: April 17th @ 8:30am, Marquette CRC

University Region: May 6th @ 9:00am, Ingham CRC

Bridge Unit Staff



- **Keith Cooper: Bridge Program Manager**
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- **Mark Harrison: Project Development Engineer**
 - Phone: (517) 373-2286
- **Chris Tennes: Staff Engineer**
 - Phone: (517) 335-2844
- **Pablo Rojas: Staff Engineer**
 - Phone: (517) 373-2232
- **Rita Levine: Staff/Transportation Engineer**
 - Phone: (517) 373-0041

Local Bridge Program

"I haven't met a Michigan driver yet who is satisfied with the condition of our roads...."

-Governor Snyder

Questions?

