Granite Transportation Market
CMGC (CMAR) Experience

• In excess of $4 billion over past two decades
• 30+ Projects
• 10+ Different Owners
• Value from $1 MM to $1.3 B
Owner Engagement

**Design-Bid-Build**
- **Total Amount of Risk**: Contractor Risk
- **Primary Bearer of Risk**: Owner
- **Relative Level of Risk**: Higher
- **Drivers of Risk**: Disconnect between design and construction leads to suboptimal design decisions and construction delays.

**CMGC**
- **Total Amount of Risk**: Contractor Risk
- **Primary Bearer of Risk**: Shared
- **Relative Level of Risk**: Lower
- **Drivers of Risk**: Collaborative design process leads to readily constructible plans, faster construction times, and innovative approaches.

**Design-Build**
- **Total Amount of Risk**: Contractor Risk
- **Primary Bearer of Risk**: Contractor
- **Relative Level of Risk**: Higher
- **Drivers of Risk**: Owner relinquishes control of design and construction to gain speed of delivery.
Transparency

- Full disclosure
- Open book policy
- Individual empowerment
- Understanding of finances

Trust

- Removal of doubt
- Belief in the organization
- Belief in the leadership
- In employees

Acceptance

- Full disclosure
- Open book policy
- Individual empowerment
- Understanding of finances
Building Trust thru Integration / Collaboration
Development of the TMP

- **Risk Analysis**
- **Design Workshop**
- **Estimate**
- **Budget**

Milestones:
- Milestone 1 – Conceptual
- Milestone 2 – 30% Design
- Milestone 3 – 60% Design
- Milestone 4 – 90% or Final Design

Target Maximum Price (TMP)
Obtaining Cost/Schedule Certainty

Milestone 1
Conceptual Design

- Owner/Engineer
- Designer
- Independent Cost Estimate (ICE)
- Contractor

Milestone 2
30% Design

- Eng. EST. 1
- Design Workshop
  Conceptual Design
- ICE 1
- EST. #1
- Risk Analysis

Milestone 3
60% Design

- Eng. EST. 2
- Design Workshop
  30% Design
- ICE 2
- EST. #2
- Risk Analysis

Milestone 4
90% Design

- Eng. EST. 3
- Design Workshop
  60% Design
- ICE 3
- EST. #3
- Risk Analysis

- Final Eng. EST.
- Design Workshop
  Final Design
- Final ICE
- Final Estimate

Legend:
- Owner/Engineer
- Designer
- Contractor
- Independent Cost Estimate (ICE)
Risk Analysis Approach

Pricing Milestone 1 – Conceptual Design

- SGT01 - Changing Geotechnical Conditions (Due to New Information) Settlements: $6.75
- UTL07 - RMP: Issues at New bingham 345 - R8: $4.98
- ROW04 - Right of Way Acquisition is More Costly than Projected: $3.28

Expected Value Cost Impact ($ millions)

- RWD03 - Changes in Design: $3.00
- RWD06 - Box Design Issues at Midas Creek*: $3.00
- SGT06 - Design Changes for Midas / Bingham Bridges: $3.00

- ROW02 - Delay in Acquisition due to Design Change: $2.70
- RWD07 - Box Design Issues at Bingham Creek*: $2.61
- RWD05 - Need for Design Exceptions: $2.55

Pricing Milestone 2 - 30% Design

- Reduced Impact
- Unchanged
- Unchanged
- Reduced Probability
- Retired
- Retired
- Retired
- Red. Impact & Probability
- Incorporated in Base Design
- Reduce Impact
Pricing Approach

Stairs to Success

Agree On Inputs
- Labor
- Equipment
- Quantities
- Scope

Estimate Review
- Production
- Crews
- Risks
- Schedules
- Methods
- Means

Establish TMP

1. Set The Ground Rules
2. OPCC Development and Plan Review
3. TMP Success
Questions

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