

**MICHIGAN DEPARTMENT
OF
TRANSPORTATION
&
Innovative Contracting**

www.Michigan.gov/designbuild

Chris Youngs, PE
Innovative Contracting Manager
YoungsC1@Michigan.gov

MDOT's History in Innovative Contracting

30+ Design-Build (DB) projects in the 1990's

- Primarily Bridge Rehabilitations
 - Detail Build
- Bridge Replacements and Freeway Reconstruction
 - Plans Developed to approximately 30%
- Intelligent Transportation System (ITS) Project

Construction Manager at Risk

- Passenger Ship Terminal and Wharf Facility
 - Detroit Wayne County Port Authority project administered through MDOT Bureau of Passenger Transportation and MDOT Local Agency Programs

2008 Highways for Life Project on M-115

- Road Rehabilitation Project
- Best-Value Selection
- Performance Based Contracting



MDOT's History with Innovative Contracting

2008 - Design/Build/**Finance** Projects

- Typical Freeway and Bridge Construction Projects
- Unique Funding

2009 -2011 Design Build Projects

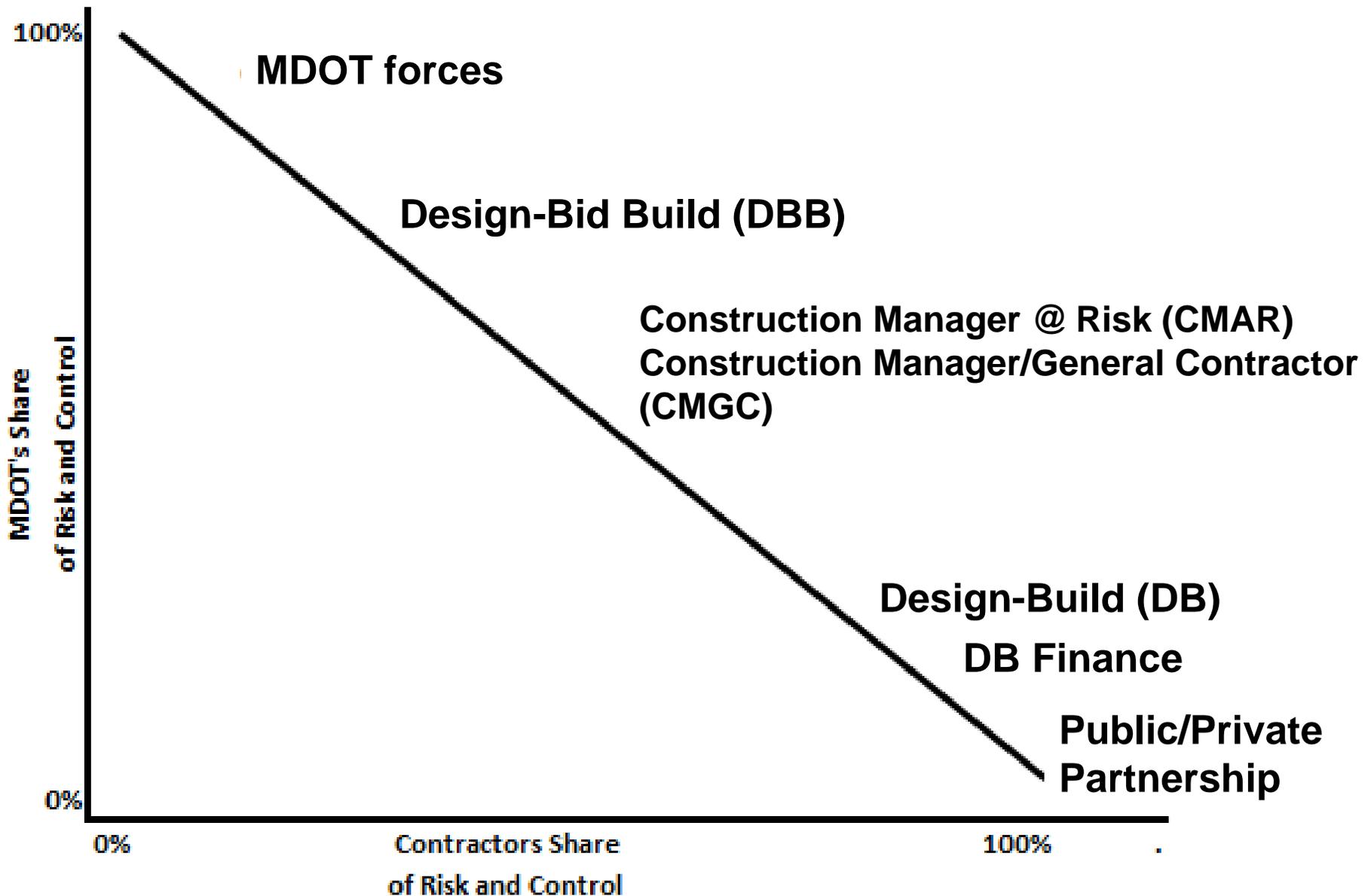
- Freeway Reconstruction Projects
- ITS Projects
- Bike Trail Reconstruction
- Emergency Response to Disaster
- Fix Price / Variable Scope

Construction Manager/General Contractor

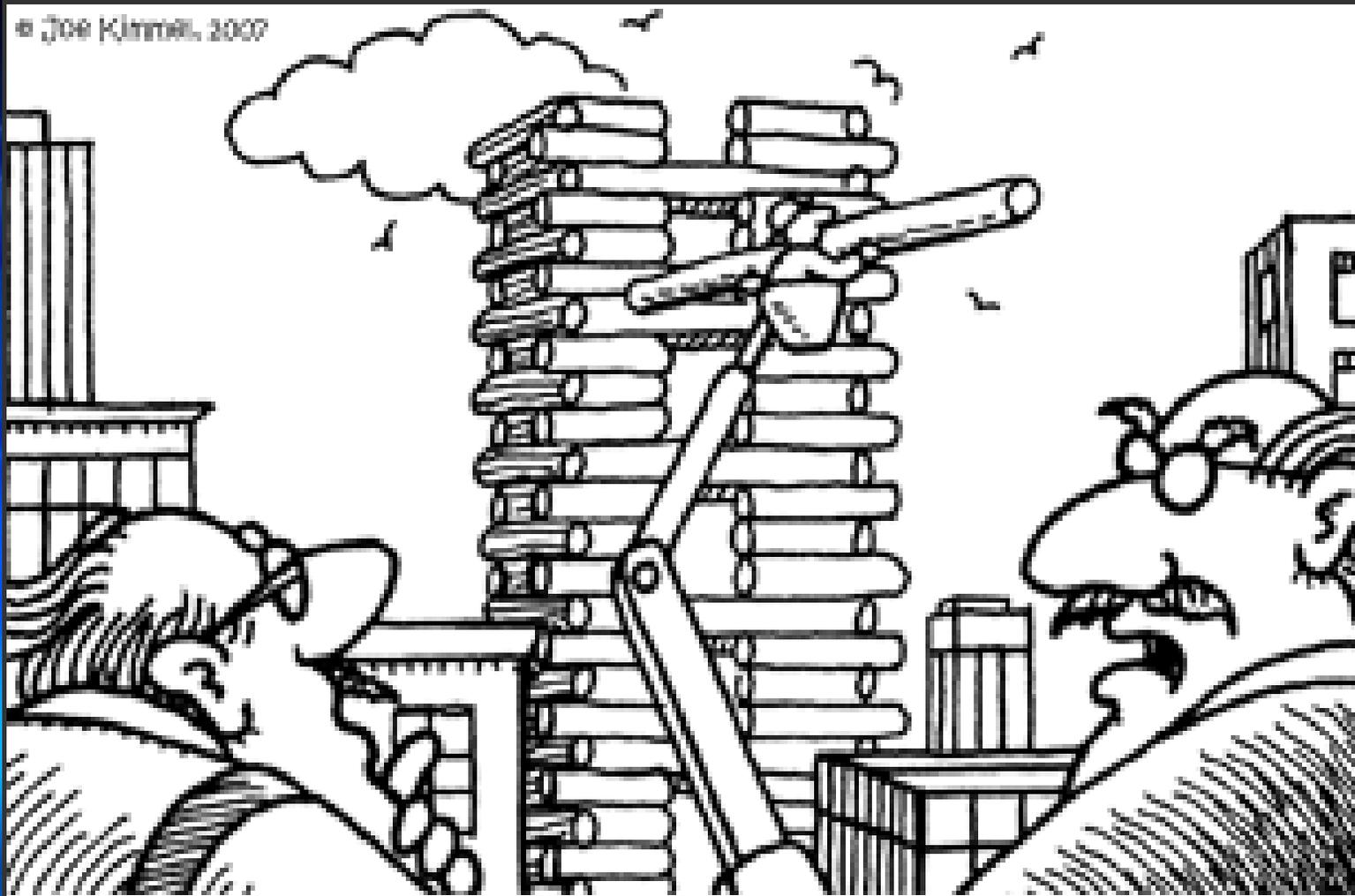
- Unique Projects with Unique Risks



Risk and Control



Why Design Build?



“ Sometimes low bidder just isn't the way to go...”

Basic Elements of Design Build

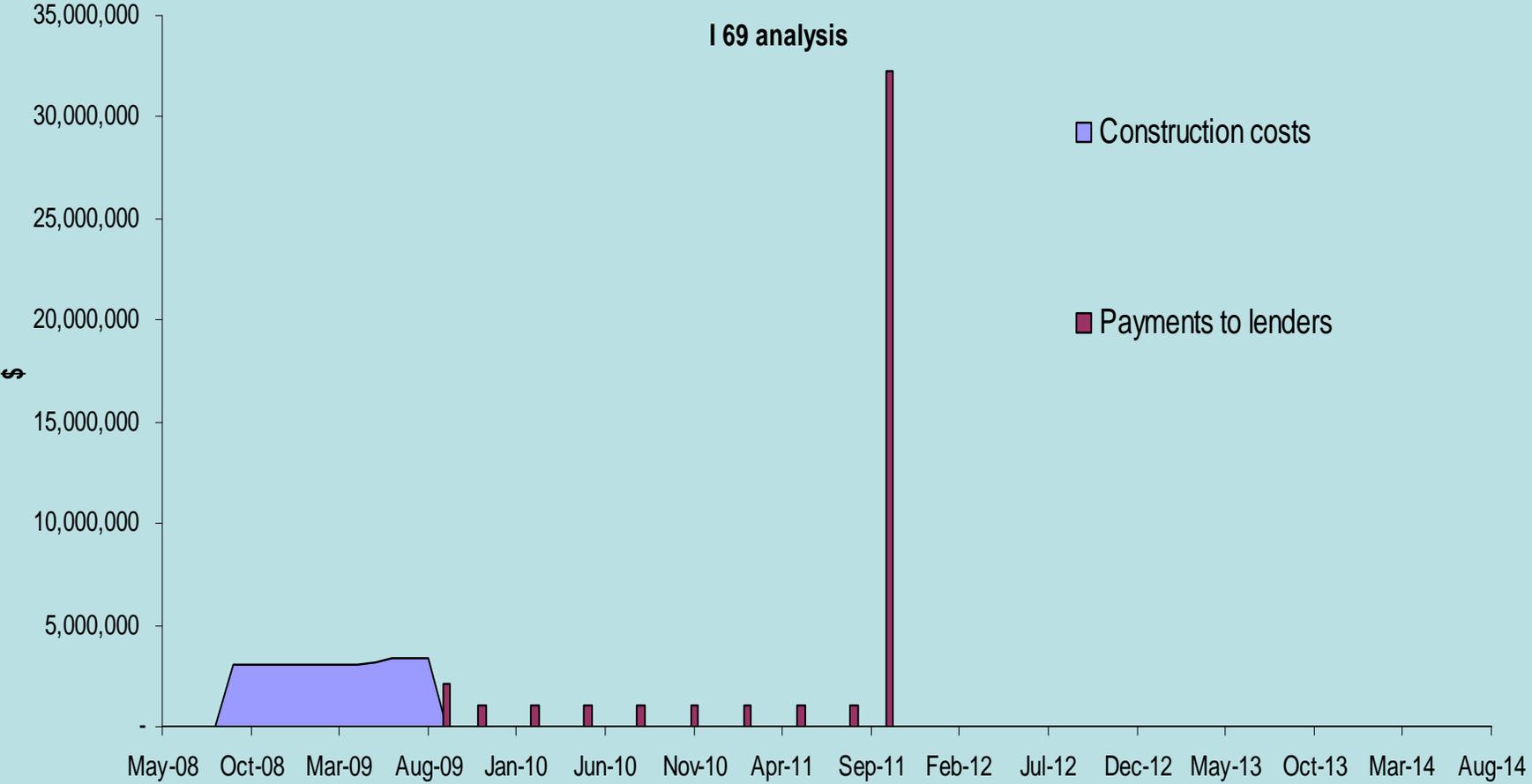
- Single Contract for Design & Construction
- Owners Sets the Scope and Terms of the Contract
- Owner Advertises Project
- Design Build Team is responsible for:
 - Design Activities
 - Construction
 - Coordination with Third Parties
 - Other activities required by the contract

Design-Build Process

- Initial Project Selection
- Determination of Procurement Process
- One Step vs. Two Step (Short-listing)
- Request for Proposals
- Proposal Submittals
- Design and Construction
- Payment Schedule



DBF Payment Schedule (For Prime Contractor Only)

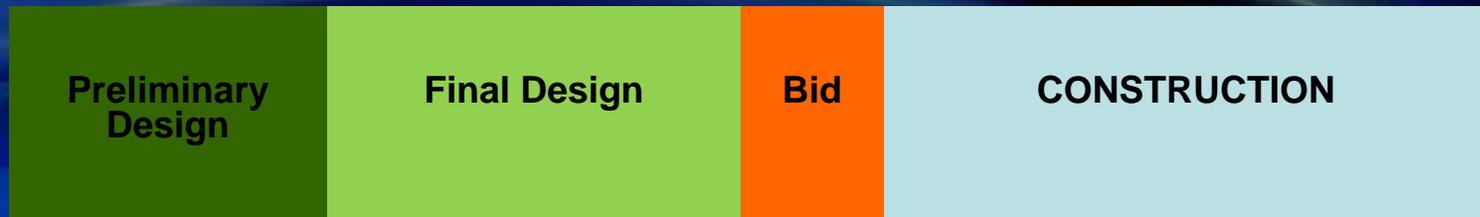


Why Design Build?

- Time Savings
- Innovations
- Quickly Address Infrastructure Needs
- Adding a Contracting Tool
- Adding a Project Finance Tool (DBF)
- Public/Private/Partnerships
- Emergency Response

TIME SAVINGS

Design-Bid-Build



Design-Build



Project Timeline

I-75 at 9 Mile Road

- Bridge Collapse - 7/15/09
- Draft Request for Qualification (RFQ) posted 7/23/09
- Final RFQ Posted 7/30/09
- DB Teams Qualifications submitted – 8/12/09
- Short-listed contractors notified – 8/20/09
- RFP Advertised 9/1/09
- Bids Due 9/30/09
- 9 Mile Bridge Open to Traffic: December 11, 2009



General Project Selection Guide from AASHTO 2008 Publication

- New Alignments, Widening, Rehabilitation and Reconstructions
- Projects Greater than \$10 Million
- Projects that can Utilize Best Value Procurement
- Projects with no more than 25% design completed

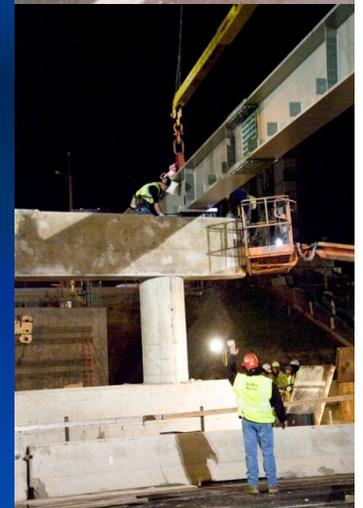
However, several MDOT projects have been let that did not fall inside all of these general guidelines

MDOT Project Selection

- **Target Projects That Can Benefit from Alternate Procedures**
 - Schedule Driven
 - Innovative Solutions Available
 - Transfer Contractual Responsibilities to DB Team
 - Selection Procedures: Single Phase Low-Bid / Two Phase
 - Risk Allocation: Place RISK on the party that can best manage it
- **Challenging Areas :**
 - Coordination with Rail Road facilities
 - Fast Track Utility Coordination
 - Areas with significant unknown Geotech risks
 - Financial Component in DBF
 - Permitting Requirements that cannot be quantified
(timing and/or requirements from permitting agency)
 - Right-Of-Way Issues

Possible Variations with Design Build Contracting

- Lane & Bridge Rentals, A + B
- Multiple Step Selection Process
- Best Value Selection
- “Best and Final Offer” (BAFO)
- Design Build Finance Operate Maintain
 - Public Private Partnerships



DBE Opportunities on Design-Build Projects

- **DBE Percentage Determination**
- **Design-Build Teams can:**
 - **Provide Verification Prior to Award**
 - **Good Faith Effort w/ Reporting**
- **Accomplished through Design & Construction Firms**
- **Commitments in Technical Proposals**

Construction Manager / General Contractor (CMGC)

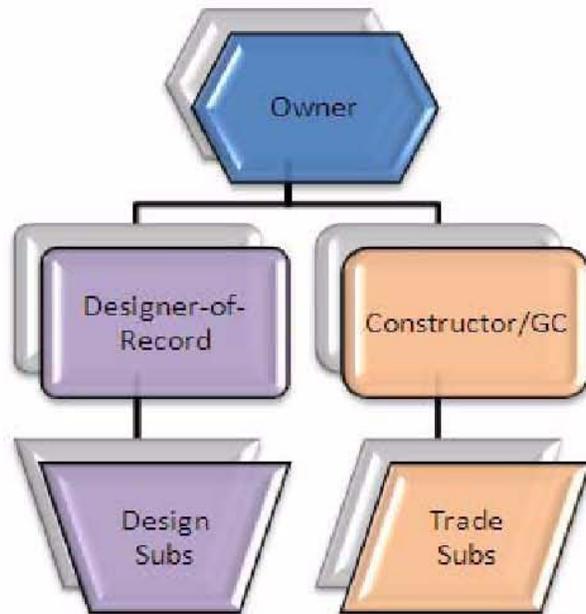
- **Owner Controlled Design**
 - Can use In-house or Consultants
- **Contract Between MDOT & CMGC**
 - Pre-Construction Phase
 - Construction Phase



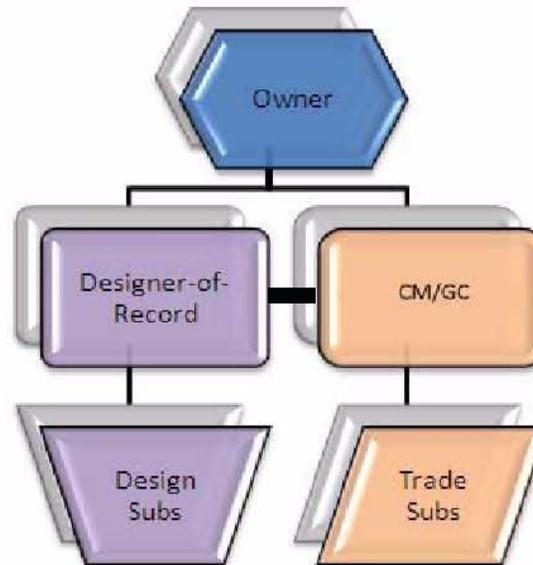


Delivery Options

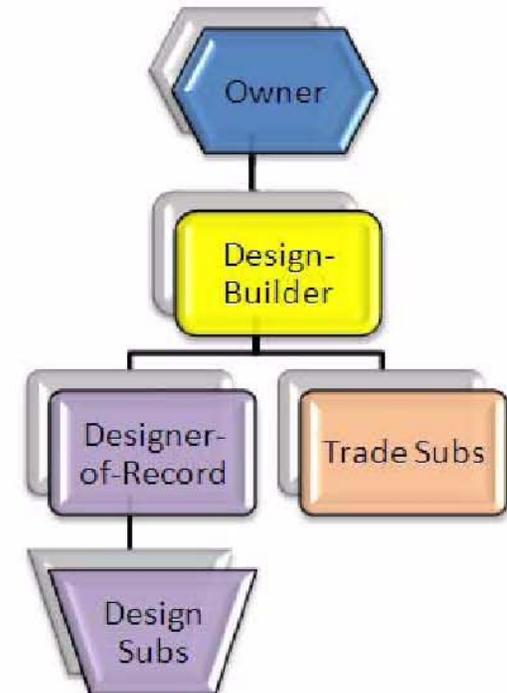
Design-Bid-Build



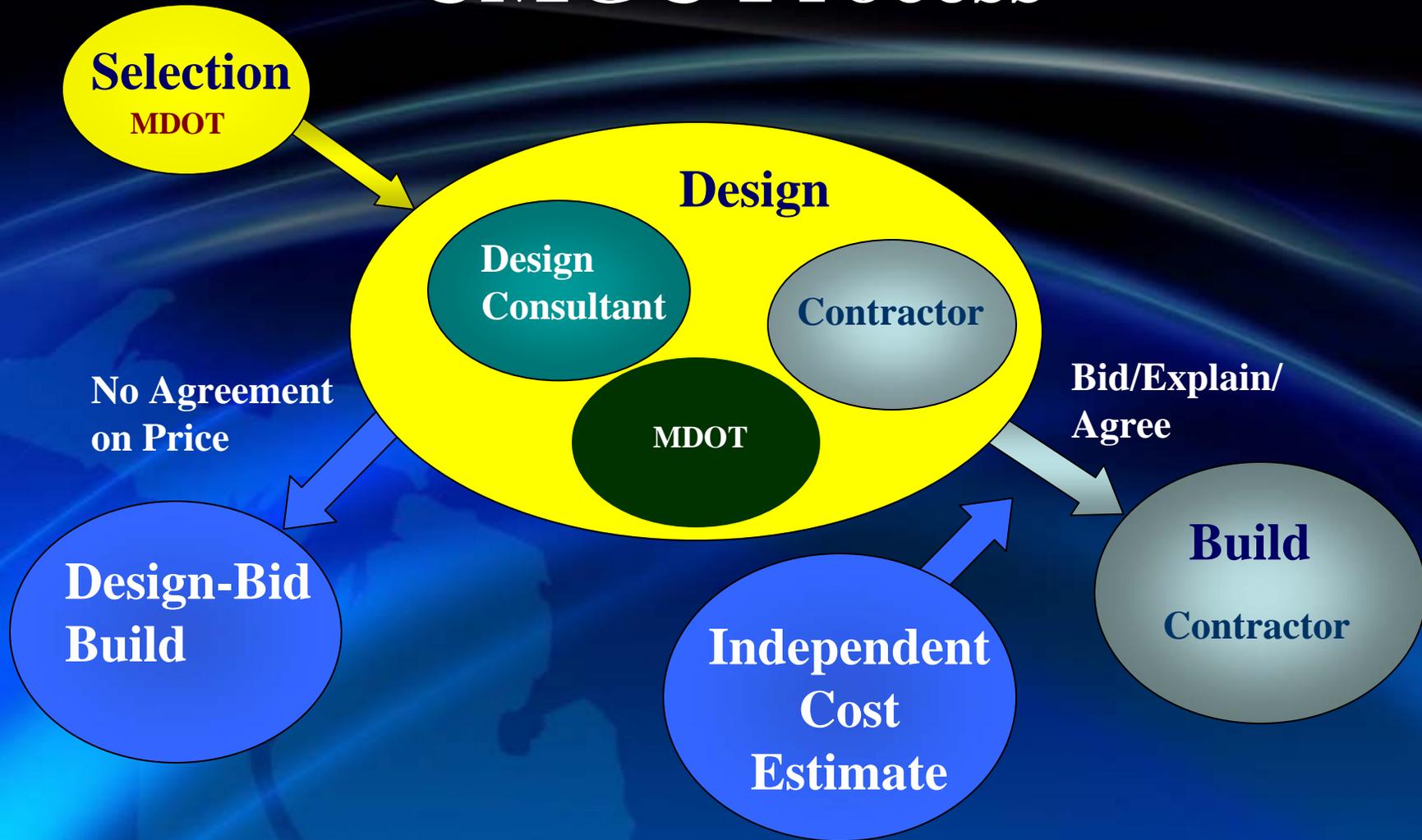
CMGC



Design-Build



CMGC Process



CMGC Benefits

- Owner Controlled Collaborative & Innovative Designs
- Accelerate Design & Construction
- Cost Controlling Measures
- Innovations and New Technologies
- Typical Construction Oversight



DBE Opportunities on CMGC Projects

- **Percentage Determination**
- **Provide Verification Prior to Award**
- **Accomplished w/ Construction Firms**

Fixed Price Variable Scope

- **Intended to Maximize Work**
- **Pre-Determined Contract Price**
- **Work Can Still Be Added by Contract Modification**
- **Common Uses**
 - **Simple Projects (CPM, Minor Rehab Project)**
 - **Large and Small Design Build Projects**

Fixed Price Variable Scope

Maximize Work Based on Available Funding

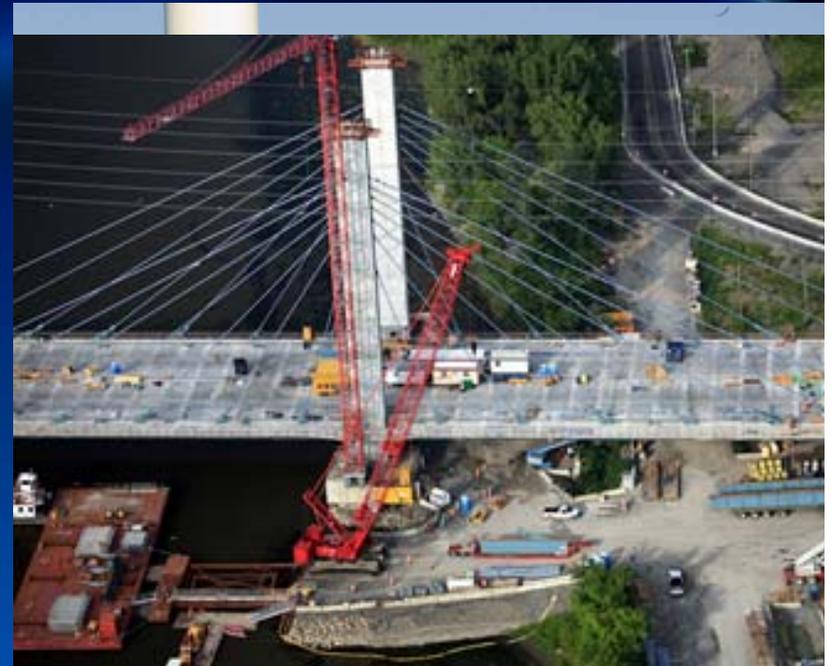
15 Miles

18 Miles

20 Miles - Selected Contractor

Public Private Partnerships (PPP or P3)

- Transfer of additional responsibilities after construction is completed for a specific period of time
- Road Agency retains ownership of facility
- Most utilize a Design Build procurement
- Most PPP's use revenue generated from the facility constructed
- Common Payment Methods
 - Toll Collections
 - Availability Payments / Shadow Tolls
- Primary used on Mega Projects (+\$500 Million) but not always...



OTHER AREAS of INTEREST

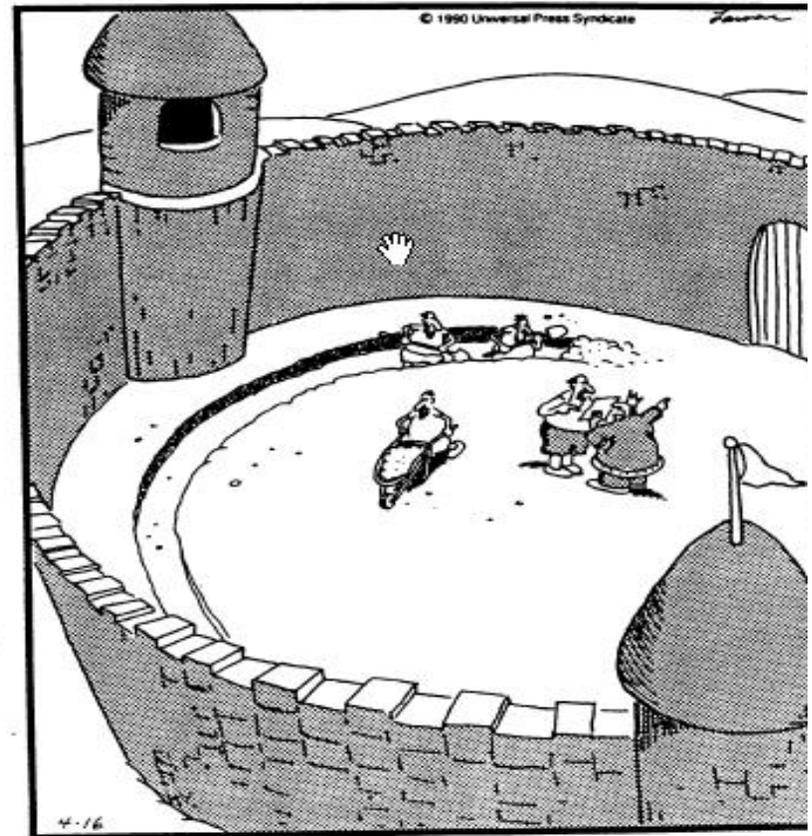
- **Rapid Bridge Techniques (ABC)**
 - Precast bridge elements
 - Incentive Provisions
- **Job Order Contracting**
 - Fixed Baseline Prices
 - Bid on a Multiplier
- **Performance Based Contracting**
- **Other Emerging Processes or Methods**

Innovative Contracting Challenges

- MDOT and Michigan's Highway Contractors have minimal recent experience in non-traditional contracting.
- New Contract Formats
- Tight Time Requirements
- Contractual Shift of Responsibility and Control
- Standards vs. Preferences vs. Standard Operating Procedures

THE FAR SIDE

By GARY LARSON



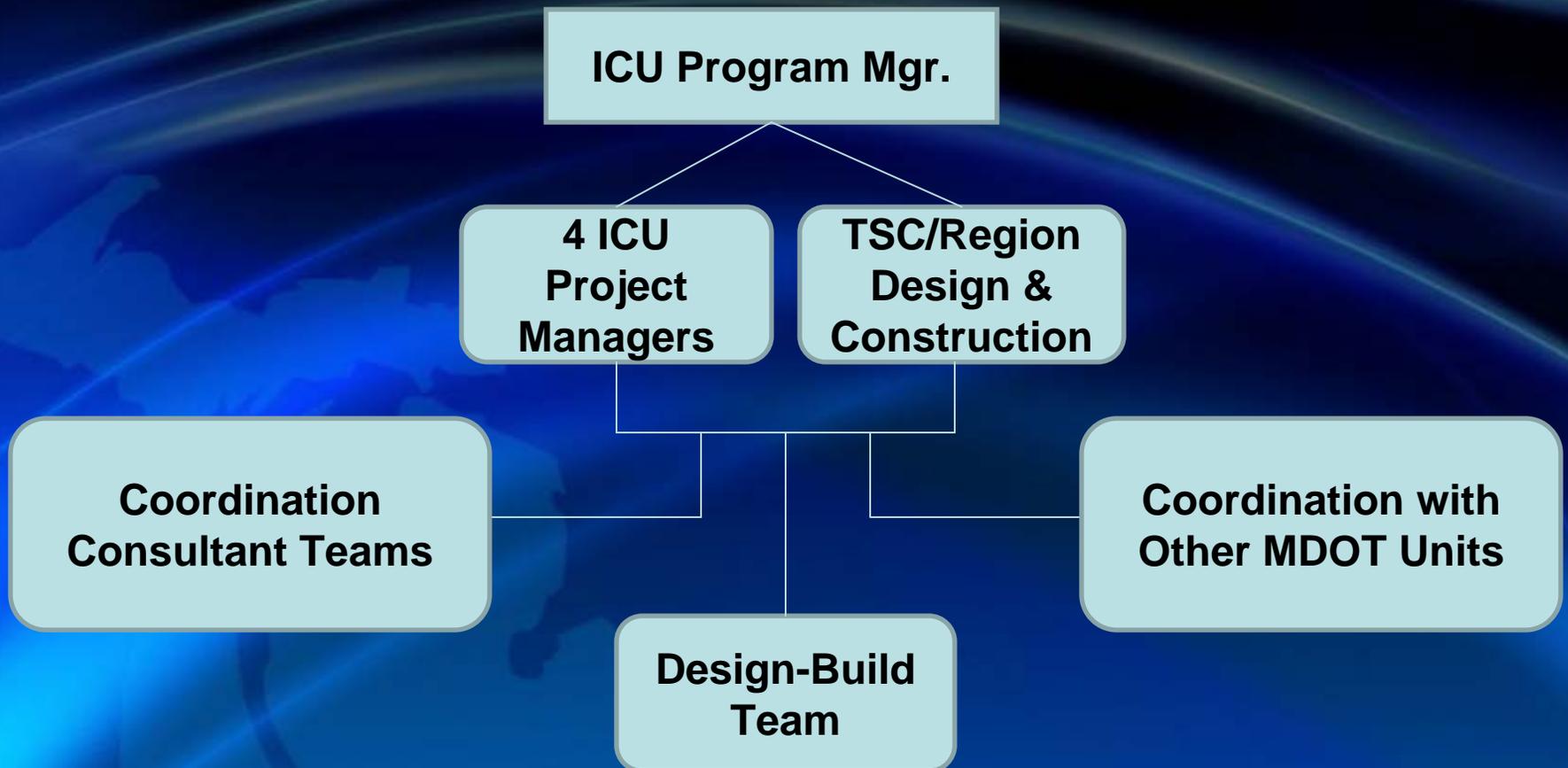
Suddenly, a heated exchange took place between the king and the moat contractor.

Moving Forward at MDOT

Innovative Contracting Unit

- **Four Project Managers**
 - Project Mgt.
 - Project Resource
 - Consistency Between Projects
- **Establish Processes**
- **Research New Concepts**
- **Work Closely with Region/TSC Staff**

Project Management Structure



Questions



www.Michigan.gov/designbuild