



# Quality & Oversight of MDOT's Contracted Services

Presentation to the House  
Transportation Committee

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# Today's Topics



General Overview of MDOT's Contracting



Consultant Contracting



Construction Contracting



Warranties



Innovative Contracting

# MDOT's Contracted Services

## Consultant Contracts

Planning

Surveying

Design Engineering

Construction Engineering,  
Inspection & Testing

## Construction Contracts

Design-Bid-Build

Design-Build

Other Innovative  
Contracting (P3s, etc.)

## Other Services

Miscellaneous Services  
(Janitorial, Materials  
Procurement)

Contracts with Public  
Agencies for specific  
activities (Road  
Maintenance, Transit  
Activities, etc.)

# MDOT's Consultant Services

## Consultant Contracts

Planning

Surveying

Design Engineering

Construction Engineering,  
Inspection & Testing

Contracted Consultant Services	Value	% of Total
Design Engineering	\$28,993,905	61%
Construction Engineering, Inspection & Testing	\$47,046,740	56%

Source: FY 2020 Section 613 Report

- Vendors Pre-qualified
  - Financial Capacity
  - Technical Capacity for specific activities
- Contracts selected using Qualifications Based Selection (in accordance with Brooks Act)
  - Request for Proposals
  - Proposals Scored on Quality of Response
  - Contract Terms Negotiated

# MDOT's Consultant Services

## Consultant Contracts

Planning

Surveying

Design Engineering

Construction Engineering,  
Inspection & Testing

- Monitoring Performance & Quality
- Consultant Evaluations
- Dealing with Errors & Omissions
- Auditing Consultant Costs

# MDOT's Contractor Services

## Construction Contracts

Design-Bid-Build

Design-Build

Other Innovative Contracting (P3s, etc.)

- Contractors Pre-qualified
  - Financial Capacity
  - Technical Capacity for specific activities
- Contracts selected using Low Bid
  - Advertise for Bids (3-6 weeks)
  - Electronic Bidding Process
  - Unbalanced Bid Review
- Contract Oversight
  - Contractor performs Quality Control (QC)
  - MDOT or our consultant performs Quality Assurance (QA) testing, inspection, measurement

# MDOT's Contractor Services

## Construction Contracts

Design-Bid-Build

Design-Build

Other Innovative Contracting (P3s, etc.)

- Contract Documents
  - Project PDF Plans (all electronic)
  - Moving toward 3D model
  - MDOT Standard Specifications & Special Provisions
- MDOT's Standard Specifications are based on National Standards – AASHTO and ASTM
  - Define the nature of the work
  - Required material properties & testing requirements
  - Quality of workmanship
  - Measurement & payment
  - DOES NOT SPECIFY MEANS & METHODS

# Material Quality & Testing

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- Aggregate Gradation & Quality
- Density of Compacted Materials
- Qualified Products List
- Paving (HMA & Concrete)
  - Contractor QC, Owner QA
  - Percent Within Limits (PWL)
- Training & Certification of Testers
- Certification of Laboratories





# Engineering and Inspection Performance

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## Seven Year Summary of MDOT Projects

<b>Calendar Year</b>	<b>Original Contract Cost</b>	<b>Final Contract Cost</b>	<b>Percent Difference</b>
2014	\$645,898,553.12	\$649,413,716.71	0.54%
2015	\$709,329,893.84	\$712,559,685.99	0.46%
2016	\$690,303,760.44	\$704,409,643.58	2.04%
2017	\$865,144,563.78	\$862,462,531.03	-0.31%
2018	\$625,072,360.55	\$634,821,481.36	1.56%
2019	\$1,116,644,265.97	\$1,116,217,219.57	-0.04%
2020	\$827,434,317.54	\$831,112,832.97	0.44%

# Rebuilding Michigan Bid Results to Date

MDOT Region	Major Route	Location	Engineers Estimate	Low Bid	Bid Difference	Percent Difference
University	I-496	I-96 to Lansing Road	\$52,232,908.33	\$47,817,642.22	-\$4,415,266.11	-8.45%
Southwest & University	I-69	I-69 Corridor	\$214,129,045.00	\$210,180,169.69	-\$3,948,875.31	-1.84%
Southwest	I-94 & US-31	Berrien County	\$133,130,299.00	\$121,483,900.00	-\$11,646,399.00	-8.75%
University	I-94	I-94 Near Jackson	\$97,350,893.92	\$117,137,913.01	\$19,787,019.09	20.33%
Bay	I-69	Cox Doty Drain to M-19	\$46,759,163.34	\$37,806,489.95	-\$8,952,673.69	-19.15%
Grand	I-196	130 <sup>th</sup> Ave to US-31	\$35,209,172.87	\$33,580,522.97	-\$1,628,649.90	-4.63%
Metro	M-59	Romeo Plank to I-94	\$61,343,654.73	\$60,974,226.42	-\$369,428.31	-0.60%
Bay	I-69	Fenton Road to M-54	\$80,685,546.16	\$100,196,390.96	\$19,510,844.80	24.18%
University	I-69	I-96 to Lansing Road	\$62,808,441.31	\$65,582,371.22	\$2,773,929.91	4.42%
<b>Cumulative To Date</b>			<b>\$783,649,124.96</b>	<b>\$794,759,626.44</b>	<b>\$11,110,501.48</b>	<b>1.01%</b>

# Warranties

Distress thresholds for the specifications are based on Michigan pavement performance data

Contractor must carry a Warranty Bond for the life of the warranty

Contractor may add risk cost to their unit bid prices

4,653 Warranties since 1997

632 Active Warranties

11.7% have required corrective action





## 2 Year Warranties

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Chip Seals  
Micro-Surfacing  
Ultra-Thin Overlays  
Hot Mix Asphalt Crack  
Treatment  
Bridge Painting  
Concrete Surface Coating



## 3 Year Warranties

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Non-Structural Hot Mix  
Asphalt Overlays  
  
Cold Mill and Hot Mix  
Asphalt Resurfacing  
  
Paver Placed Surface  
Seal



## 5 Year Warranties

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New Pavement  
Rubblize & Overlay  
Crush & Shape & Overlay  
Multiple Course Hot Mix  
Asphalt Overlay  
Cold Mill and Multiple Course  
Hot Mix Asphalt Overlay  
Bridge Deck Overlays



Warranty Acceptance

Warranty begins when the road is opened to traffic



Inspection

Interim and Final Inspections are conducted  
Distresses are measured



Corrective actions may be required if  
warranty thresholds are exceeded

Typically at the end of the warranty period



Conflict Resolution Process to resolve disputes

# Warranty Process



# Innovative Contracting

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





# Design - Build

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- Transfers some schedule risk to the DB team
- Transfers some design quality risk to the DB team
- QC/QA risk allocation stays the same. MDOT retains long-term performance risk.
- Accelerates overall delivery schedule (concept to completion)
- Promotes innovation in design details, construction approach





# Public – Private Partnerships

(Design-Build-Finance-Operate-Maintain)

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- Transfers schedule risk to the P3 team
- Transfers design quality risk to the P3 team
- Transfers QC/QA risk to the P3 team
- Transfers long-term performance risk to the P3 team
- Changes the role of the owner agency to “verification” vs. “inspection & testing”
- Promotes innovation in design details, material selection, construction approach



# Questions?

Laura Mester

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