

# Road Building in Michigan

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Today's Topics

-  Stakeholder Engagement
-  Innovative Contracting
-  Asset Management

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## Context Sensitive Solutions

MDOT definition of CSS:

- “A collaborative, interdisciplinary approach that **involves stakeholders** to develop a transportation facility that **fits its physical setting** and preserves scenic, aesthetic, historic, and environmental resources, **while maintaining safety and mobility**”



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## Stakeholder Engagement

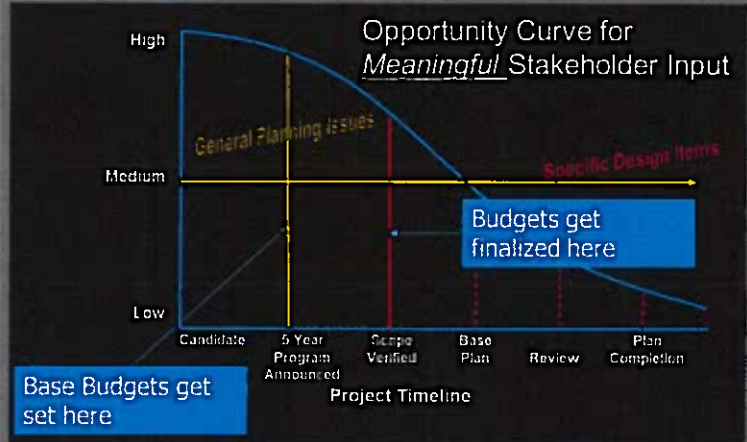
- Identify diverse stakeholder groups
- Early, often and continuous involvement
- Mutual learning experience
- Partnerships



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# Implementing Stakeholder Engagement

## The Opportunity Curve



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# Flexibility

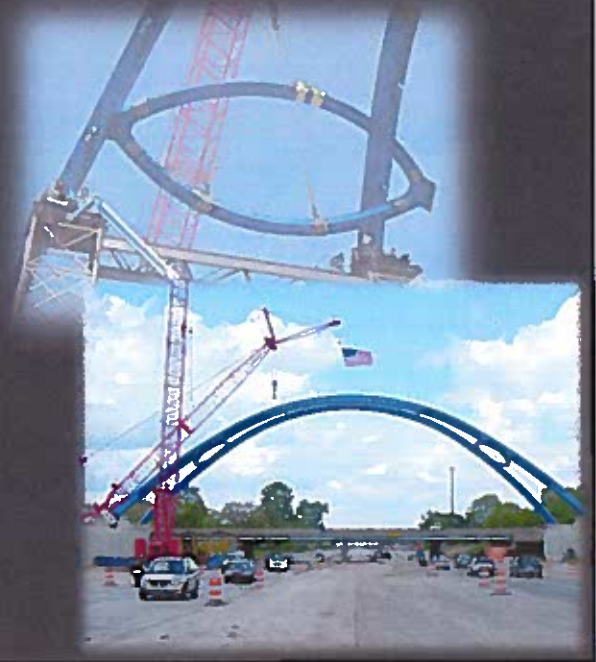
- Creative solutions
- Safety and Mobility
- Interdisciplinary approach
- Integrated transportation
- Aesthetics
- Economics



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## Effective Decision Making

- Considers community goals and values
- Follows state and federal regulations
- Promotes environmental stewardship
- Owner makes informed decisions



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## Bridge over Grand River M-43 (Saginaw Street), Lansing

- Successful partnership between MDOT, City of Lansing, FHWA, and Contractors
- Full bridge replacement
- Changed Saginaw Street from five to three lanes and added bike lanes
- Relocated river walk
- Worked with stakeholders on detours, river trail access, and look and fit of the new bridge



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## Intersection Safety Improvement US-131 @ M-186 Fife Lake Township, Grand Traverse County

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- 4 Public Meetings Held @ Fife Lake American Legion Hall
  - 2 Project Scoping/Info Meetings (2016 & 2017)
  - 1 Design Meeting (2018)
  - 1 Construction Meeting (2019)
- 2 Educational Outreach Presentations on Roundabouts
  - Kingsley Community Center in 2018
  - Fife Lake Public Library in 2019



Existing Intersection




Proposed Future Intersection

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## Non-Signalized Crosswalk Safety Improvement Grandview Parkway, Traverse City

- Hall Street Crosswalk installed in 2014
- City of Traverse City requested MDOT make safety improvements in 2016
- In-street signing installed 2017-2018
- Met with local stakeholder groups to discuss current and future crosswalk safety improvements:
  - City of Traverse City Planning & Engineering
  - Community Neighborhood Safety/Road Committees
  - Traverse Area Recreation Trail (TART)
  - Norte – local bike/walk advocacy organization




New Painting Pedestrian Crossings Paused For Grandview Parkway



Hall Street Crossing (2014-2016)



Hall Street Crossing with In-Street Signing Treatment (2017-2018)



Future Treatment 2019 (picture from Flint, MI)  
Pedestrian Hybrid Beacon (HAWK Signal)

MDOT presented proposal for pedestrian hybrid beacon at the Traverse City Commission meeting to gain formal support from the City

- Signals to be installed in May 2019 at two crosswalks

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## Cooley Bridge Rehabilitation Project

### M-55 over the Pine River

Detour on County Roads through Wellston Community,  
Manistee County

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- Urgent repair needs identified by MDOT in late 2017 for Cooley Bridge
- Two projects planned for bridge repairs and rehab scheduled for 2018 and 2019, required full detour due to bridge type and criticality of repairs.
- Two Public Meetings held at Norman Township Hall, Wellston
  - Design Meeting in 2018 for both projects
  - Construction Meeting in 2019 for 2019 project
- Feedback from Township, Manistee County Road Commission, and residents implemented to improve the safety of the detour route
  - Selected Speed Limit reductions along route
  - Temporary All-Way Stops
  - Improvements to pedestrian crossing areas
  - Relocation of detour to Snyder Road, pending 2019 Snyder Road repairs

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**Innovative Construction  
Contracting Guide**

## Innovative Contracting

[www.michigan.gov/MDOT](http://www.michigan.gov/MDOT)

- >> Doing Business
- >> Contractor Services
- >> Innovative Contracting

- Construction Manager/General Contractor (CMGC)
- Design-Build (DB)
- Job Order Contracting
- Fixed Price/Variable Scope (FPVS)
- Alternate Pavement Bidding
- Alternate Technical Concepts
- Public Private Partnerships (P3)

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## Traditional vs. Innovative Contracting

Traditional Process Design – Bid – Build	Innovative Contracting Techniques
<ul style="list-style-type: none"> <li>• Reduce cost &amp; schedule risk through detailed design and specifications</li> <li>• Longest time duration from concept to completion</li> <li>• Value achieved through low bid</li> </ul>	<ul style="list-style-type: none"> <li>• Share risk where appropriate</li> <li>• Reduce overall duration from concept to completion</li> <li>• Value achieved through contractor innovation &amp; input (over and above typical minimum specifications)</li> </ul>

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## Construction Manager/General Contractor (CMGC)

### When to Use

Highly specialized and complex work

Owner desires to shift risk to contractor in exchange for Guaranteed Max Price

### Process

Select Contractor By RFQ

Engage Contractor in Design Process

Independent Cost Estimate

Negotiate Guaranteed Max Price or go to Low Bid



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## Design-Build (DB)

**When to Use**

- Overall schedule to completion is critical
- Opportunity for design & construction innovations
- Larger scope and scale projects
- Limited unforeseen issues or schedule risk items

**Process**

- Shortlist Contractor/ Consultant Teams by RFQ
- Complete 30% design plans, specify desired outcomes, standards
- Award by low bid or best-value
- Dedicate resources for review/approval of stage submittals



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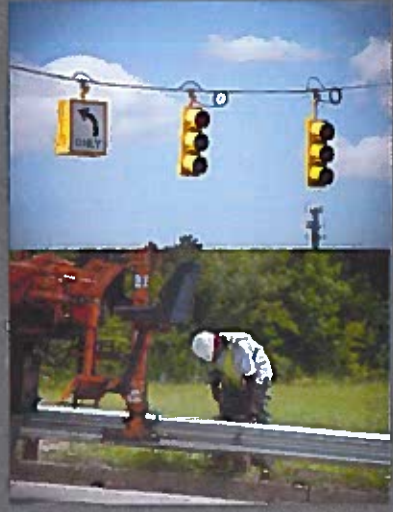
## Job Order Contracting (a.k.a. Indefinite Delivery/Indefinite Quantity)

**When to Use**

- Timeliness of work is urgent once identified.
- Clearly defined work items; standardized and repetitive

**Process**

- Identify frequently used unit items of work
- Competitively bid on unit prices
- Determine work areas and complete design
- Issue Work Orders to complete construction



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## Fixed Price/Variable Scope (FPVS)

**When to Use**

- Work type is relatively simple
- Work limits easily split or adjusted
- Cost estimate exceeds available budget

**Process**

- Obtain FHWA Approval
- Clearly define division of work
- Bidder with greatest amount of work wins
- If multiple bidders with the max work then price wins.



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## Alternate Pavement Bidding (APB)

**When to Use**

- New or Reconstructed pavement projects
- Life Cycle Cost Analysis results are within 10%
- Competitive bidding environment

**Process**

- Complete Pavement Designs & LCCA
- Provide Plans for both Concrete & Asphalt Alternatives
- Apply Equalization Factor to Pavement Bid Items
- Award to the Low Bid using the equalized LCCA in the price



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## Alternate Technical Concepts (ATC)

**When to Use**

- High potential for contractor innovation
- High potential for constructability efficiencies

**Process**

- Establish parameters for allowance of ATC concepts
- Advertise for longer period of time
- Confidential review, approve/reject ATCs
- Award by Low Bid



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## Public Private Partnerships (P3) (Design-Build-Finance, Design-Build-Finance-Operate-Maintain)

**When to Use**

- Need to accelerate capital improvements faster than annual budgets allow
- High potential for contractor innovations
- Very large projects with revenue potential or revenue certainty
- Desire to have developer engaged in long term asset management/maintenance

**Process**

- Shortlist Developer/ Contractor/ Consultant Teams By RFQ
- Award by best-value or low bid
- Concurrent/Phased Design Reviews like Design Build
- Developer Team finances, paid back with lump sum milestone and/or availability payments

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## Asset Management

[www.michigan.gov/MDOT](http://www.michigan.gov/MDOT)  
>> Projects and Programs  
>> Asset Management

*Asset management is a systematic process of maintaining, upgrading and operating physical assets cost-effectively*

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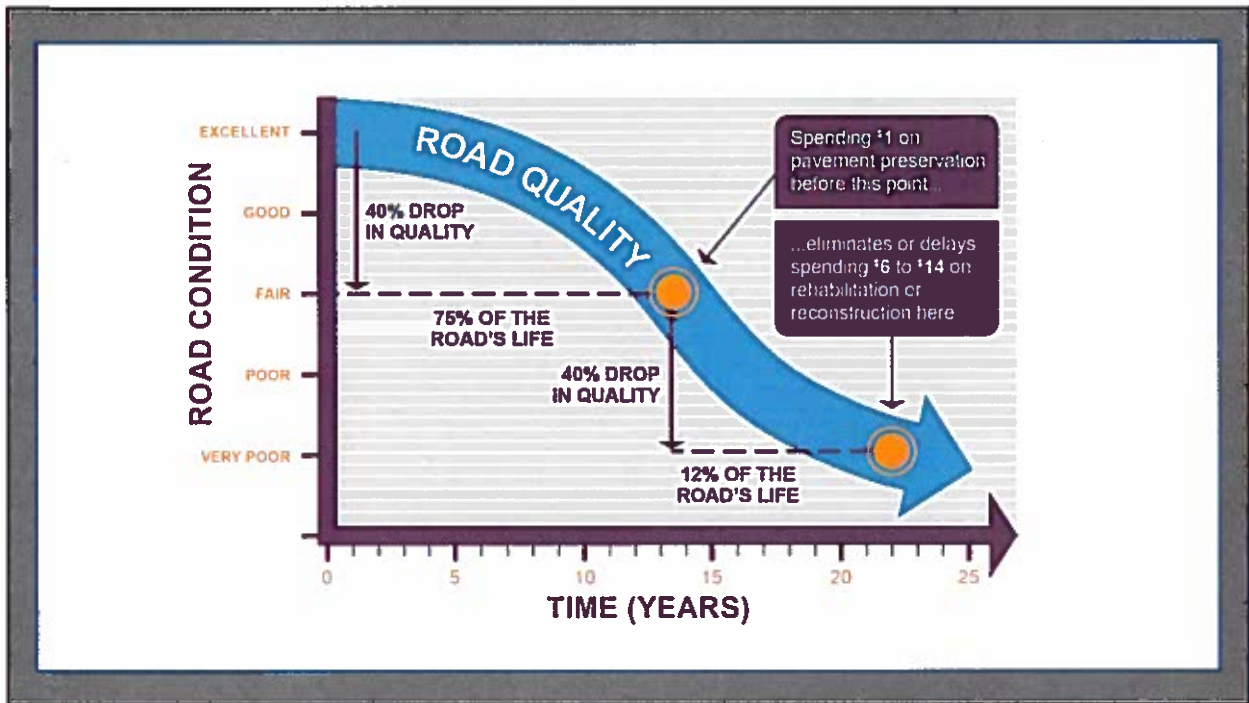
## MDOT Pavement Condition Data Collection

2-Year Collection Cycle (RFP-Selected Vendor)    Wheelpath Rut-Depth Measure (Asphalt)    Cracking Type/Severity Survey

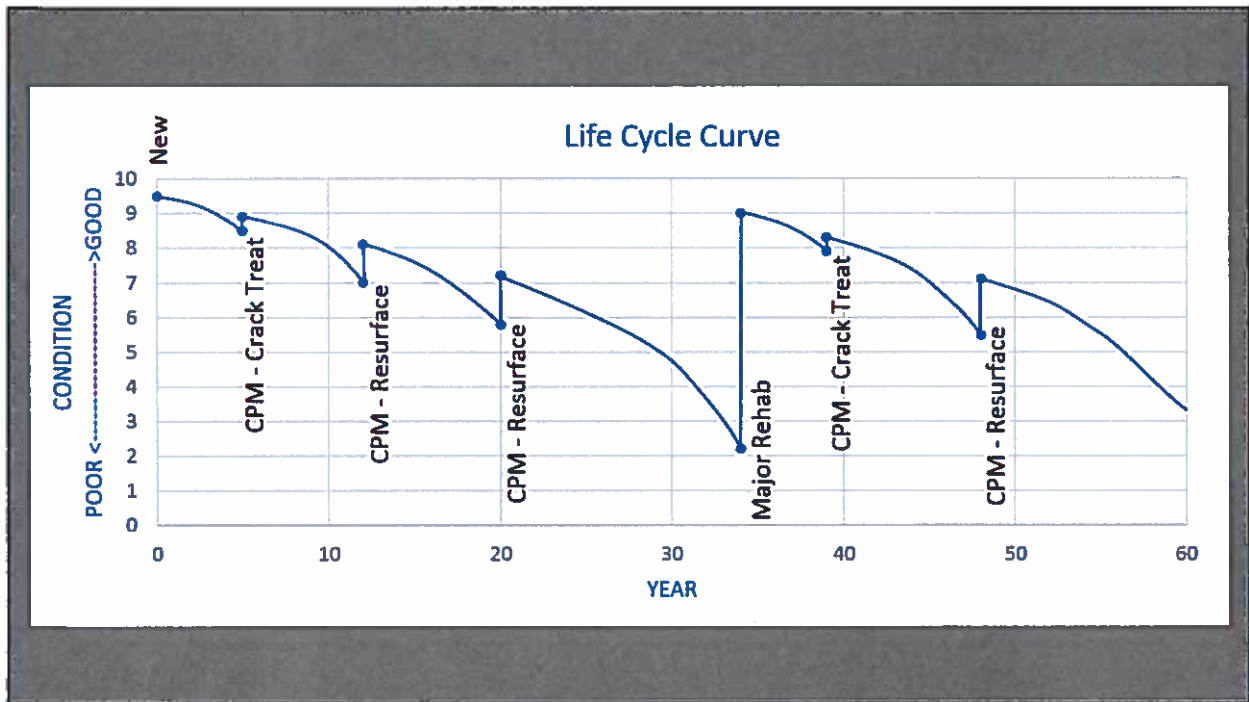
Ride Quality Measure (International Roughness Index)

Joint Fault-Height Measure (Concrete)

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## Transportation Asset Management Plan

- Required by Federal law
- Variation because of reporting requirements
  - Federal system priorities
  - National scale performance metrics
- Similar conclusion: a significant gap exists between goals and available funding

**Initial Transportation Asset Management Plan**  
 Certified July 2018

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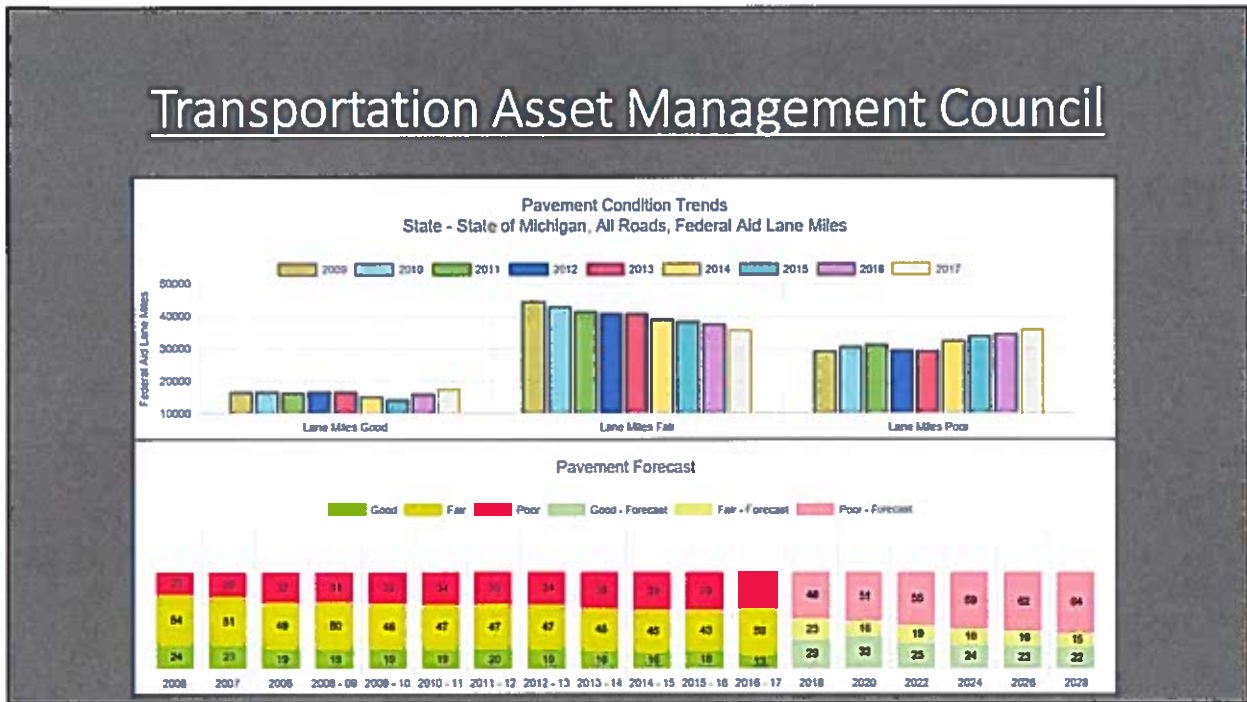
## Transportation Asset Management Council

- Established in 2002 by PA 499
- Rates Pavement & Bridge Conditions across multiple jurisdictions
  - 40,000+ lane miles of federal aid eligible routes
  - 10,000+ bridges
- Training
- Dashboards & Mapping
- Agency Resources

# MICHIGAN'S 2017 Roads & Bridges ANNUAL REPORT

Michigan Transportation Asset Management Council

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# Questions?

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