CM/GC Panel Discussion - Utah’s Experience

Efficiency through technology and collaboration

Sponsored By:
AASHTO SOC Construction Administration Section
CM/GC Panel Discussion - Utah’s Experience

John Haynes
Federal Highway Administration

Efficiency through technology and collaboration

Sponsored By:
AASHTO SOC Construction Administration Section
CM/GC Project Delivery
Integrated Team Approach
Why do Public Owners use CM/GC Contracting?

- Inherent project risk
- Opportunities for innovation
- Need for specialized qualifications
- Benefits from early procurement
- Need to optimize schedule & phases
- Limited or fixed budget
What is CM/GC?

- **Phase I:** Preconstruction Services Phase
- **Phase II:** Construction Services Phase
What is CM/GC? - Two-Phase Contracting

**PRE-CONSTRUCTION**

- Construction Manager
- Professional Services
  - Cost Estimating
  - Subcontracting Plan
  - Scheduling
  - Material Procurement
  - Utility Coordination
  - Construction Planning
  - Constructability Review
  - Final Design
  - ROW Acquisition
  - Third Party Negotiation

**CONSTRUCTION**

- General Contractor
- Construction Services
- Price Agreement: TMP or GMP
What is CM/GC? - Two-Phase Contracting

PRE-CONSTRUCTION

Construction Manager

Professional Services

Early Work Contract 1

CONSTRUCTION

General Contractor

Price Agreement: TMP or GMP

Construction Contract 2
## Comparison of Project Delivery Methods

<table>
<thead>
<tr>
<th>Project Traits</th>
<th>D-B-B</th>
<th>CM/GC</th>
<th>D-B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Management</td>
<td>Very limited</td>
<td>Very effective</td>
<td>Best for risk shifting</td>
</tr>
<tr>
<td>Collaboration w/ Designer &amp; Contractor</td>
<td>Very limited</td>
<td>Very collaborative</td>
<td>Moderate collaboration, contractual limitations</td>
</tr>
<tr>
<td>Price Certainty</td>
<td>None, subject to overruns and change orders</td>
<td>Very effective, early price certainty during project development</td>
<td>Very effective, early price certainty during project development</td>
</tr>
<tr>
<td>Schedule Acceleration/Compression</td>
<td>No ability to overlap design &amp; construction, can accelerate construction with A+B</td>
<td>Ability to overlap design &amp; construction, ability to optimize schedule not just accelerate</td>
<td>Ability to overlap design &amp; construction, very effective for accelerating project delivery</td>
</tr>
<tr>
<td>Construction Quality</td>
<td>Low bid can compromise quality</td>
<td>Very beneficial to building a quality project</td>
<td>Very beneficial to building a quality project</td>
</tr>
</tbody>
</table>
## Comparison of Project Delivery Methods

<table>
<thead>
<tr>
<th>Project Traits</th>
<th>D-B-B</th>
<th>CM/GC</th>
<th>D-B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation</td>
<td>Design Innovation only, very limited opportunities for contractor innovation</td>
<td>Very effective for capturing design and construction innovation</td>
<td>Very effective for capturing design and construction innovation</td>
</tr>
<tr>
<td>Constructability</td>
<td>Very difficult to obtain construction input during design</td>
<td>Optimal delivery method for obtaining construction input before design is complete</td>
<td>Effective delivery method for obtaining construction input before design is complete</td>
</tr>
<tr>
<td>Owner Control</td>
<td>High level control</td>
<td>Optimal level of owner control</td>
<td>Somewhat limited owner control, more performance based outcome</td>
</tr>
<tr>
<td>Competitive Pricing</td>
<td>High level</td>
<td>Somewhat limited, competitive markup not final project cost</td>
<td>Good Competition, but usually limited to short-listed teams</td>
</tr>
</tbody>
</table>
Independent Cost Estimating (ICE)

Role of ICE

- Participate during the design
- Provide project costs
- Assist the DOT in negotiations
- Validate fair price

Qualification of ICE

- Experienced Contractor
- No conflict of interest
- Qualifications based selection
State DOTs with Legislative Authority to use CM/GC

- States with Enabling Legislation for CM/GC
State DOTs with CM/GC Experience

States with CM/GC Experience
MAP-21 - Key Provisions

Section 1303

• Allows for the use of CM/GC contracting
• SEP-14 approval no longer required.
Notice of Proposed Rulemaking

Construction Manager/General Contractor Contracting

A Proposed Rule by the Federal Highway Administration on 06/29/2015

23 CFR Parts 630 and 635

- Published June 29, 2015
- Comments due August 28, 2015.
- https://www.federalregister.gov
Keys to Success:

1. DOTs need a solid business case for implementing a CM/GC program.

2. Contractor selection process must be transparent to local industry.

3. DOTs and contractor industry must have a mature partnering environment.

4. Dedicated staff and a champion dedicated to CM/GC deployment.

5. Pilot CM/GC deployment on smaller less complex projects.

6. Provide education to local industry partners on implementation process.
CM/GC Panel Discussion - Utah’s Experience

Rob Wight
Utah DOT

Efficiency through technology and collaboration

Sponsored By:
AASHTO SOC Construction Administration Section
Utah’s History with CM/GC

• Why UDOT Chooses CM/GC
• Utah’s Selection Process
• Lessons Learned and Best Practices
• What types of projects are best for CM/GC?
Why Utah Uses CM/GC. 
Owners Perspective

- Better understanding of True Costs early in the project
- Risks Managed Throughout Project Delivery
  - Uncertainty on “How this will be built” minimized
  - Uncertainty with Cost minimized
- Establishes an Working Environment to Optimize Innovations
- Exceed Public Expectations, Political Capital
- Partnering Maximized
Results - Reduced Construction Costs

Pre-Construction: OPCC 1
Results - Reduced Construction Costs

Pre-Construction: OPCC 2
Results - Reduced Construction Costs

Pre-Construction: OPCC 3
Results - Reduced Construction Costs

Pre-Construction: OPCC 4

Graph showing comparison of Pre-Construction costs for OPCC 1, OPCC 2, OPCC 3, and OPCC 4.
Why use CM/GC?

Collaborative Effort to Reduce Risk & Apply Innovations
Fair Price Strategy

**FAIR PRICE vs. LOW BID**

- **Engineer’s Estimate**
  - Typically based on State Averages – Change Thinking

- **Contractor’s Estimate**
  - Prepared for specific project bid items
  - Typically based on production rates and unit price

- **Independent Cost Estimate (ICE)**
  - Cost Validation
  - Reflects Current Market Conditions
Engineering Solutions Due to Innovative Contracting in Utah

• Innovations – Department directs the WHAT – Team Identifies the HOW!
  – Divergent Diamond Interchanges (DDI)
  – Continuous Flow Intersections (CFI)
  – Self Propelled Modular Transporters (SPMT’s)
  – Slide in Bridges
  – Flexible & Reversible Lanes
  – Movable Barriers
Contractor Selection Process

CMGC Selection Process - **Owner Integrity**

- Develop RFP
  - Fair Price Strategy
  - Evaluation Manual

- Oversight Committee Approvals
  - RFP
  - Fair Price Strategy
  - Evaluation Manual

- Technical Evaluation Team
  - Evaluates Proposals
  - Technical Scores
  - Price Scores
  - Compile Strengths and Weaknesses
  - Present to Oversight Committee

- Oversight Committee Selection Approval

**Blinded** - Conceal the identity of the Contractors submitting the Proposals; Ensures Proposals are reviewed objectively and that the possibility of bias, whether real or perceived is avoided.
UDOT Lessons Learned - Procurement

• **Project Goals**
• **Project Scope**
• RFP “Boiler Plate”
• **Well Defined Selection Criteria & Scoring Method**
  – Focus on the differentiators
  – What are the minimum qualifications?
  – **Project Specific**
UDOT Lessons Learned - Procurement

- **Blinding of the Oversight Selection Committee**
  - Technical Evaluation Team presents as Proposer A, B, C, etc.
  - Oversight Selection Committee provides an unbiased perspective
- Always leave an option for interviews
- **Include a Consultant & Contractor as a member of the evaluation team**
- Documented Selection Process
Summary of Best Practices

• Project Manager is Key - OWNER CHAMPION
• Open Communication Required
• Getting to Why Designer & Contractor's Approaches & Prices are Different
  – Really understanding what is included and what is reasonable
• Risk Assessment, Mitigation, & Management Strategies
• Trusting Team Relationships
• If Preparing Multiple RFC Phases of Project, Ensure Severability
• Involve Industry in CMGC Process
  – RFP Review Period
  – AGC & ACEC Voting Members
• Production Estimating versus Historical Averages
When to Use CM/GC

Projects with

• High Complexity
  – Contractor Input Valuable to Project Design
• Owner Maintaining Control of the Design
• Introduction of New Innovations
• Early Start Possible During Design
  – Early Procurement of Long Lead Items
• Third Party Risk
• Variable Scope
CM/GC Panel Discussion - Utah’s Experience

Brandon Squire
Ralph L. Wadsworth (RLW)

Efficiency through technology and collaboration

Sponsored By:
AASHTO SOC Construction Administration Section
Ralph L. Wadsworth Experience with CM/GC

• 12 CM/GC projects (8 for UDOT)

• Sample Projects:
  – I-215; 4500 South, $6 M - SLC UT
  – I-80; State to 1300 East, $126 M - SLC UT
  – I-80; Summit Park Bridges, $7 M - Park City UT
  – SR-252, $20M - Logan UT

• 30-50% of our work is Alternative Delivery

• Regional Contractor - (Western US)
Why CM/GC
I-215; 4500 South

• First bridge move using SPMTs for UDOT
  – Needed to be a success for the future of UDOT’s ABC program
  – Challenging travel path
  – Short Closure Window
  – Many design challenges (Girders, Grades, Deflections, etc)
  – Need for open book estimating
I-80; State to 1300 East - Reconstruction
Why CM/GC
I-80; State to 1300 East - Reconstruction

• Needed to Minimize Traffic Impacts
  – Innovative Moveable Barrier System (Reversible Lane)
  – Wanted to use SPMTs and create a standard manual
• Tight Budget – Needed to minimize throw away temporary widening
• Tight Right of Way constraints
• Many 3rd Party Utilities
• Need for open book estimating
I-80; Summit Park Bridge Replacement
Why CM/GC
I-80; Summit Park Bridge Replacement

- Create Standardized Details for Bridge Slides
- Minimize Traffic Impacts on Interstate
- Spread Footings were not feasible
- Severable Girder Package
SR-252; Logan Reconstruct
Why CM/GC

SR-252; Logan Reconstruct

• Large Diameter Sanitary Sewer
• Construction Phasing
  – ROW
  – Utilities
  – Wetlands – 404 Permit
• Multiple Severable Packages
Ralph L. Wadsworth Construction Co.
CM/GC Perspective

• Great Process for
  – Complex and/or high risk projects
  – New Technology/ Innovation
  – Where the owner wants to maintain control of the design & scope but wants contractor involvement

• Reduces Risk (both the owner and contractor)

• Increases Partnering & reduces change orders
Ralph L. Wadsworth Construction Co.
Perspective - Keys to Success

- Involve the ICE early so they understand the project.
- Address discrepancies between the ICE and Contractor at each milestone OPCC.
- Owner must understand that this is not Design Build and the Owner must “run the show”.
Question & Answer Period