



Alternative Contracting Methods

Michigan Department of Transportation

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Agenda

- Overview of Primary Contracting Methods
 - Design Bid Build
 - Design Build
 - Construction Manager/General Contractor
 - Fixed Price – Variable Scope
 - Public Private Partnerships
 - Other
- Project Selection Process
- Upcoming Project on I-75
- Q&A

Design-Bid-Build (DBB)

- Most Common Method to Construct a Project
- MDOT Owned Design
- Low Bid Procurement
- Contractor Constructs Based on the MDOT Design

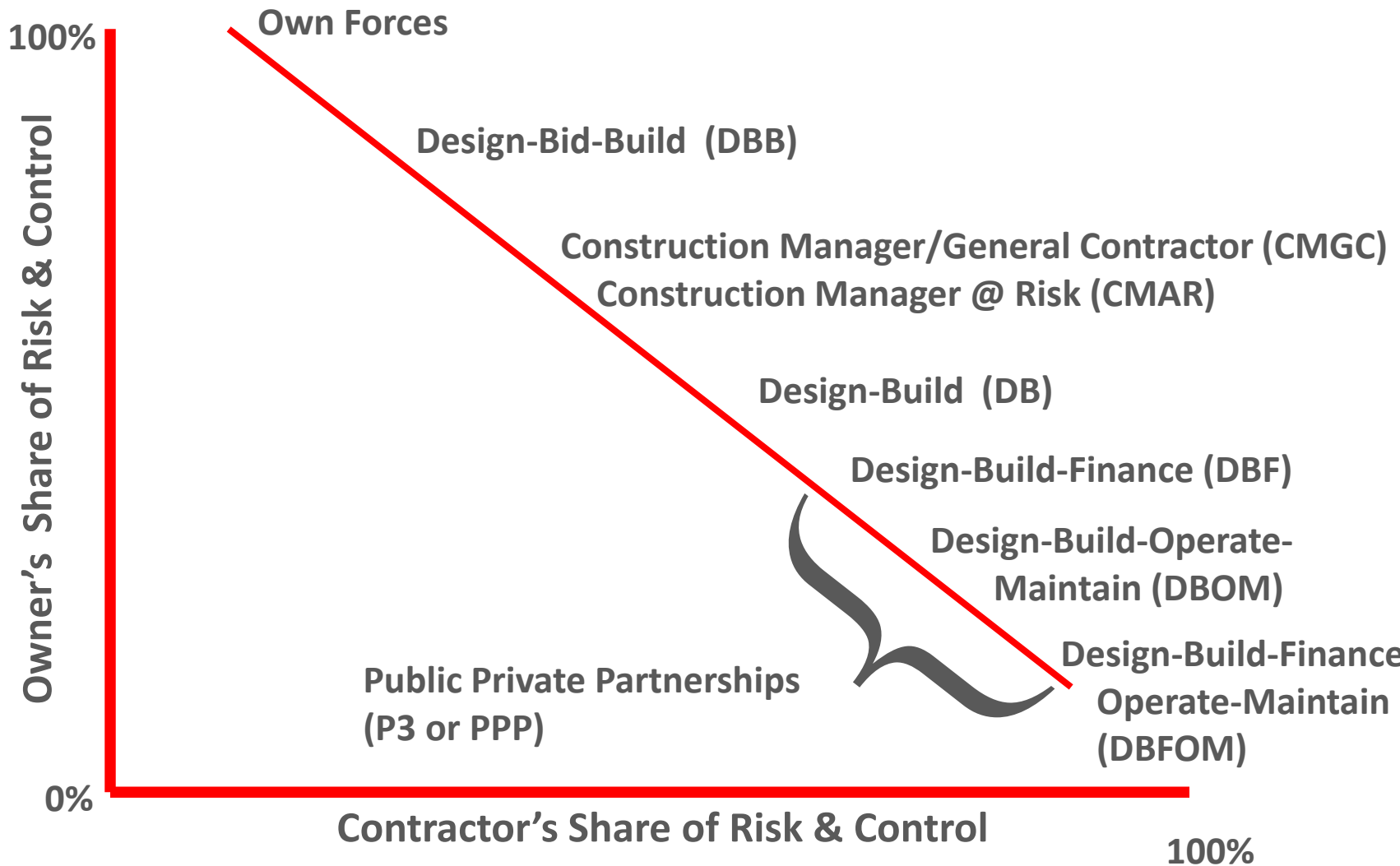
Benefits

- Traditional and Accepted
- Full Control of Design
- Standards in Place for Design & Construction

Challenges

- MDOT Carries Design Risk
- Limits Innovation

Contracting Considerations



Design-Build (DB)

- **Project Selection**

- Limited Initial Design by Owner
- Request for Qualifications (Shortlisting)
- Request for Proposals

- **Project Delivery**

- DB Team Completes Design & Construction

Benefits

- Expedited Delivery
- Creativity
- Cost Effective

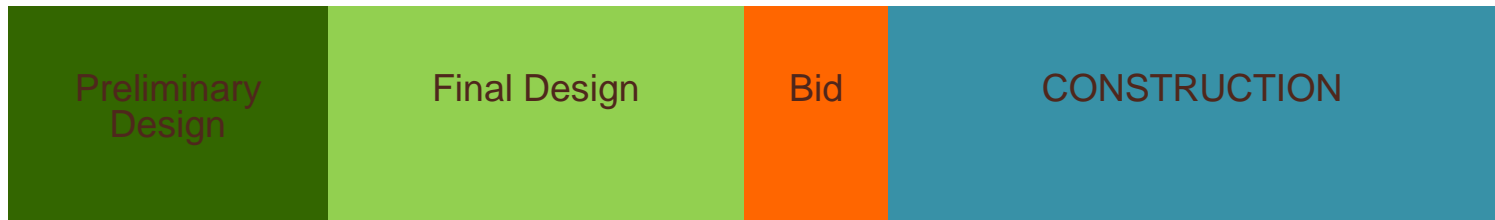
Challenges

- Certain Permitting / Third Party Work
- Timing
- Different Levels of Control & Responsibility

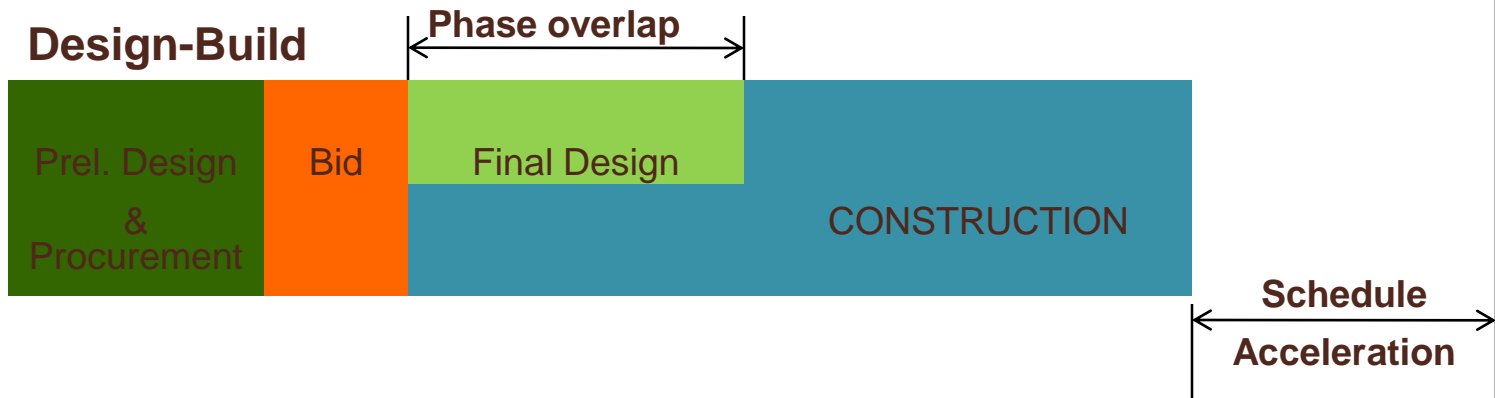


Time Savings in Design-Build

Design-Bid-Build



Design-Build



Project Timeline

Construction Manager/General Contractor (CMGC)

- **Procurement Process**

- Qualifications Based Selection of the Contractor
- Integrated Design Process
- Negotiated Final Price

- **Project Delivery**

- Traditional Construction Based on Design Plans
- Traditional Construction Oversight Activities
- Payment Methodology May Change

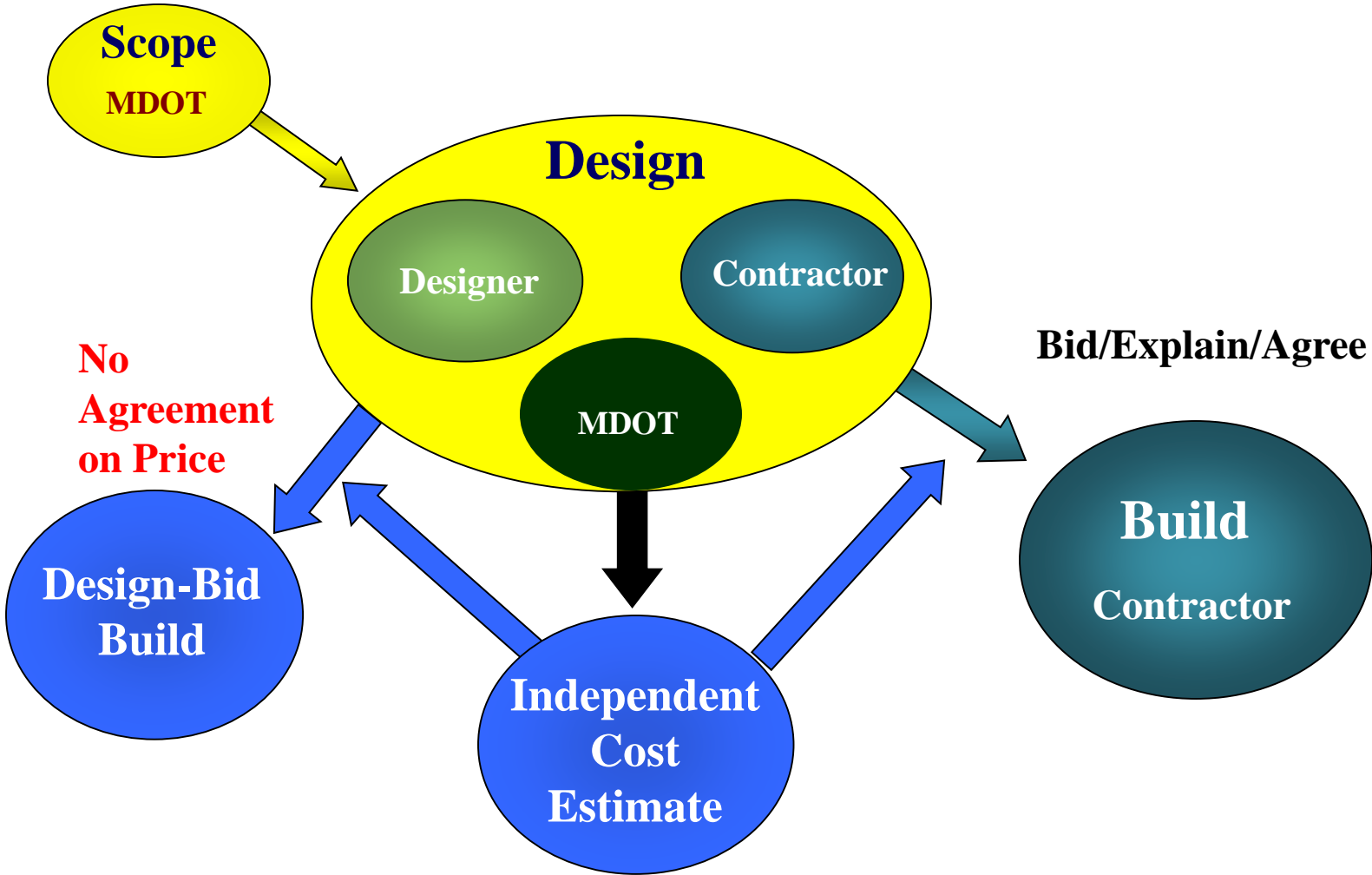
Benefits

- Developing New Innovations
- Schedule
- Staging & MOT
- Permitting

Challenges

- Selection Process
- Price Negotiations

Construction Manager/General Contractor (CMGC) Process



Fixed Price/Variable Scope (FPVS)

- More Infrastructure Needs than Available Funding
- Maximizing the Amount of Work That Can be Completed within the Available Funding

Benefits

- Maximize Work
- Constrained Budgets

Challenges

- Bidding Requirements
- May Get A Smaller Project
- Some Limitations on FPVS Use

Fixed Price/Variable Scope (FPVS) Procurement Model

Typically the Maximum Amount of Work Wins
Bid w/o Adjustment of the Max Price

A **B** **C** **D** **E**

Available Project Limits: Fixed Cost of \$1,000,000

Bidder #1 – Winning Bid

for \$1,000,000

Bidder #2 - 4th Place

Bidder #3 – 2nd Place

(10% Less work)

Bidder #4 – 3rd Place

What we want to accomplish

Public Private Partnerships (PPP or P3)

- Transfer of additional responsibilities after construction is completed for a specific period of time
- Can include Finance, Operations and/or Maintenance Responsibilities (i.e. DBF, DBOM, DBFOM)
- MDOT Retains Ownership of Facility
- Most Utilize a Design Build Component
- Most Commonly Used on Large Projects

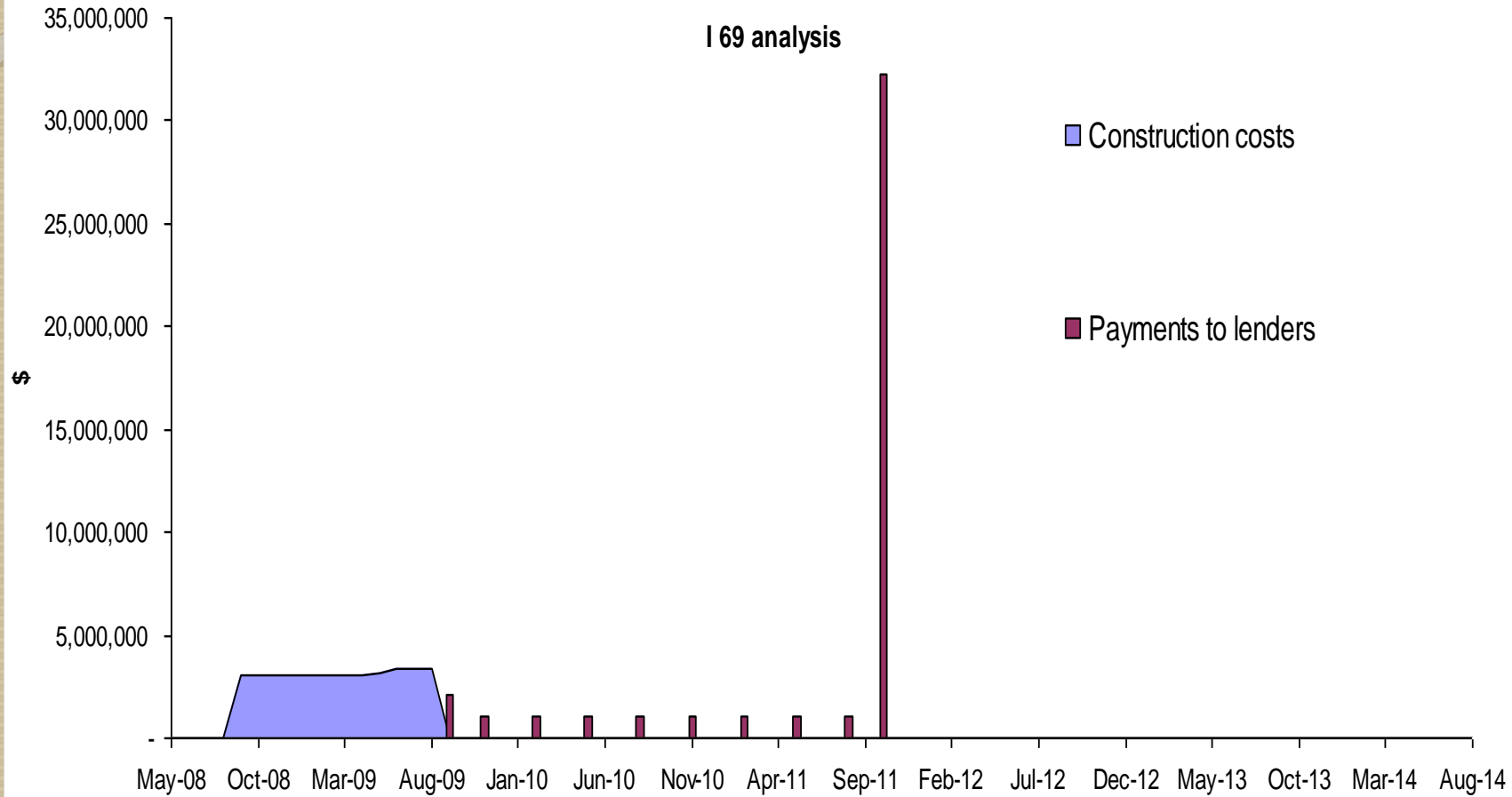
Benefits

- Expedited Delivery
- Creativity
- Risk Transfer
- Funding

Challenges

- Control & Responsibility
- Defining Requirements in Contract

Example DBF Payment Schedule



Additional Contracting Tools

- A + B
- Lane Rental
- Alternate Pavement Bidding
- Job Order Contracting
- Alternate Technical Concepts
- Best Value Selections

Selection Process

- Step 1: Project Identification By Project Office
(DB, CMGC, P3, APB, JOC, *All* FPVS)
- Step 2: Innovative Contracting Committee Review
(DB, CMGC, P3, APB, JOC, *All* FPVS)
- Step 3: Engineering & Operations Committee Review
(DB, CMGC, P3, APB, JOC, *Some* FPVS)
- Step 4: Director Review
(CMGC, P3)
- Other: Federal Highway Administration, Industry Coord.

Modern Freeways: An Economic Priority



12 of the top 20 Fortune 500 Companies

2.6 million jobs within the region



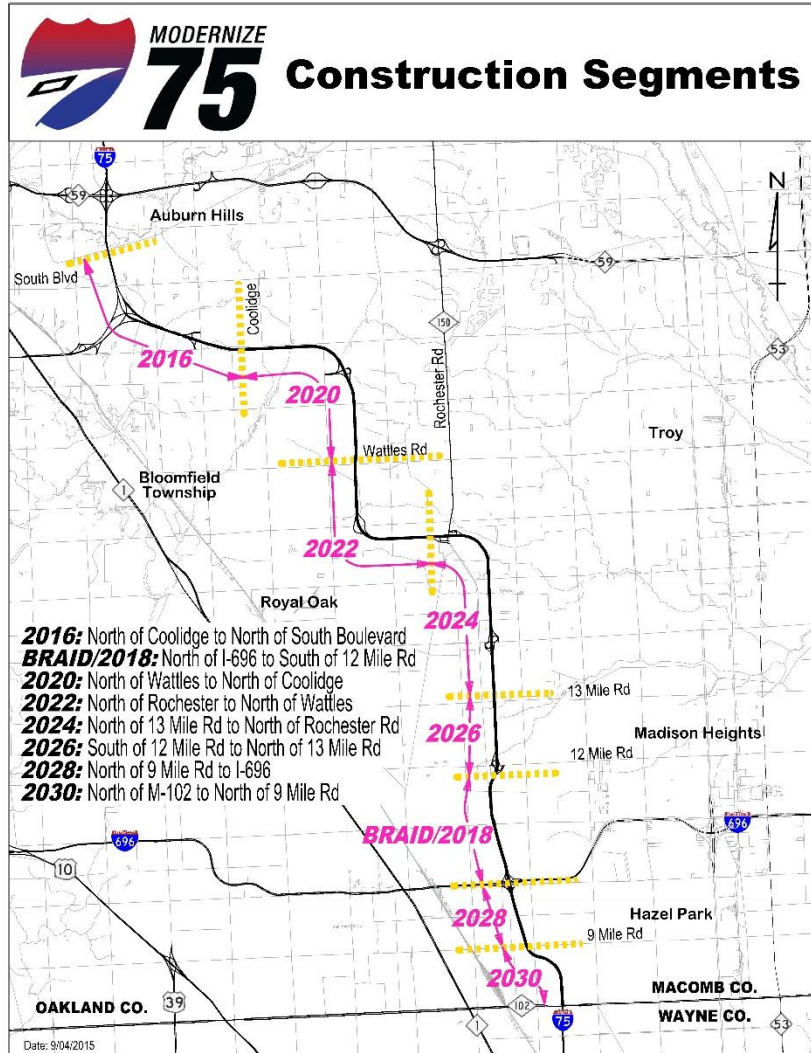


**MODERNIZE
75**

- Eight Mile Road (M-102) to Square Lake/M-59
- Modernization of 1960's era Interstate Freeway
- Driven by poor condition, safety & congestion
- Rebuild freeway, bridges, drainage, adds HOV lane
- 170,000 vehicles/day
- \$1.5 B investment



Corridor Overview



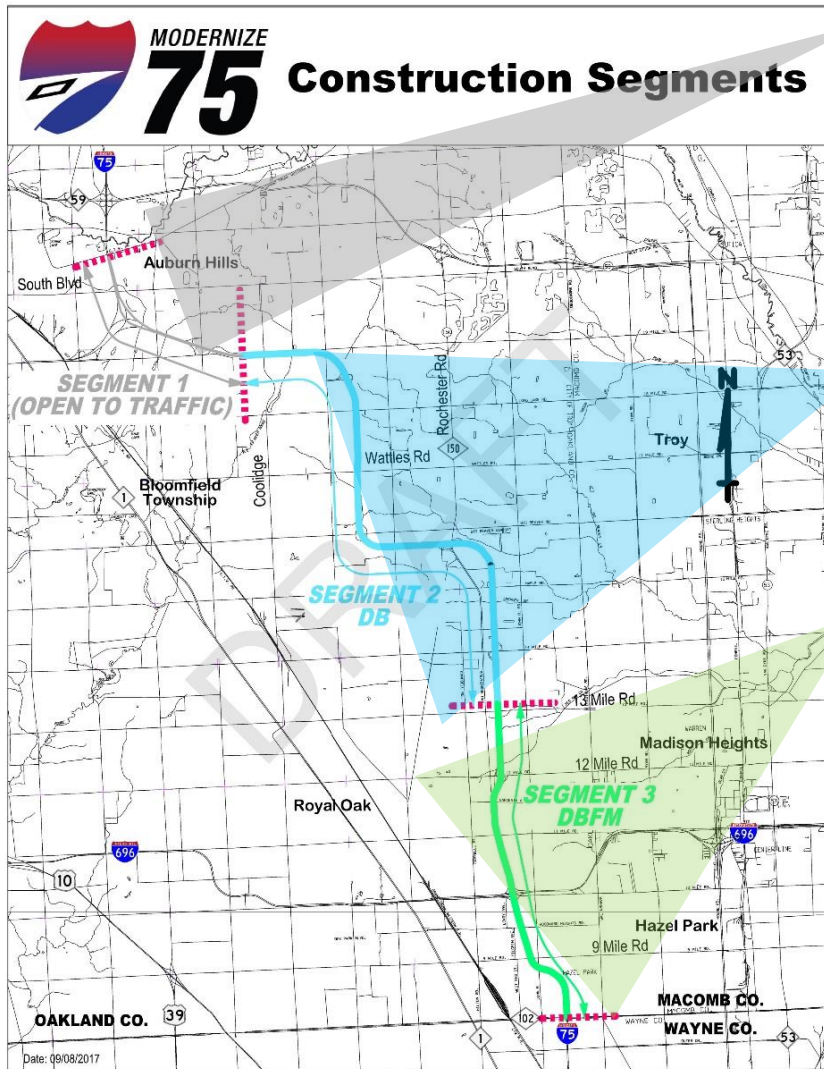
Original Plan:

- 8 segments
- Pay as you go, roughly \$200 M every other year for 16 years

Decision to Accelerate:

- Reduce the delay, inconvenience and negative economic impact of 16-18 years of construction
- Realize the benefits of the entire project sooner
- Invite innovation and efficiencies
- Take advantage of historically low cost of capital financing

Corridor Overview



- **Segment 1: Design-Build**
 - 3 miles of suburban fwy
 - Square Lake interchange
 - Opened September, 2017
- **Segment 2: Design-Build**
 - 8.5 miles of suburban fwy with open drainage
- **Segment 3: Design-Build-Finance-Maintain (DBFM)**
 - 5.5 miles, mostly urban fwy + 4 mile drainage tunnel
 - 30-year Contract Term with major asset life-cycle maintenance

DBFM Contract Overview



Freeway: 5.5 miles Reconstruction of the existing freeway lanes and service drives

- Addition of HOV/general purpose lanes
- Rebuilding and expand noise walls & retaining walls
- Replace 22 vehicular bridges and 6 pedestrian bridges
- Construct new “braided ramp” to improve safety & congestion at I-696

Drainage Tunnel: 4 miles under northbound service drive in Madison Heights with one pump station

DBFM Structure

30 Year Contract

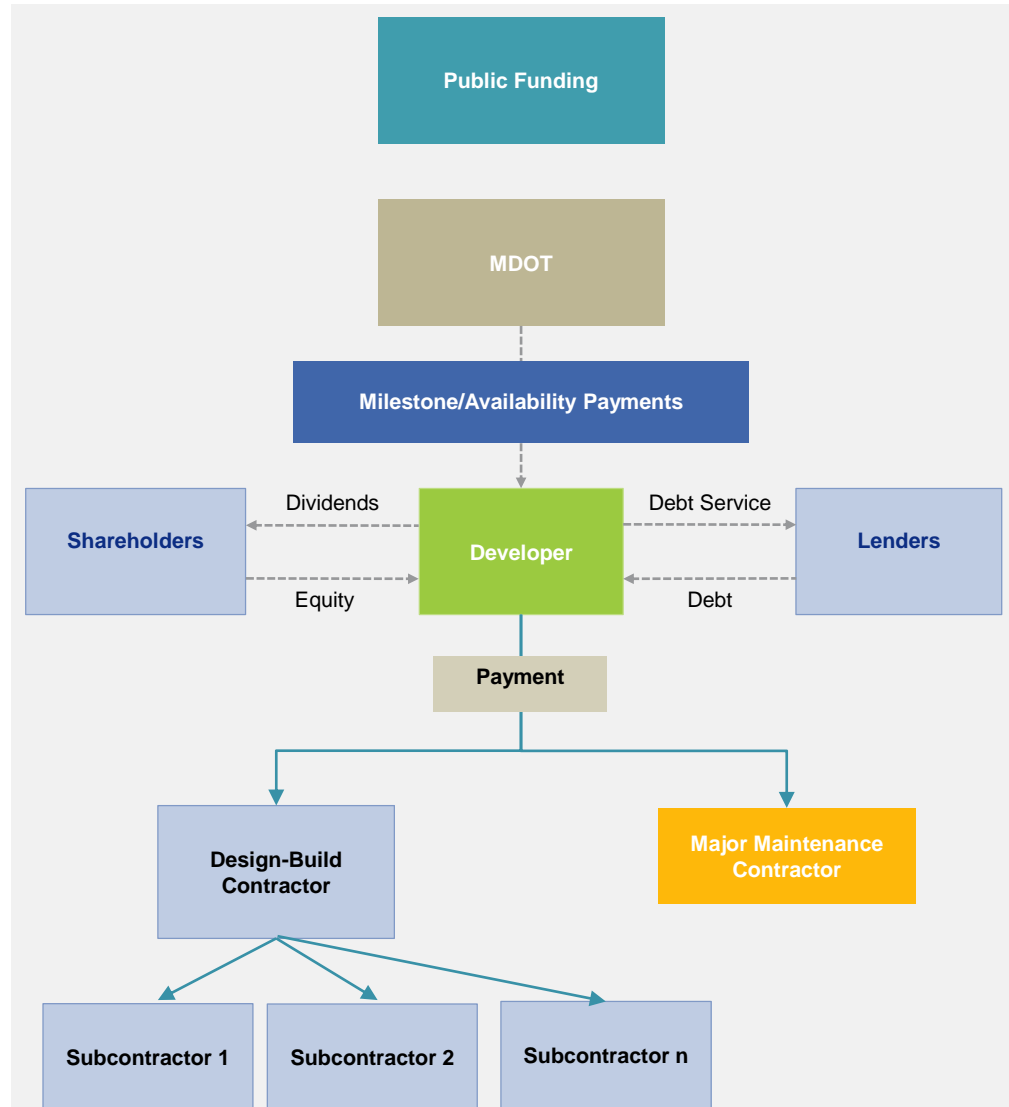
- 3-5 yrs Design-Build
- Remaining yrs Maintenance Period (MP)

Procurement

- Short list most qualified teams (3-4)
- Award to Low Bid

Payment

- Monthly availability payments during MP
- Includes all capital (DB), maintenance & financing
- Incentive to complete DB
- Deductions for failure to achieve performance



Maintenance Period

- MDOT currently has overall operations and maintenance responsibilities for I-75
 - MDOT currently subcontracts certain routine maintenance and operations activities for I-75
- DBFM contract includes responsibility for limited routine maintenance and **all long term, life-cycle asset maintenance for major asset categories**

MDOT Routine Maintenance

- Litter Pick-up
- Guardrail Repair
- Mowing & Sweeping
- Snow Removal
- Graffiti Removal
- ITS System Equipment
- Signing and Striping
- Storm water drainage & catch basin cleaning
- Freeway Lighting



DBFM Standard, Routine Maintenance During Construction

By DBFM Developer

- Pot hole repair
- Maintaining positive drainage to avoid flooding in the work zone
- Sweeping
- Pavement patching
- Shoulder repair
- Fixing damage caused by traffic, such as sign damage, guardrail damage, etc.




DBFM Long Term, Life-Cycle Asset Maintenance

By DBFM Developer

- Pavement
- Bridge Structures
- Pedestrian Overpasses
- Retaining Walls
- Noise Walls
- Landscaping Renewal
- Fencing
- Tunnel inspections & repairs
- Pump repair, rehabilitation and/or renewal
- Pump station rehabilitation & renewal



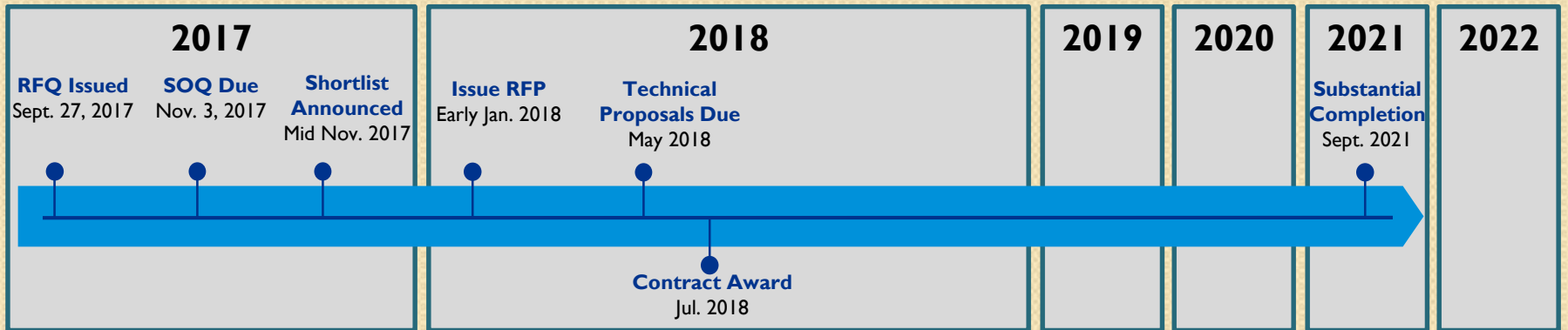


DBFM Developer Responsibilities During Maintenance Period

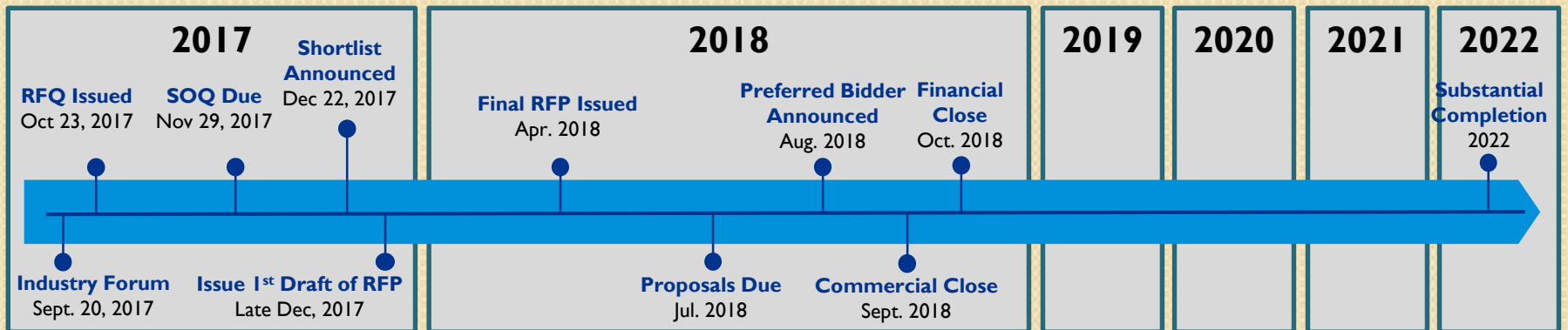
- Prepare Maintenance Management Plan
- Implement a Proactive Maintenance Management System
- Correct Defects
- Perform Inspections
- Implement Preventive & Renewal Work
- Coordinate and communicate with MDOT and stakeholders as appropriate

Procurement Timeline

Segment 2 DB Procurement and Construction



Segment 3 DBFM Procurement and Construction*



*Segment 3 DBFM Project term will include up to 30 years of major maintenance after substantial completion

More Information

Visit the I-75 Modernization DBFM project website for posted information.

Updates issued **every Monday at 4pm**

<http://www.michigan.gov/mdot-i75-dbfm>

For questions and comments, please email:

MDOT-I-75-DBFM-Project@Michigan.gov



Questions

Thank You!

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