



**Work Session Meeting Agenda
2 Park Drive South, Great Falls, MT
Virtual Meeting by Zoom
November 16, 2021
5:30 PM**

Due to the COVID-19 health concerns, the format of the City Commission meeting will be held in a virtual video-conferencing environment. All City Commission members and City staff will attend the meeting via a remote location, using a virtual meeting method.

In order to honor the Right of Participation and the Right to Know (Article II, Sections 8 and 9 of the Montana Constitution), modifications have also been made for public participation.

To attend and participate in the virtual meeting utilizing Zoom, attendees must register in advance for the Commission Meeting at: https://us02web.zoom.us/webinar/register/WN_maHzNa91SESGmQa_PulKxQ

For all other participation options, Please see **Public Participation Guide for City Commission Meetings**.

CALL TO ORDER

PUBLIC COMMENT

(Public comment on agenda items or any matter that is within the jurisdiction of the City Commission. Please keep your remarks to a maximum of five (5) minutes. Speak into the microphone, and state your name and either your address or whether you are a city resident for the record.)

WORK SESSION ITEMS

1. Neighborhood Council Updates - Neighborhood Council #8 by Council Member, Travis Grove.
- [2.](#) Project Risk Management and Project Delivery Methods - Public Works.

DISCUSSION POTENTIAL UPCOMING WORK SESSION TOPICS

ADJOURNMENT

City Commission Work Sessions are televised on cable channel 190 and streamed live at <https://greatfallsmt.net>. Work Session meetings are re-aired on cable channel 190 the following Thursday morning at 10 a.m. and the following Tuesday evening at 5:30 p.m.

UPCOMING MEETING SCHEDULE

Special Commission Meeting -- Tuesday December 7, 2021 4:00 p.m.

Work Session -- Tuesday December 7, 2021 5:30 p.m.

Commission Meeting -- Tuesday December 7, 2021 7:00 p.m.

PROJECT RISK MANAGEMENT AND PROJECT DELIVERY METHODS

November 16, 2021

Presentation Goals

- Education on Project Risk Management
- Discussion on Change Orders
- Identify and Discuss Project Delivery Methods
- Plan to use GC/CM (General Contractor/Construction Manager) on upcoming WTP Solids Mitigation Project

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Design Bid Build (DBB) Overview

Used for Majority of CoGF Projects

Design	Bid	Build
COGF Identifies Project	Publicly Advertised	Submittals
COGF Contracts with Designer or In House Design	Design Team Answers Questions, Issues Addenda	Mobilization
Bid Documents are Produced	Bids Opened	Construction
	Notice of Award, Construction Contract Execution, Notice to Proceed	Final Completion – 2 Year Warranty Period

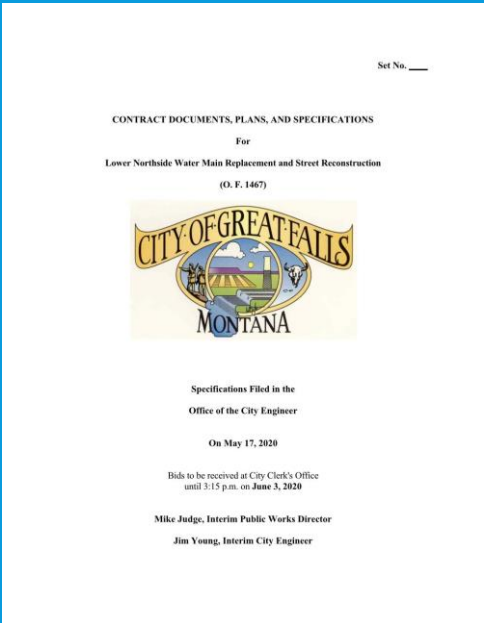
Project Risk Management

Current CoGF Risk Management Practices

- Hire Consultant
- Bid Documents
- Construction Contract
- Construction Phase Services
- Project Management
- Contingency
- Change Order

Proposed Practices

- Alternative Project Delivery Method GC/CM



Project Risk

Top Causes of Uncertainty (McGraw Hill, 2014)

- Unforeseen Site Conditions
- Design Errors/Omissions
- Owner Driven Changes
- Accelerated Schedule

Top Risk Mitigation Strategies (2014)

- Better Communication
- Greater Leadership
- Project Contingency
- Use of Team-Based Alternative to DBB

Impact of Strategies on Mitigating the Seven Top Causes of Project Uncertainty (According to Owners, Architects and Contractors)
Source: McGraw-Hill Construction, 2014

■ Scores Above 80 ■ Scores 70 to 79 ■ Scores 60 to 69 ■ Scores 50 to 59 ■ Scores 40 to 49 ■ Scores Below 40

	Owner-Driven Changes	Accelerated Schedule	Design Errors	Design Omissions	Construction Coordination Issues	Contractor-Caused Delays	Unforeseen Conditions	AVERAGE
Better Communication Among All Project Team Members in Early Stages of the Project	88	96	94	88	93	79	79	88
Greater Leadership or Involvement by Owner in All Stages of Design and Construction	81	83	78	71	59	53	73	71
Use of Team-Based Alternative to Design-Bid-Build	64	70	75	71	72	49	65	67
Appropriate Contingency Dedicated to This Issue by Owner	79	70	73	48	54	57	79	66
Use of BIM	53	64	76	69	76	47	55	63
Shared Liability Across the Project Team for Problems Created by This Factor	48	59	71	62	63	53	58	59
Use of Lean Design and Construction Practices	28	48	32	31	39	32	28	34

Change Orders – What Are They?

Majority of Change Orders are “Good”

Adjustment to a Contract to Modify its Scope of Work

- A way to adjust contracts up or down as needed
- Generally has an Associated Cost or Savings

A Contracting Tool used to:

- Add necessary items to projects
- Increase/Decrease project scope due to Owner requests
- Address unforeseen issues
- Manage Project risk

Some Change Orders are “Bad”

An attempt by a contracted party to take unacceptable financial advantage of the City

CHANGE ORDER No. 1

DATE OF ISSUANCE: September 23, 2020 EFFECTIVE DATE: March 19, 2020

OWNER: City of Grand Falls
 CONTRACTOR: Slates Construction Company
 Contract: Slates Equipment Plant Filtration Improvements
 OWNER'S Contract No.: 131-1311 ENGINEER'S Contract No.: 205711-2011-1001

You are directed to make the following changes in the Contract Documents.

Description: Costs as shown on the project itemized spreadsheet and Work Change Directives No. 1-6 summarized as follows:

- Slates Construction Company will complete two filters to Substantial Completion (filter operation via new filter control console manual switched) prior to starting work on the next set of filters.
- Filters will be completed in this sequence - Filters 13 & 15, Filters 9 & 11, and Filter 5&7.
- Material delivery and storage associated in the responsibility of Slates Construction Company, except for materials pre-ordered by the City.
- All other requirements and provisions of the Contract Documents remain in effect.
- For materials and labor performed as required structural repairs identified by the Structural Inspection performed by TDRJL of Filter 13&15.
- Removal/replacement of the Filter 13&15 filter effluent valves with new valves (existing actuators remain).
- For materials and labor performed as required on blower supply header piping modifications identified within RFP No. 6 provided by SCC.
- For materials and labor performed as required on HVAC ductwork modifications identified within RFP No. 8 provided by SCC.
- For labor performed as requested on Filter #3 exploratory core drilling identified within RFP No. 3 provided by SCC.
- For materials and labor performed as required for additional abatement required within Filters 9 & 11 identified within RFP No. 7 provided by SCC.
- For construction delays identified within RFP No. 4 provided by SCC, as a result of delayed delivery of pre-ordered valves and actuators.
- For labor and materials for blower air piping modifications required due to process piping and access stair conflicts, identified in RFP No. 5 provided by SCC.

Reason for Change Order: Schedule modifications as well as additional labor and materials for minor project design modifications and \$60,000.00 additional miscellaneous funding for any additional changes that might occur before project completion.

Attachments: (Project Itemized Spreadsheet, WCD 1-6)

CHANGE IN CONTRACT PRICE:		CHANGE IN CONTRACT TIMES:	
Original Contract Price	\$ 1,812,000.00	Original Contract Times	128 days
No change from previous Change Order No. _____ to _____	\$ 0.00	Ready for final payment	138 days or date
Contract Price prior to this Change Order	\$ 1,812,000.00	Contract Times prior to this Change Order	128 days
		Substantial Completion	128 days

Change Orders – Why Do they Happen?

Owner-Driven Changes

- Owner has a need for alterations (additive or deductive)

Unforeseen Site Conditions

- A hidden issue at the project site not identified during design
- Force Majeure – disasters, war, fire, pandemics, etc.

Design Errors/Omissions

- The cost of imperfection
- Only 7% of owners believe perfect construction documents are possible (McGraw Hill)



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Change Orders – Why Do they Happen?

Accelerated Schedule

- Projects which have aggressive completion deadlines can increase risk as things may be overlooked, dismissed, etc.

“Bad” Change Order:

An attempt to manipulate an existing issue or create a new issue with motives of greed, profit, manipulation, etc.



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Change Order Examples by Local Professionals TD&H Engineering

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1. Owner Driven Changes: Water Main Crossing

Need was identified by City Engineering **DURING** water main installation to modify and upgrade adjacent parking stalls.

- Adding these improvements to the existing contract was believed to be cost effective option to get improvements completed



Verde Park Gravel Parking Lot

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2. Changes caused by Unforeseen Conditions: Water Treatment Plant UV Project

Previously unknown buried tank discovered during construction:

- No records showed tank existence
- Thorough Field Investigation During Design failed to uncover tank
- Contractor required additional work and money to pay for revisions associated with the discovery



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3. Design Errors and Omissions

a. Errors. Designer (Either Consultant or City Staff)

- Consultant responsible for change order associated with a design error

b. Omissions.

- Example: Fire hydrant not included in construction bid is later determined to be required.
- Consultant not typically responsible for change order associated with this type of omission.



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Question: Is there a more efficient way to deliver complex projects with reduced risk, streamlined schedule, and reduced change orders?

Answer: Yes, Alternative Project Delivery Method of GC/CM

Can Save Money by:

- 1) Collaboration
- 2) Schedule Acceleration
- 3) Negotiated Construction Cost

GC/CM is only applicable for certain complex projects, majority of projects will still utilize DBB

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Legal Discussion on Alternative
Project Delivery Methods by Jeff
Hindoien

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Montana Law – Alternative Delivery Methods

Montana law specifically allows public entities to use the General Contractor / Construction Manager (GC/CM) project delivery model as an alternative to the traditional Design/Bid/Build model. In order to do that, however, the City Commission must make a detailed written finding that:

1. The project has significant schedule ramifications and use of the alternative delivery method is necessary to meet critical deadlines by shortening construction duration – factors include:
 - significant cost savings / opportunities for revenue generation
 - demonstrable public benefits from less construction time
 - less/shorter disruption of facility
2. The design process will contribute to significant cost savings through value engineering, systems analysis, etc.

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Montana Law – Alternative Delivery Methods

The “governing body” written finding also includes:

3. The project presents significant technical complexities that necessitate the use of an alternative delivery method; and
4. The use of an alternative project delivery method will not:
 - Encourage favoritism or bias in awarding the contract;
 - or
 - Substantially diminish competition for the contract

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What is General Contractor / Construction Manager (GC/CM)?

Process

- CoGF Hires Design Consultant
- Design Progresses to 30% milestone
- GC/CM Selected via RFQ & RFP
- Two-Phase Contract signed with Contractor
 - Phase 1 – Preconstruction Services Contract
 - Phase 2 – Construction Contract
- Ability to off-ramp to public bidding of project

Change Orders may still occur but on a reduced basis, limited to:

- Owner-Driven changes
- Unforeseen Issues



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Why GC/CM?

Collaboration (Pre-Construction Phase Services)

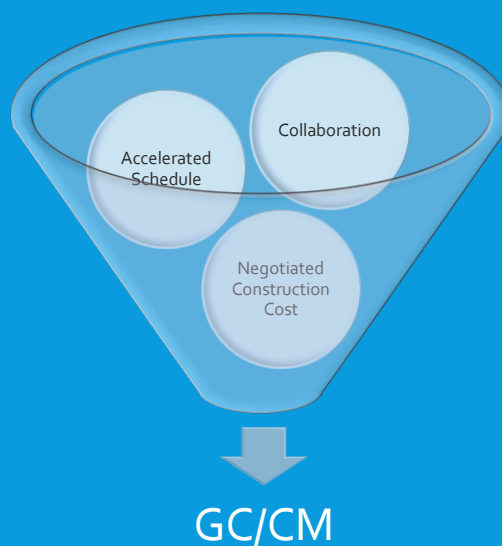
- Shared Risk / Open Communication
- Contractor involvement in Design process
- Constructability Means & Methods Review
- Construction Management & Schedule Planning
- Cost Estimating/Modeling and Transparency

Accelerated Schedule

- Public Bidding step taken out of equation
- Early procurement of construction materials
- Head start on submittals, etc.

Negotiated Construction Cost

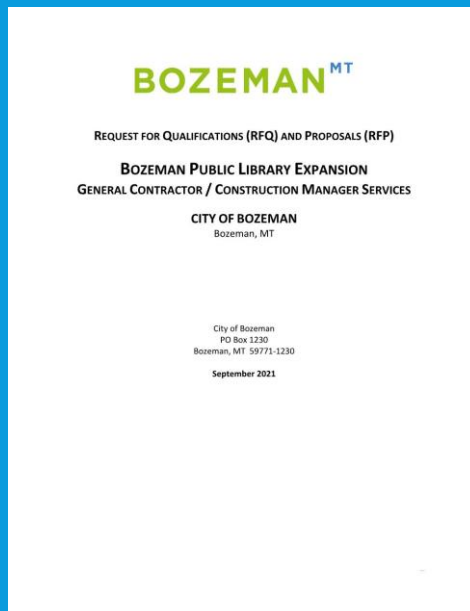
- Price Agreement Procured near 90% Design Milestone
- Contractor at risk if cost is exceeded
- Certain amount of work is self performed (50%)
- Requires Competition of and Transparency with Sub-Contractor Quotes



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Who Else is Using GC/CM?

- Great Falls Public Schools
 - GFHS Addition/Remodel
 - CMR Addition/Remodel
 - Longfellow Elementary School
 - Giant Springs Elementary School
- Montana Department of Transportation
 - Trout Creek – Bridge Rehab and Roadway
- City of Bozeman
 - Bozeman Public Library Expansion
- Many Others



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Alternative Project Delivery Method Examples by Local Engineering Professionals AE2S

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Regional Water Treatment Plant
City of Grand Forks, ND

\$152M
20 MGD

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Water Treatment Plant & Intake Improvements
City of Pierre, SD

\$38M
8.8 MGD



Revisiting our Goals

- Education on Project Risk Management
- Discussion of Change Orders
- Identify and Discuss Project Delivery Methods
- Tee up for GC/CM on upcoming WTP Solids Mitigation Project:
 1. Agenda Report of Written Findings
 2. GC/CM Selection via RFQ & RFP
 3. Agenda Report Awarding GC/CM Contract

Questions?

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