



DATE: September 5, 2019

PROJECT: ER 0361-018 (20744) Site 17

SUBJECT: SEP 14 for Best Value Procurement, CDOT Project 20744

A. Introduction

The Colorado Department of Transportation (CDOT) is formally requesting approval under FHWA SEP - 14 to use an innovative contracting practice to solicit and award the US 36 Project ER 0361-118 subaccount 20744 (Estimate \$11 Million). Full and open competitive proposals will be evaluated to determine award of the contract based on a Best Value evaluation process. The Project is located on US 36 in Larimer County near Mile Posts 7 and 8, and Project advertisement for construction is Fall 2019.

This will be the first time CDOT has used Best Value Procurement on a federally funded project. Initial discussion with the Colorado Contractor's Association (CCA) has been hesitant, but positive.

B. Purpose

CDOT will solicit a full and open construction competition using a Request for Proposal (RFP). The RFP solicits responses to the following three items: Answers to a series of questions that will be used to establish technical score (blindly evaluated), schedule (blindly evaluated), and price. The RFP also includes language which will explain how heavily each category is weighted for the overall score.

There are significant advantages with some disadvantages to using the competitive RFP method to award a Best Value contract.

Advantages:

- 1. Reduces risk to CDOT: By selecting a bidder based on their complete and written understanding of the critical aspects of the project (qualifications, experience, schedule, price), rather than just price alone, CDOT has increased its potential for selecting and awarding to the best bidder available. By selecting a contractor through this process CDOT has significantly increased its chance for success, and reduced overall risk for an unsuccessful project.
- 2. RFP process adds flexibility: By using the Request for Proposal (RFP) process, the bidders have an opportunity to present the strengths they would bring to the project, and CDOT can express to the contracting community, in





a competitive environment, the most important or critical aspects of the project. Also, by asking the contractor what they see as challenges and how they plan to resolve them, the stage is set for a proactive partnership between CDOT and the contractor.

- 3. **Best Value:** The evaluation process allows CDOT to evaluate aspects of the project rather than just price. While price is still a factor, this process allows CDOT to consider other critical aspects of the project prior to signing a contract. As an example: A large portion of the complexity and uncertainty of the project is associated with the 14' high tunneling work. This work will require closure of US 36. Minimizing impact to the traveling public is crucial. An inexperienced contractor with a poorly thought out plan could easily fall behind schedule and prolong the road closure. The contractor who best demonstrates their complete understanding of project, has a fair price, and is qualified, most likely will be selected through this highly competitive process as the Best Value. It is a win/win for everyone. Contractors can put their best foot forward and not have to worry about foregoing quality for a low price. CDOT wins, by awarding the contract to a bidder that has proven capabilities, a fair price, and has proposed a schedule.

Disadvantages:

1. **Could reduce competition:** Screening the bidders, while likely leading to higher quality, will decrease the competitive nature of the bid.
2. **Delay due to protest:** If CDOT precluded a bidder from bidding and the bidder protested, it is uncertain how the protest process would impact the project and how long it would take.
3. **Longer advertisement period:** A typical design-bid-build contract is four weeks. With best value, the advertisement period must be extended to six weeks so proposals can be evaluated.

C. Scope

US 36 between Estes Park and Lyons was severely damaged in the 2013 floods. A Detailed Damage Inspection Report (DDIR) was approved by FHWA for \$5,814,300. The project was identified to be designed and constructed as a traditional Design-Bid-Build (DBB) and has gone through the design and bid phases. The project scope and Engineer's Estimate was driven largely by the maximum DDIR amount. The bids came in approximately 40% higher than the Engineer's Estimate.

A large portion of the complexity and uncertainty of the project is associated with the tunneling work for the west culvert located approximately 70 ft. under the roadway





surface in rocky terrain. Geotechnical investigations have occurred, but bidder feedback confirmed risk was still included in the unit price bids due to the likelihood of material refusal. Additionally, specs were written such that rock and fill items could be broken out and priced according to risk. The bidders, however, were not interested in defining what consists of rock vs. fill during construction and bid the unit costs to have similar value.

The project is complex and on United States Forest Service Land. Access to USFS land will be granted via a special use permit for the short term and a Highway Easement Deed for the long term. Because US 36 is one of the main routes to Estes Park, it has the potential to impact the local tourist economy. For the safety of the traveling public and workers, an experienced bidder is needed.

With Best Value procurement, CDOT has the opportunity to award the construction contract to a bidder based upon qualifications and schedule in addition to cost. Criteria such as road closure time and experience with the type of work are factors that will be considered when selecting a bidder.

This process is new to CDOT and would require a justification letter signed by the Chief Engineer prior to implementation.

D. Risks & Opportunities

The project team has identified the following risks and opportunities specific to Project 20744 and using the Best Value Procurement Process:

Risks

- a) *Bidders*: No one bids on the project because the best value application process is too complex.
 1. CDOT met with CCA on August 22, 2019 to explain best value procurement and have a Q&A session.
- b) *Safety*: There could be tunnel instability due to poor workmanship, an errant vehicle getting into the work zone and driving off the edge, a car slides off the curve in the road adjacent to the work zone and contractor is the first responder on scene, a worker is injured on site and emergency transport is needed, or there is a fire on the project.
 1. In addition to CDOT's standard quality assurance, Best Value Procurement includes bidder experience in the selection process, thus minimizing the risk of poor workmanship.
 2. Advance warning will be required to give clear notice to drivers that the road is closed.
 3. A Traffic Incident Management Plan Project Special Provision was added to the project.
 4. The Bidder will be required to submit a detailed construction plan for all safety critical work including blasting, excavation, shoring, rockfall mitigation, and tunneling. The plan will address how to handle contingencies and a safety





- conference will be held two weeks prior to the commencement of the safety critical work.
5. A fire protection plan will be required, along with weekly field safety meetings.
- c) *Tunneling*: A large portion of the complexity and uncertainty of the project is associated with the 14' tunneling work for the downstream culvert located approximately 70' under the roadway surface in rocky terrain. There is a possibility of hitting material refusal.
1. CDOT did geotechnical investigations and shared this information with the bidding community. Bidder feedback has confirmed that risk was included in their unit price bids due to material refusal likelihood.
- d) *Change Order*: An unforeseen condition is encountered adding cost to the project.
1. After the project was unsuccessfully awarded in the Fall of 2018, a Constructability Meeting was held on January 14, 2019 with CCA to determine why there was a discrepancy between CDOT's Engineering Estimate and the bidders' estimates. Bidders shared the following with CDOT:
 - i. More than a two-week road closure was needed to complete the west culvert, rock blasting, paving, and guardrail.
 - ii. Change the culvert lining to shotcrete
 2. The design of the west culvert was modified to be more construction friendly.
- e) *Traffic Impacts*: Maintain access for Emergency Services, School buses, CDOT Maintenance. Maintain local access and minimize impacts to all affected businesses
1. CDOT will be meeting on September 16, 2019 with local agencies to discuss traffic impacts. Access requirements are included in the Project Special Provisions.
- f) *Communication*: There is spotty cell phone coverage along this section of US 36.
1. Radio communication between workers, traffic control, Emergency Services, School buses, and CDOT Maintenance will be required.
- g) *Historic Assets*: Avoid damage to the historic wall, water crossing, and Muggins Gulch itself.
1. Historic assets are outlined in the plans.
- h) *Claim*: Bidders feel the procurement process is biased and file a claim.
1. CDOT is working closely with the Alternative Contracting Unit and an In-house Attorney to assure proper protocols are followed.
- i) *Rock Blasting*: Local property owner claims we damaged their property in the blast, errant citizen gets in the work zone during a rock blast.
1. The Contractor will be required to submit a rock blasting plan.
- j) *Trailhead*: USFS has given CDOT permission to stage on 1/3 of the trailhead parking area.
1. If parking space became an issue for the public, CDOT would coordinate a solution with USFS.
- k) *Squatters*: There is evidence of people camping long term in the area we need to work. During a construction suspension, this could reoccur.
1. CDOT would work with USFS and the local authorities to mitigate the situation.





- l) *Water:* Ground water overwhelms the tunneling or culvert site.
 - 1. Construction will occur in the low water season.
- m) *Utilities:* A previously unidentified utility could be in conflict with the work.
 - 1. No utilities were found in the area.
- n) *Public Relations:* Someone is overlooked in the notification process
 - 1. CDOT has reached out to the local Emergency Services, towns, counties, and school systems to get the word out.
- o) *Materials:* substandard material found in subgrade, HMA not available when project needs to pave.
 - 1. Geotechnical investigations have not identified a subgrade issue.
 - 2. If the weather is too cold for HMA, WMA is historically available and will be used as a detour pavement.

Opportunities

CDOT has heard from the contracting community that they would benefit from having the chance to propose on a mid-level, alternative delivery project. To date, most alternative delivery projects that CDOT has advertised have been over \$100M. This project could provide a chance to run a medium project with CM/GC.

Because this project has been advertised as a DBB, CDOT has established DBB bid prices, not including costs for delay claims or change orders. This project presents a great opportunity to compare "apples to apples" for price and schedule if this project is delivered using CM/GC.

E. Schedule

Advertisement (Request for Proposals)	October 24, 2019
Pre-proposal Conference	October 31, 2019
Proposal Due Date	November 5, 2019
Award of Contract	November 20, 2019
Notice to Proceed	January 8, 2020
Start Construction	February 8, 2020
Construction Completion	Fall of 2020

F. Technical, Schedule, And Cost Proposals Selection Committee

The Qualifications and Proposals will be evaluated by a Selection Committee composed of individuals from the following offices:

- CDOT Brian Varrella, Resident Engineer CDOT
- Stacy DeWitt, Project Engineer
- CDOT James Zufall, Project Design Manager CDOT
- Matthew Pacheco, Alternative Bidding
- CDOT Legal Division

Non-voting Evaluator: United States Forest Service (USFS)

Evaluation Training





All voting members of the Selection Committee will be required to take proposal evaluation training prior to the review.

Confidentiality Agreement and Conflict of Interest Certificate

All Evaluation Committee members (the Project Manager, Evaluators, and Observers) will execute a Confidentiality Agreement prior to commencement of the Proposal evaluation process and provide them to the CDOT Contracting Manager. The Agreements will be retained as part of the Proposal evaluation record. A person who fails to execute the required Confidentiality Agreement will not participate in the Proposal evaluation. After Proposals are received, all individuals involved in the Proposal evaluation process will be responsible for maintaining confidentiality.

Selection Formula

Best Value Score = 50% (Technical Score) + 35% (Construction Schedule) + 15% (Cost Eval.)

Technical Proposal Evaluation Scoring

All Technical Proposals will be scored before any price proposals are opened or the identity of the bidders are known.

The Technical Score (TS) will be based on the Bidder's answers to proposal questions. The following adjectival rating system will be used:

Green - Response indicates significant strengths and/or a number of minor strengths and no significant weaknesses. Minor weaknesses are offset by strengths. There exists a small possibility that, if ultimately selected as the contractor, the minor weaknesses could slightly adversely affect successful project performance. (5 points)

Yellow - Response indicates significant strengths and/or a number of minor strengths. Minor and significant weaknesses exist that could detract from strengths. While the weaknesses could be improved, minimized, or corrected, it is possible that if ultimately selected as the contractor, the weaknesses could adversely affect successful project performance. (3 points)

Red - Response indicates weaknesses, significant and minor, which are not offset by significant strengths. No significant strengths and few minor strengths exist. It is probable that if ultimately selected as the contractor, the weaknesses would adversely affect successful project performance. (0 points)

The terms "Strengths and Weaknesses" as used in the above color ratings are defined as follows:

Strengths: That part of a response that ultimately represents a benefit to the project and is expected to increase the submitter's ability to meet or exceed the project's goals.





A minor strength has a slight positive influence on the submitter's ability to meet or exceed the project's goals whereas a significant strength has a considerable positive influence on the submitter's ability to meet or exceed the project's goals.

Weaknesses: That part of a response that detracts from the submitter's ability to meet the project's goals or may result in inefficient or ineffective performance. A minor weakness has a slight negative influence on the submitter's ability to meet project goals whereas a significant weakness has a considerable negative influence on the submitter's ability to meet the project's goals.

The proposal questions focus on the following criteria:

- Recognize and address project risks
- Experience
- Safety
- Project First-CDOT's Formal Partnering Process/dispute resolution
- Project Management/Organization
- Quality and Budget Control

Technical Criteria Plan Evaluation Possible Points: 50

Technical Score (Qualifications, Experience, Management): 50

Maximum Score: 50

Construction Schedule

The contract is required to submit a basic construction schedule with key milestones, such as completion of the east culvert, west culvert, rock blasting, guardrail, final pavement. The maximum road closure duration is 4 weeks with detours on US34 and SH7. Every day less than 4 weeks will add 3 points to the score. If that bidder is awarded the contract, an affidavit will be signed stating that the project will be complete during the shortened road closure time. Liquidated damages of \$5,500 per day would be assessed if they went over their commitment closure time.

Schedule Evaluation Possible Points: 35

Schedule Score: 35

Maximum Score: 35

Cost Evaluation

After the Technical Proposal and Schedule score is calculated, the project cost will be reviewed and a Composite Score will be calculated as follows:





Cost Score: 15

Maximum Score: 15

Selection of Bidder

CDOT will offer a contract to the Bidder with the highest Composite Score. However, if the parties are unable to execute a contract, CDOT may offer the contract to the bidder with the next highest composite score.

Debriefing

The bidders that were not awarded will have an opportunity to go over their TS and Schedule scores with the selection committee.

G. Measures

CDOT will measure the effectiveness of the Best Value contract selection process by:

1. The number of responsive proposals (i.e. was industry willing and able to successfully respond to this type of contract?). Include a comparison to the unsuccessful design-bid-build procurement
2. The quality of the technical proposals.
 - a. The quality of the proposals as directly compared to the ranges outlined in the evaluation.
 - b. Comparison of proposals to technical criteria on page 5 of this workplan
3. Analysis of the overall selection process.
 - a. The comparison of Price Proposals to the Engineer's Estimate.
 - b. The comparison of as-advertised schedule to the as-awarded and as constructed schedules.

H. Reporting:

CDOT will prepare and submit initial, interim, and final reports on this project.

The initial report will be prepared within 45 calendar days of contract award. The initial report will address the applicable measures listed in Paragraph F above, and will also include industry reaction to the best value process, any **identifiable** effects on the proposals received, and a copy of the bidder's costs for categories of "design" and "construction".

If the project is not completed by the end of the season in 2020, CDOT will submit an interim report summarizing project progress to date.

A final report will be submitted upon completion of the contract and final CDOT acceptance. The final report will address all measures in Paragraph F above, contain an overall evaluation of the project along with any suggestions and recommendations for improving the process.



CDOT Best Value Request for Proposal Notice to Contractors

Project: ER 0361-118 (20744)

US 36 – Site 17

The Colorado Department of Transportation (CDOT) is issuing a Best Value Request for Proposal Notice for this project. The prime general contractors that is determined to provide the best value to the taxpayer and the State of Colorado shall be selected to contract for this the project. The Best Value Proposal submittal must be sent to the attention of **RB Simmons, Construction Contracts Manager** via email at rb.simmons@state.co.us by no later than 10:00AM on **THURSDAY OCTOBER 17, 2019**.

The Solicitation and Award Schedule:

PROJECT ADVERTISEMENT (REQUEST FOR PROPOSALS)	THURSDAY, OCTOBER 24TH, 2019
MANDATORY PRE-PROPOSAL CONFERENCE	THURSDAY, OCTOBER 31ST, 2019
PROPOSAL DUE DATE	THURSDAY, NOVEMBER 5TH, 2019
BID LETTING	THURSDAY, NOVEMBER 13TH, 2019
AWARD RESULTS ANNOUNCED	THURSDAY, NOVEMBER 20ST, 2019

Award of Contract/Issuance of Notice to proceed Within 30 Calendar Days from Date of Bid Letting

The **Mandatory Pre-Bid Conference** is scheduled for **Thursday October 31st, 2019 from 1:00 PM to 2:30 pm**. The meeting will be held at the **Boulder CDOT office at 1050 Lee Hill Drive, Boulder CO 80302**.

Best Value Proposal Points of Contact:

For Best Value Request for Proposal Notice questions/submittal requirements please contact RB Simmons by phone at 303-757-9416 or by email at rb.simmons@state.co.us

For project scope of work technical related questions please contact CDOT Region 4 Resident Engineer by phone at 720 497-6928 or by email at brian.varella@state.co.us

Project Scope of Work Overview:

This project consists of Re-wetting of Muggins Gulch on US 36 from MM 7 to MM 8 in Larimer county. It will include a concrete box culvert, a tunnel, specialized river and environmental considerations, rock blasting to facilitate a rockfall ditch, paving and rockfall mitigation in Larimer County. Note: The detailed project plans and specifications for this project are available through CDOT's B2G system at <https://cdot.dbesystem.com/>

Best Value Proposal Process:

In order to be considered for this project interested prime general contractors must successfully complete the Best Value Proposal process identified in this notice and attend the Mandatory Pre-proposal conference.

Step 1 – Prospective bidders must be prequalified for the bidding level above \$20 Million pursuant to CDOT’s bidding rules prior to the date of the bid letting for this project. Prospective bidders not currently prequalified as prime general contractors must successfully complete a prequalification application through CDOT’s B2G system. The web links for CDOT’s Bidding Rules and the B2G System are provided below:

Bidding Rules: <https://www.codot.gov/business/bidding/documents/rules-governing-construction-bidding-2-ccr-601-10>

B2G System: <https://cdot.dbesystem.com/>

Step 2 – Upon successful completion of Step 1 prospective Contractors must complete and return the ***Best Value Technical Proposal Submittal; the Schedule affidavit and submit their bid proposal on PAGE 4 of this notice.***

The ***Best Value Submittals*** must be sent to the attention of RB Simmons, Construction Contracts Manager as per the instructions identified on Page 1 of this notice. Proposals received after the due date and time stated in this notice shall be considered non-responsive and will not be considered for evaluation.

The Step 2 submittals will be evaluated and the results will be posted within Ten (10) business days from the due date for the submission.

Prospective Contractors must answer all questions and provide all information requested in the technical proposal submittal requirements in order to be considered.

Responses shall be type written single spaced using no smaller than an 11-point font with 1 inch margins. The Technical proposal responses shall be no more than 5 double sided pages in length and Part 2 responses shall be no more 5 double sided pages in length (page limits do not include providing cover or signature pages). The proposal must be sworn to and signed by an authorized agent of the submitting Proposer and notarized.

The Technical Proposal Evaluation process will be conducted using a blind evaluation approach where information regarding the Bidder’s identity is hidden from evaluation committee during the initial evaluation of the submitted prequalification proposals. The evaluation committee will provide the results from the initial blind evaluation to the Engineering & Contracts Award Officer. Once the initial blind evaluations are completed, the identifiable information from each Bidder’s prequalification response will then be given to the evaluation committee for verification and reference check. The evaluation committee will then complete the verification of the Technical Proposals, and finalize the results.

Ratings for each of the Technical proposal questions/criteria will be rated using a Modified Satisficing Rating process as described below:

Green – Response indicates significant strengths and/or a number of minor strengths and no significant weaknesses. Minor weaknesses are offset by strengths. There exists a small possibility that, if ultimately selected as the contractor, the minor weaknesses could slightly adversely affect successful project performance.

Yellow – Response indicates significant strengths and/or a number of minor strengths. Minor and significant weaknesses exist that could detract from strengths. While the weaknesses could be improved,

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minimized, or corrected, it is possible that if ultimately selected as the contractor, the weaknesses could adversely affect successful project performance.

Red – Response indicates weaknesses, significant and minor, which are not offset by significant strengths. No significant strengths and few minor strengths exist. It is probable that if ultimately selected as the contractor, the weaknesses would adversely affect successful project performance.

The terms “Strengths and Weaknesses” as used in the above color ratings are defined as follows:

Strengths: That part of a response that ultimately represents a benefit to the project and is expected to increase the submitter’s ability to meet or exceed the project’s goals. A minor strength has a slight positive influence on the submitter’s ability to meet or exceed the project’s goals whereas a significant strength has a considerable positive influence on the submitter’s ability to meet or exceed the project’s goals.

Weaknesses: That part of a response that detracts from the submitter’s ability to meet the project’s goals or may result in inefficient or ineffective performance. A minor weakness has a slight negative influence on the submitter’s ability to meet project goals whereas a significant weakness has a considerable negative influence on the submitter’s ability to meet the project’s goals.

Bidders will be categorized overall as either “Prequalified” or “Not Prequalified.” CDOT will be the sole judge in determining the eligibility of a Bidder, and reserves the right to refuse eligibility to any Bidder CDOT considers not qualified to successfully complete the project. CDOT decisions regarding a Bidder being prequalified to bid on the project will be final.

Step 3 Schedule Proposal (35 pts)

The Project Team has determined that an essential measure of the success of this project is the well-coordinated implementation of the **FULL CLOSURE** as described in the plans and specifications of the bid package. This Critical path item has potential to impose adverse impacts on the tourism economy, local schools and freight. Therefore, the project team would like to reward the contractor that has a well thought out plan, to efficiently use the total closure time, and minimize the potential for adverse impacts to the resources described.

The Schedule Submittal score will be determined by comparing each firm's Milestone Commitment Affidavit (**APPENDIX XX**) with the Milestone Commitment submitted using a ratio. That ratio will then be applied to the Total points available for the Schedule Submittal to determine the points earned by the Bidder. The lowest Schedule Submittal will receive the maximum score of 15 points.

Scoring of the Schedule Submittal will use the following equation:

$$\frac{S_{low}}{S_n} \times Pts_a = Pts_e$$

L_{low} = Lowest Bid Price Submittal of all Contractors

L_n = Individual Bid Price Submittal for each Contractor

n = Individual Contractor

Pts_a = Total Points available for this section

Pts_e = Points earned by the Contractor rounded* to the **NEAREST TENTH POINT**

***Calculation will be done to the second decimal point and rounded to the tenth**

Example:

CDOT has received 3 Schedule Submittals for this project.

Bidder A = 29 Days

Bidder B = 27 Days

Bidder C = 25 Days

The Lowest Schedule Submittal for this example is:

$$S_{low} = 25 \text{ Days}$$

$$Pts_a = 35pts$$

* Points earned for Bidder A:

$$* L_{low} = 25 \text{ Days}$$

$$* L_A = 29 \text{ Days}$$

$$* Pts_a = 35pts$$

$$* Pts_e = \frac{25}{29} \times 35pts = 30.2pts$$

* Points earned for Bidder B:

$$* L_{low} = 25 \text{ Days}$$

$$* L_B = 27 \text{ Days}$$

$$* Pts_a = 35pts$$

$$* Pts_e = \frac{25}{27} \times 35pts = 32.4pts$$

* Points earned for Bidder C:

$$* L_{low} = 25 \text{ Days}$$

$$* L_C = 25 \text{ Days}$$

$$* Pts_a = 35pts$$

$$* Pts_e = \frac{25}{25} \times 35pts = 35.0 \text{ pts}$$

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Step 4 Bid Price Submittal 15 pts

The Bid Price submittal score will be determined by comparing each firm's sealed Bid Price submittal with the lowest Bid Price Submittal using a ratio. That ratio will then be applied to the Total points available for the Bid Price Submittal to determine the points earned by the Bidder. The lowest Bid Price Submittal will receive the maximum score of 15 points.

Scoring of the Bid Price Submittal will use the following equation:

$$\frac{L_{low}}{L_n} \times Pts_a = Pts_e$$

L_{low} = Lowest Bid Price Submittal of all Contractors

L_n = Individual Bid Price Submittal for each Contractor

n = Individual Contractor

Pts_a = Total Points available for this section

Pts_e = Points earned by the Contractor rounded* to the nearest half point

*** Calculation will be done to the second decimal point and rounded to the half point**

Example:

CDOT has received 3 Bid Price Submittals for this project.

Bidder A = \$12,500

Bidder B = \$14,250

Bidder C = \$10,000

The Lowest Bid Price Submittal for this example is:

$$L_{low} = \$10,000$$

$$Pts_a = 15pts$$

* Points earned for Bidder A:

$$* L_{low} = \$10,000$$

$$* L_A = \$12,500$$

$$* Pts_a = 15 pts$$

$$* Pts_e = \frac{\$10,000}{\$12,500} \times 15pts = 12.0pts$$

* Points earned for Bidder B:

$$* L_{low} = \$10,000$$

$$* L_B = \$12,500$$

$$* Pts_a = 15 pts$$

$$* Pts_e = \frac{\$10,000}{\$14,250} \times 15pts = 10.5pts$$

* Points earned for Bidder C:

$$* L_{low} = \$10,000$$

$$* L_C = \$10,000$$

$$* Pts_a = 15 pts$$

$$* Pts_e = \frac{\$10,000}{\$10,000} \times 15pts = 15.0pts$$

Best Value Determination

To determine which contractor has proposed the Best Value, CDOT will aggregate the individual scoring components for Technical Proposal Score; Schedule Proposal Score; and Bid Proposal Score. The Contractor with the Highest Best Value Score will be selected.

$$BV = TS + SPS + BPS$$

BV = Best Value

TS = Technical Proposal Score

SPS = Schedule Proposal Score

BPS = Bid Proposal Score

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STEP 2 Best Value Technical Proposal Submittal Requirements

Project: NHPP 0703-445(21893)

Part 1 – Identifiable Contractor Submittal Requirements

Part 1 Instructions: Please provide responses below to the Identifiable Prequalification Submittal Requirements for your firm. Responses to Part 1 are to be submitted as a separate pdf file from the non-identifiable Part 2 submittals.

Company Information:

Name of Contractor (Corporation, Partnership, etc.)

Main Address of Contractor

Authorized Agent Point of Contact

Authorized Agent Signature and Date

Phone Number of Authorized Agent Contact

Submittal Requirements:

A. Previous Experience

Provide a list all "Relevant" **INTERSTATE ROAD WIDENING PROJECTS WITHIN THE ROCKY MOUNTAIN REGION THAT YOUR COMPANY HAS COMPLETED AS A PRIME GENERAL CONTRACTOR SINCE 2012 (RELEVANT IS DEFINED AS BEING SIMILAR IN SCOPE AND COMPLEXITY AS DESCRIBED IN THE PROJECT PLANS AND SPECIFICATIONS FOR CDOT PROJECT 21892). PROVIDE THE FOLLOWING INFORMATION FOR EACH PROJECT:**

1. Project number, description, and location.
2. Name and address of owner.
3. Name and current phone number of owner's project manager.
4. Scope of work performed (identify any similarities to the project proposed under this Best Value Request for Proposal notice).
5. Type of contract (design/bid/build, CMGC, Design Build, etc....).
6. Contract amount as bid and final amount paid.
7. Contract start date, initial completion date, and final completion date.
8. Indicate if Contract was fully completed, terminated for convenience or for cause, and or not completed for any other reason and why.
9. Indicate if liquidated damages were assessed, and if so for how many days and the dollar amount. Describe what categories such as Time/Count/Milestones, Erosion Control, Traffic Control...etc. they were applied for.

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Part 1 - Continued**B. Current Contracts**

Provide the following information regarding all current Interstate road widening projects within the Rocky Mountain Region still in progress that your company is the prime general contractor for:

1. Project number, description, and location.
2. Name and address of owner.
3. Name and phone number of owner's project manager.
4. Begin date, percent complete, and estimated completion date.
5. Contract amount as bid and dollar amount of uncompleted work.
6. Scope of work being performed (identify any similarities to the project proposed under this special prequalification notice).
7. Indicate if the project will be completed on schedule per the original awarded contract or not? If not, please explain why.
8. Name and work experience of superintendents employed on current contracts.

C. Proposed Project Organizational Chart

Please provide the proposed project organizational chart with the identifiable information relating to key personnel planned to be used for administration/completion of the project (the project organization chart should correspond with the one provided under Question No. 1 in Step 2 – Part 2).

Note: The responses provided under Part 1 will be used to verify the responses provided under Part 2 for Questions 1 & 2 of this prequalification notice.

Part 2 – Best Value Technical Proposal Submittal Requirements

Part 2 Instructions: Please provide responses below to the Non-Identifiable Prequalification Submittal Requirements for your firm. Responses to Part 2 are to be submitted as a separate pdf file from the Identifiable Part 1 submittals. Please avoid providing information in responses for Part 2 that reveal your company's identity. Responses should reflect your understanding of and ability to successfully complete the CDOT project described in this solicitation.

General Questions (40 pts):

- 1) Provide your proposed project organizational structure/chart (Titles and Roles only).
- 2) Describe your company's relevant experience in completing tunneling and CBC work (either self-performed or through subcontractor)
 - Give 3 examples of tunneling projects in the last five years.
- 3) What is your plan and approach to maintain budget, quality and durability while working under a compressed schedule?
- 4) Describe how you will maintain safety and mobility during construction to minimize impacts to the traveling public and workers? Include a description of the proposed incident and emergency management plan for this project.
- 5) What are the top three challenges that you see with this project? Describe your approach to mitigate and resolve the issues identified.
- 6) Give an example of Project First procedures you have used to resolve a dispute, and how it was implemented. Provide a narrative of the outcome.
- 7) Describe a situation where you had to work with the owner to mitigate an unforeseen condition. Include in your example how cost and schedule impacts were minimized. Provide a narrative of the outcome.
- 8) What differentiates you from other contractors?

Schedule narrative (10 pts):

- 9) Describe your team's plan for managing the following project critical path elements:
 - Design and fabrication of long lead time procurement items (e.g. precast Box Culvert)
 - Commencing construction in **FEBRUARY 08, 2020**.
 - **FULL** road closure of four weeks or less. Include a description of your approach to phasing, and how your resources would be used to achieve schedule goals:
 - complete all work so the road can be paved and reopened
 - salient features for the closure:
 1. Concrete Box Culverts
 2. Rock Blasting
 3. Guardrail
 4. Roadway
 5. **(WORK WILL BE WITHIN MP 7.2 – MP 8.5 ON US 36)**

Note: Responses to Part 2 Question's 1 & 2 will be verified against the associated responses provided under Part 1 of this prequalification notice.

NOTE: To achieve Section 508 Compliance, CDOT's purple-highlighted text has been converted to **UPPERCASE, Bold, Italic**. (Yellow highlight shown for information only, as color cannot solely be used to convey information)

DATE: October 29, 2021

PROJECT: ER 0361-018 (20744) Site 17

SUBJECT: SEP 14 Initial Evaluation Report for Best Value Procurement, CDOT Project 20744

A. Introduction

The Colorado Department of Transportation (CDOT) received approval under the Federal Highway Administration (FHWA) SEP-14 to use an innovative contracting practice to solicit and award the US Highway 36 (US 36) Project ER 0361-118 subaccount 20744 (Estimate \$11.8 Million). Full and open competitive proposals were evaluated to determine award of the contract based on a Best Value evaluation process. The Project is located on US 36 in Larimer County near Mile Posts 7 and 8, and Project advertisement for construction was in the fall of 2019. This was the first time CDOT used Best Value Procurement on a federally funded project.

The contract was awarded based on a scoring formula that weighed price, time, and technical experience using the formula identified in Section H of this document.

B. Project Location

The project is located on US 36 from MP 7.7 to MP 8.0 in Larimer County in the State of Colorado at approximately 40.3151°N latitude and -105.4062°W longitude.

C. Purpose

CDOT solicited a full and open construction competition using a Request for Proposal (RFP). The RFP solicited responses to the following three items; answers to a series of questions in order to establish a final Best Value Score based on a technical (blindly evaluated), schedule (blindly evaluated), and price submittal from each bidder. The RFP included language explaining how heavily each category would be weighted for the overall score.

D. Best Value Selection Results

The Best Value contracting process allowed CDOT to include the value of technical skill and impact to the traveling public (i.e. duration of road closure) along with low bid in selecting a bidder.

Three bid proposals were submitted to CDOT. Flatiron Constructors was awarded the contract based on the results of the Best Value selection process.

E. Best Value Process

CDOT anticipated significant advantages and some disadvantages in using the competitive RFP method to award a Best Value contract.

Background:

It was especially important on project 20744 to have a contractor with specialized skills in tunneling and Concrete Box Culvert (CBC) construction for the following reasons:

When the project was originally advertised as a design/bid/build, all six bids came in over the DDIR (Detail Damage Inspection Report) dollar amount approved by FHWA. As a result, the project couldn't be awarded.

Why was there such a difference between CDOT's cost estimate and the submitted bids? CDOT invited CCA (Colorado Contractors' Association) to a Constructability Analysis meeting on 1/14/2019 to find out.

The following concerns/issues were expressed in the meeting:

- 1) Risk: There were unknowns in the geology of material to be tunneled through for the culvert, making it difficult to predict the tunnel completion time. Provide more geotechnical data. A significant change in rock size or hardness could significantly impact construction time.
 - a. It was determined that no additional geotechnical investigation would be done by CDOT. The existing geotech reports were available for the contractors' review.
- 2) Constructability: Consider allowing shotcrete for tunnel lining instead of contact grouting
 - a. The plans were revised to allow a CDOT-approved shotcrete to be used for the tunnel lining.
- 3) Clarification: Clarify earthwork calculations and show how excavation support, ground improvement, and shoring are broken out and paid for.
 - a. The plans were revised to add clarification
- 4) Time: As advertised, the project would only have two weeks of road closure to excavate for and install the precast CBC, backfill and repave the road, blast rock, and install guardrail. Attendees stated they needed at least 4 weeks.
 - a. CDOT met with local Stakeholders and presented two options: They could agree to either a 30-day full road closure, or 3 months of alternating one-way traffic along US 36.

- i. The Stakeholders agreed to a 30-day road closure rather than alternating one-way traffic for 3 months. After accounting for the local school district's break schedule, and town events, the ideal time for the closure was determined to be from 3/09/2020 to 4/07/2020.
- 5) Access: More access to the construction site and staging area was needed.
- a. CDOT was able to get permission from USFS to allow additional access routes through their property.

Additional Analysis: The design team also contacted precast concrete manufacturers about the constructability of the originally advertised curved precast CBC. While suppliers confirmed it was possible to build, it would add complexity. Since they had plenty of other work, they indicated they wouldn't be submitting bids. To increase interest in the project, and potentially reduce pricing, the design team revised the horizontal alignment of the precast CBC to be straight.

CCA and the meeting attendees were notified that the design team would be discussing alternative procurement with executive management.

For comparison, a recent project with similar subsurface perpendicular construction was advertised under design/bid/build and awarded to a contractor with limited experience in this type of work. When the operation ran into obstacles, the contractor made several failed attempts to solve them, resulting in a dispute, a delay of over a month, and almost \$200,000 in change orders to the project. By using the Best Value process, we hoped to minimize the risk of a similar outcome on project 20744.

With community buy-in to close the highway for a set period of time, it was important to complete the work as quickly and efficiently as possible. An experienced contractor with specialized skills in mountain tunneling and CBC work and a well-organized schedule would be key to the project's success.

After presenting the advantages and disadvantages (listed below) to executive management, it was agreed that the project would be repackaged, readvertised, and awarded using the Best Value Alternative Contracting Process.

Advantages:

Reduced risk to CDOT: By selecting a bidder based on their complete and written understanding of the critical aspects of the project (qualifications, experience, schedule, price), rather than just price, CDOT anticipated an increased potential for selecting and awarding the most qualified and capable bidder available.

It was especially important on project 20744 to have a contractor experienced in tunneling and CBC construction for the following reasons:

Risk Mitigation: Project 20744 had a 30-day window to close US 36, a primary route in and out of Estes Park, Rocky Mountain National Park, and the surrounding area. The closure would impact emergency services, school transportation, utility, and postal services. There would be no time for error; the work needed to be completed as safely and efficiently as possible so the corridor could be reopened.

Results: As shown in the comments below, all three bidders had relevant experience in the specific fields of tunnel and CBC work.

Proposer 1: Described previous construction project involving tunneling and CBC installation

Proposer 2: Had top-down tunneling experience, which wasn't the same type of tunneling approach as project 20744. They had adequate CBC experience.

Awarded Bidder: Described cumulative experience in tunnel and CBC work from multiple projects, but lacked detail of specific projects.

Added Flexibility: By using the Request for Proposal (RFP) process, the bidders were given the opportunity to present the strengths they would bring to the project, and CDOT expressed to the contracting community, in a competitive environment, the most important or critical aspects of the project. In addition, by asking the bidder what they saw as challenges and how they planned to resolve them, the stage would be set for a proactive partnership between CDOT and the Contractor.

Because CDOT assigned value to experience, the RFP process gave bidders the flexibility to be more selective in choosing their subcontractors. Bidders could consider the subcontractor best suited for the type of work that would be performed, rather than just low bid. This was a win-win for CDOT and the Contractor.

Results: As shown below, all three proposals demonstrated the bidders put thought into critical aspects of the project such as tunneling, water diversion, and a tight time window for CBC installation. This set the stage for a solution-oriented working relationship between CDOT and the Contractor.

Proposal 1: Risk Mitigation: The bidder proposed doing their own early geotechnical verification of existing subsurface conditions

Proposal 2: Schedule: The bidder would develop an hour-by-hour schedule during the road closure and have a plan with several "what if" scenarios to prepare mitigation strategies. They also proposed using biodegradable oil in machinery when working near environmentally sensitive areas.

Awarded Proposal: Design Innovation: The bidder had already consulted with a subcontractor specializing in tunneling. If they were awarded the contract, they would be submitting an alternative tunnel design.

Schedule and MOT Value: An essential measure of the success of the project was the well-coordinated implementation of the full closure of US 36 at MP 8.0 during excavation and installation of a precast CBC. This critical path item had potential to impose adverse impacts on the local tourism economy, local schools, and freight. Therefore, CDOT assigned weight to the proposal which best demonstrated a complete understanding of the project, experience in the type of work critical to the project schedule, and a commitment to reopen the road in 30 days or less.

Results: The project was awarded for a reasonable price and with a commitment affidavit to reopen the road in 26 days by a bidder with experience in tunnel and CBC work.

Disadvantages:

Reduced competition: CDOT was concerned the multistep bidding process would reduce the amount of bidders.

Results: There was no change in the number of bidders. The project received the same number of bidders (3) that were received when the project was originally advertised using the standard procurement process.

Longer advertisement period: A typical design-bid-build contract is four weeks. With Best Value, the advertisement period was extended to six weeks so proposals can be evaluated.

Results: Due to several contributing factors, the time from advertisement to award was longer than anticipated. The project was advertised on 10/24/2019 and awarded on 1/08/2020. There were almost 11 weeks between advertisement and notice of award.

Lost Opportunity for Inexperienced Bidders: Because tunneling and CBC experience carried significant weight in the final Best Value score, bidders without this experience didn't submit a proposal and missed the opportunity to participate in the alternative bidding process.

Time Consuming for Bidders: It is more time consuming for bidders to assemble a technical proposal than submitting price alone. There is more upfront investment by the bidders with no guarantee of actually getting the work.

F. Schedule

<u>Milestone:</u>	<u>Planned Date:</u>	<u>Actual Date:</u>
Advertisement (RFP)	October 24, 2019	October 24, 2019
Pre-proposal Conference	October 31, 2019	November 8, 2019
Proposal Due Date	November 5, 2019	November 21, 2019
Award of Contract	November 20, 2019	January 8, 2020
Notice to Proceed	January 8, 2020	January 24, 2020
Start Construction	February 8, 2020	February 24, 2020

There were delays between the planned dates and actual dates due to the holidays, employee attrition, software issues, and end of year backlog. None of these challenges were as a result of using Best Value project selection.

The as-advertised schedule provided for a maximum road closure duration of 30 days between 3/09/2020 to 4/07/2020.

G. Technical, Schedule, And Cost Proposals

The Qualifications and Proposals were evaluated by a Selection Committee composed of individuals from the following offices:

Keith G. Sheaffer, PE, South Program Engineer (CDOT)
Brian Varrella, PE, CFM, Resident Engineer (CDOT)
Stacy DeWitt, PE Project Engineer (CDOT)
James Zufall, Project Design Manager (CDOT)
Matthew Pacheco, PE, Alternative Bidding (CDOT)
CDOT Legal Division
Non-voting Evaluator: United States Forest Service (USFS)

After the Selection Committee received the evaluation training from Matthew Pacheco, a non-voting member of the Selection Committee, all the evaluators signed confidentiality agreements.

Three bidders submitted Best Value proposals for the project. **(Attachment C)** Only one of the six bidders that had previously bid on the project under the design/bid/build format submitted a Best Value proposal.

- 1) Review of Technical Proposals: With the exception of one proposer needing to provide more identifiable project info for reference checks, all three proposals satisfied the requirements of the RFP (Request For Proposals).
- 2) With one exception, the technical proposals described relevant experience in tunneling and CBC construction. (One proposal cited vertical drilling as their tunneling experience. In hindsight, CDOT should have clarified that only horizontal drilling experience would be relevant)
- 3) All three proposals demonstrated an understanding of the unique challenges and specialized skills that would be needed for the project, as well as their approach to risk management and Project First. For example, one bidder proposed to do their own geotechnical investigation prior to tunneling and go over any differences found between their results and CDOT's results.

- 4) All three proposals provided a satisfactory schedule narrative, which gave insight into their project schedule management skills. The details varied from highly organized and broken out, to more general statements which identified critical path items and potential risks to the schedule.

All five committee members reviewed and rated the proposals individually, assessing strengths and weaknesses of the responses. The Selection Committee then gathered for a Smoothing Meeting to present the ratings of each individual evaluator to the larger group, and the objective evidence supporting the rating. This provided an opportunity to consider other evaluators perspectives and objective evidence to reinforce their assessment of strengths and weaknesses.

The final ratings were then averaged to determine the bidder’s final Technical Score (TS) and added to the Schedule Proposal Score (SPS). After the bids were opened, the final piece of the Best Value Formula, the Bid Proposal Score (BPS), was added to determine each bidder’s Best Value Score. **(Attachment B)**.

The bidder with the highest score was identified in a memo and sent to the Chief Engineer requesting concurrence to award the project. Concurrence was granted.

Debriefings were available to the unsuccessful bidders, but none were requested.

Selection Formula

Best Value Score = 50% (Technical Score) + 35% (Schedule) + 15% (Cost Eval.)

Technical Proposal Evaluation Scoring

All Technical Proposals were scored before any price proposals were opened or the identity of the bidders was known.

As described in the SEP 14 Best Value Workplan **(Attachment A, pages 6-7)**, the Technical Score (TS) was based on the bidder’s answers to nine technical proposal questions. **(Attachment D, page 8a)**

An adjectival rating system was used to evaluate bidder responses. This rating system made the review process more efficient by only allowing for three possible ratings. After the Smoothing Meeting, the ratings were translated to a numerical value for use in the Selection Formula:

Adjectival Rating System

“Green” (5 points)	Responses indicated significant strengths and no weaknesses
Yellow” (3 points)	Responses indicated significant strengths along with weaknesses
“Red” (0 points)	Responses indicated weaknesses which were not offset by strengths.

The proposal questions focused on the following criteria:

- Recognize and address project risks
- Show similar experience, especially with tunneling
- Safety
- Project First-CDOT's Formal Partnering Process/dispute resolution
- Project Management/Organization
- Quality and Budget Control

Technical Score Possible Points (Qualifications, Experience, and Management): 50.0

Highest Score Achieved: 45.2

Awarded Bidder Score: 38.6

Schedule

The contract was required to submit a basic construction schedule with key milestones, such as completion of the east culvert, west culvert, rock blasting, guardrail, and final pavement. The maximum road closure duration was 30 days within the fixed time window of 3/09/2020 to 4/07/2020 with detours on US34 and CO7. Every day less than 30 days would add 3 points to the score. The awarded bidder then signed an affidavit stating that the project would be complete during the shortened road closure time. Liquidated damages of \$5,500 per day would be assessed if they went over their commitment closure time, and an equivalent bonus of \$5,500 per day was awarded for each day the road was fully opened to the public early.

Schedule Evaluation Possible Points: 35.0

Highest Score Achieved: 35.0

Awarded Bidder's Proposed Closure Duration: **26 days**

Awarded Bidder Score: 35.0

Cost

After the Technical Proposal and Schedule score was calculated, the project cost was reviewed and a Composite Score was determined. The awarded bid proposal was within 1.5% of the Engineer's Estimate.

Cost Evaluation Possible Points: 15.0

Highest Score Achieved: 15.0

Engineer's Estimate: \$8,892,374.55

Awarded Bidder Cost Proposal: \$8,764,706.00

Difference between Engineer's Estimate and Awarded Bidder Cost Proposal: -\$127,668.55

Awarded Bidder Score: 15.0

H. Best Value Determination

The CDOT selection committee aggregated the individual scoring components for the Technical Proposal Score, Schedule Proposal Score, and Bid Proposal Score. The bidder with the highest Best Value Score was selected with the following formula:

$$BV = TS * 50\% + SPS * 35\% + BPS * 15\%$$

BV = Best Value
TS = Technical Proposal Score
SPS = Schedule Proposal Score
BPS = Bid Proposal Score

Bidder A:
TS 45.2 + SPS 30.3 + BPS 10.9 = BV Score 86.4

Bidder B:
TS 35.0 + SPS 33.7 + BPS 14.8 = BV Score 83.5

Bidder C:
TS 38.6 + SPS 35.0 + BPS 15.0 = BV Score 88.6

Attachments:

- Attachment A:** SEP 14 Best Value Workplan
- Attachment B:** 20744 Best Value Summary Roll up
- Attachment C:** 20744 Bid Results for 2019
- Attachment D:** 20744 Best Value Request for Proposals

CDOT Best Value Request for Proposal Notice to Contractors

October 24, 2019

Project: ER 0361-118 (20744R)

US 36 – Site 17

The Colorado Department of Transportation (CDOT) is issuing a Best Value Request for Proposal Notice for this project. The prime general contractor that is determined to provide the best value to the taxpayer and the State of Colorado shall be selected to contract for this project. The Best Value Technical Proposal Submittals must be sent to the attention of **RB Simmons, Construction Contracts Manager via email at rb.simmons@state.co.us by no later than 10:00AM on Thursday November 14, 2019 .**

The Solicitation and Award Schedule:

Project Advertisement (Request for Proposals)	Thursday, October 24, 2019
Mandatory Pre-proposal Conference	<u>Friday</u> , November 08, 2019
Step 1; Step 2 and Step 3 of the Technical Proposal:	
Questions Cutoff Date	Friday, November 08, 2019
Responses to Questions posted	Tuesday, November 12, 2019
Step 1; Step 2 and Step 3 Due Date	Thursday, November 14, 2019
Step 4 Bid Price Proposal:	
Questions Cutoff Date	Friday, November 15, 2019
Responses to Questions posted	Monday, November 18, 2019
Step 4 Bid Letting Due Date	Thursday, November 21, 2019
Award Results Announced	Monday, December 02, 2019
Award of Contract/Issuance of Notice of Award Letting	Within 30 Calendar Days from the Date of Bid Letting

The **Mandatory Pre-Bid Conference** is scheduled for **Friday, November 08, 2019 from 10:00 AM to 12:00 PM**. The meeting will be held at **CDOT Boulder Office 1050 Lee Hill Drive, Boulder, CO 80302**

Best Value Proposal Points of Contact:

For question regarding Best Value Request for Proposal submittal requirements please contact RB Simmons by phone at 303-757-9416 or by email at rb.simmons@state.co.us

For project scope of work technical related questions please contact CDOT Region 4 Resident Engineer, Brian Varrella, by phone at 303-546-5649 or by email at brian.varrella@state.co.us

Project Scope of Work Overview:

This project consists of Re-wetting of Muggins gulch on US 36 from M.P. 7.7 to M.P. 8.0 in Larimer County. Major elements of the Work include:

- installation of two concrete box culverts,
- tunnel work,
- National Forest Service Coordination,
- specialized river and environmental considerations,
- rock blasting to establish rockfall ditch, and
- paving an rockfall mitigation, etc.

Note: The detailed project plans and specifications for this project are available through CDOT's B2G system at: <https://cdot.dbesystem.com/>

Best Value Technical Proposal Process:

In order to be considered for this project, interested bidders must successfully complete the four-step Best Value Proposal process identified in this notice and attend the Mandatory Pre-proposal conference.

Step 1 – Prospective bidders must be prequalified for the bidding level up to \$15 Million pursuant to CDOT's bidding rules prior to the date of the bid letting for this project. Prospective bidders not currently prequalified as prime general contractors must successfully complete a prequalification application through CDOT's B2G system. The web links for CDOT's Bidding Rules and the B2G System are provided below:

Bidding Rules: <https://www.codot.gov/business/bidding/documents/rules-governing-construction-bidding-2-ccr-601-10>

B2G System: <https://cdot.dbesystem.com/>

Step 2 – Bidders must complete and return the ***Best Value Technical Proposal, the Schedule affidavit, and their Bid price proposal by the Dates and times identified in The Solicitation and Award Schedule of this notice***.

The ***Best Value Technical Proposal*** must be sent to the attention of RB Simmons, Construction Contracts Manager as per the instructions identified on Page 1 of this notice. Proposals received after the due date and time stated in this notice shall be considered non-responsive and will not be evaluated.

Bidders must answer all questions and provide all the information requested in the technical proposal to be eligible for evaluation.

Part 1 of Step 2-Identifiable Proposal Requirement Responses shall be typewritten and no more than 5 double-sided pages in length 8.5"X 11", single spaced, using no smaller than an 11-point font with 1 inch margins (page limits do not include providing cover or signature pages). Identifiable Proposal Requirement Responses and Schedule affidavit must be sworn to and signed by an authorized agent of the Bidder and notarized.

The Best Value Technical Proposal Evaluation process will be conducted using a blind evaluation approach where information regarding the Bidder's identity is hidden from the evaluation committee during the initial evaluation of the proposals. The evaluation committee will provide the results from the initial blind evaluation to the Engineering & Contracts Office. Once the initial blind evaluations are completed, Part 1-Identifiable proposal requirement responses from each Bidder will then be given to the evaluation committee for verification and for a reference check. The evaluation committee will then complete the verification of the Best Value Technical Proposals, and finalize the results.

Part 2 of Step 2-Best Value Technical Proposal Responses shall be typewritten and no more than 5 double-sided pages in length on 8.5"X 11", single spaced, using no smaller than an 11-point font with 1 inch margins.

Best Value Technical Proposal Responses will be rated using a Modified Satisficing Rating process as described below:

Green (5pts)– Response indicates significant strengths and/or a number of minor strengths and no significant weaknesses. Minor weaknesses are offset by strengths. There exists a small possibility that, if ultimately selected as the contractor, the minor weaknesses could slightly adversely affect successful project performance.

Yellow (3pts) – Response indicates significant strengths and/or a number of minor strengths. Minor and significant weaknesses exist that could detract from strengths. While the weaknesses could be improved, minimized, or corrected, it is possible that if ultimately selected as the contractor, the weaknesses could adversely affect successful project performance.

Red (0pts) – Response indicates weaknesses, significant and minor, which are not offset by significant strengths. No significant strengths and few minor strengths exist. It is probable that if ultimately selected as the contractor, the weaknesses would adversely affect successful project performance.

The terms “Strengths and Weaknesses” as used in the above color ratings are defined as follows:

Strengths: That part of a response that ultimately represents a benefit to the project and is expected to increase the submitter’s ability to meet or exceed the project’s goals. A minor strength has a slight positive influence on the submitter’s ability to meet or exceed the project’s goals whereas a significant strength has a considerable positive influence on the submitter’s ability to meet or exceed the project’s goals.

Weaknesses: That part of a response that detracts from the submitter’s ability to meet the project’s goals or may result in inefficient or ineffective performance. A minor weakness has a slight negative influence on the submitter’s ability to meet project goals whereas a significant weakness has a considerable negative influence on the submitter’s ability to meet the project’s goals.

Contractors will be categorized overall as either “Prequalified” or “Not Prequalified.” CDOT will be the sole judge in determining the eligibility of a Contractor, and reserves the right to refuse eligibility to any Contractor CDOT considers not qualified to successfully complete the project. CDOT decisions regarding a Contractor being prequalified to bid on the project will be final.

Step 3 – Schedule Proposal (35 pts)

An essential measure of the success of this project is the well-coordinated implementation of the Road Closure as described in the plans and specifications of the bid package. This Critical path item has potential to impose adverse impacts on the tourism economy, local schools, emergency services and freight. Therefore, CDOT will award points based on how well the closure plan is structured to efficiently use the closure time, and minimizing the potential for adverse impacts to the resources described above.

The Schedule Proposal score will be determined by comparing each firm’s Milestone Commitment Affidavit (Appendix A) using a ratio. That ratio will then be applied to the Total points available for the Schedule Proposal to determine the points earned by the Bidder. The shortest Schedule Proposal (fewest number of consecutive calendar days of full closure) will receive the maximum score of 15 points. Schedule affidavit must be sworn to and signed by an authorized agent of the Bidder and notarized.

Scoring of the Schedule Proposal will use the following equation:

$$\frac{S_{low}}{S_n} \times Pts_a = Pts_e$$

S_{low} = The shortest Schedule Proposal on the Milestone Commitment Affidavit of all Bidders

S_n = Individual Firm’s Commitment as proposed on the Milestone Commitment Affidavit

n = Individual Bidder

Pts_a = Total Points available for this section

Pts_e = Points earned by the Contractor rounded* to the nearest tenth point

***Calculation outcome will be rounded to the tenth**

Example:

CDOT received 3 Schedule Submittals for this project.

Bidder A = 29 Days

Bidder B = 27 Days

Bidder C = 25 Days

The Lowest Schedule Submittal for this example is:

$$S_{low} = 25 \text{ Days}$$

$$Pts_a = 35pts$$

Points earned for Contractor A:

$$S_{low} = 25 \text{ Days}$$

$$S_A = 29 \text{ Days}$$

$$Pts_a = 35pts$$

$$Pts_e = \frac{25}{29} \times 35pts = 30.2pts$$

30.17241 calculated pts

rounded to 30.2 pts

Points earned for Contractor B:

$$S_{low} = 25 \text{ Days}$$

$$S_B = 27 \text{ Days}$$

$$Pts_a = 35pts$$

$$Pts_e = \frac{25}{27} \times 35pts = 32.4pts$$

32.4.0741 calculated pts

rounded to 32.4 pts

Points earned for Contractor C:

$$S_{low} = 25 \text{ Days}$$

$$S_C = 25 \text{ Days}$$

$$Pts_a = 35pts$$

$$Pts_e = \frac{25}{25} \times 35pts = 35.0 \text{ pts}$$

35 calculated pts

rounded to 35 pts

Step 4 – Bid Price Proposal (15 pts)

Bid Price Proposals shall be submitted separately through the Bid Express system using the EBSx bid file provided with this solicitation. The Bid Price Proposal score will be determined by comparing each firm’s sealed Bid Price with the lowest Bid Price using a ratio. That ratio will then be applied to the Total points available for the Bid Price to determine the points earned by the Bidder. The lowest Bid Price Proposal will receive the maximum score of 15 points.

Scoring of the Bid Price Submittal will use the following equation:

$$\frac{L_{low}}{L_n} \times Pts_a = Pts_e$$

L_{low} = Lowest Bid Price Submittal of all Bidders
 L_n = Individual Bid Price Submittal for each Bidder
 n = Individual Bidder

Pts_a = Total Points available for this section
 Pts_e = Points earned by the Bidder rounded* to the nearest tenth point

*** Calculation outcome will be rounded to the tenth point**

Example:

CDOT received 3 Bid Price Submittals for this project

Bidder A = \$12,500

Bidder B = \$14,250

Bidder C = \$10,000

The Lowest Bid Price Submittal for this example is:

<p style="text-align: center;">$L_{low} = \\$10,000$ $Pts_a = 15pts$</p> <p>Points earned for Bidder A:</p> $Pts_e = \frac{\cancel{\$10,000}}{\$12,500} \times 15pts = 12.0pts$ <p style="text-align: center;">12 calculated pts rounded to 12 pts</p>	<p style="text-align: center;">$L_{low} = \\$10,000$ $Pts_a = 15pts$</p> <p>Points earned for Bidder B:</p> $Pts_e = \frac{\cancel{\$10,000}}{\$14,250} \times 15pts = 10.5pts$ <p style="text-align: center;">10.52632 calculated pts rounded to 10.5 pts</p>	<p style="text-align: center;">$L_{low} = \\$10,000$ $Pts_a = 15pts$</p> <p>Points earned for Bidder C:</p> $Pts_e = \frac{\cancel{\$10,000}}{\$10,000} \times 15pts = 15.0pts$ <p style="text-align: center;">15 calculated pts rounded to 15 pts</p>
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Best Value Determination

To determine which contractor has proposed the Best Value, CDOT will aggregate the individual scoring components for Technical Proposal Score; Schedule Proposal Score; and Bid Proposal Score. The Contractor with the Highest Best Value Score will be selected.

$$BV = TS + SPS + BPS$$

$BV = Best Value$
 $TS = Technical Proposal Score$
 $SPS = Schedule Proposal Score$
 $BPS = Bid Proposal Score$

STEP 2 Best Value Technical Proposal Requirements

Project: ER 0361-118 (20744)

Part 1 – Identifiable Proposal Requirements

Part 1 Instructions: Please provide responses below to the Identifiable Proposal Requirements for your firm. Responses to Part 1 are to be submitted as a separate pdf file from the non-identifiable Part 2 submittals.

Company Information:

Name of Contractor (Corporation, Partnership, etc.)

Main Address of Contractor

Authorized Agent Point of Contact

Authorized Agent Signature and Date

Phone Number of Authorized Agent Contact

Submittal Requirements:

A. Previous Experience

Provide a list all "Relevant" tunnelling or drilling projects within a mountainous region that your company has completed as a prime general contractor within the last five years (Relevant is defined as being similar in scope and complexity as described in the project plans and specifications for CDOT project (20744). Provide the following information for each project:

1. Project number, description, and location.
2. Name and address of owner.
3. Name and phone number of owner's project manager.
4. Scope of work performed (identify any similarities to the project proposed under this special prequalification notice).
5. Type of contract (design/bid/build, CMGC, Design Build, etc...).
6. Contract amount as bid and final amount paid.
7. Contract start date, initial completion date, and final completion date.
8. Indicate if Contract was fully completed, terminated for convenience or for cause, and or not completed for any other reason and why.
9. Indicate if liquidated damages were assessed, and if so for how many days and the dollar amount. Describe what categories such as Time/Count/Milestones, Erosion Control, Traffic Control...etc. they were applied for.

Part 1 - Continued

B. Current Contracts

Provide the following information regarding all current tunnelling or drilling projects within a mountainous region still in progress that your company is the prime general contractor for:

1. Project number, description, and location.
2. Name and address of owner.
3. Name and phone number of owner's project manager.
4. Begin date, percent complete, and estimated completion date.
5. Contract amount as bid and dollar amount of uncompleted work.
6. Scope of work being performed (identify any similarities to the project proposed under this special prequalification notice).
7. Indicate if the project will be completed on schedule per the original awarded contract or not? If not, please explain why.
8. Name and work experience of superintendents employed on current contracts.

C. Proposed Project Organizational Chart

Please provide the proposed project organizational chart with the identifiable information relating to key personnel planned to be used for administration/completion of the project (the project organization chart should correspond with the one provided under Question No. 1 in Step 2 – Part 2).

Note: The responses provided under Part 1 will be used to verify the responses provided under Part 2 for Questions 1 & 2 of this prequalification notice.

Part 2 – Best Value Technical Proposal

Part 2 Instructions: Please provide responses below to the Non-Identifiable Prequalification Submittal Requirements for your firm. Responses to Part 2 are to be submitted as a separate pdf file from the Identifiable Part 1 submittals. Please avoid providing information in responses for Part 2 that reveal your company's identity. Responses should reflect your understanding of and ability to successfully complete CDOT project 20744.

General Questions (40 pts):

- 1) Provide your proposed project organizational structure/chart (Titles and Roles only, no names or identifiers).
- 2) Describe your company's relevant experience in completing tunneling and Concrete Box Culvert work (either self-performed or through subcontractor(s)), and give up to 3 examples of tunneling projects in the last five years.
- 3) Describe your plan and approach to maintain budget, quality and durability while working under a compressed schedule?
- 4) Describe how you will maintain safety and mobility during construction to minimize impacts to the traveling public and workers? Include a description of:
 - the proposed incident and emergency management plan,
 - and public information plan for this project.
- 5) What are the top three challenges you see with this project? Describe your approach to mitigate and resolve the issues you have identified.
- 6) Give an example of the Project First concepts you have used to resolve a dispute, and how it was implemented. Provide a narrative of the outcome.
- 7) Describe a situation where you had to work with the owner to mitigate an unforeseen condition. Include in your example how cost and schedule impacts were minimized. Provide a narrative of the outcome.
- 8) What differentiates you from other contractors as it applies to this project?

Schedule narrative (10pts):

- 9) Describe your team's plan for managing the following project critical path elements:
 - Design and fabrication of long lead time procurement items (e.g. precast Box Culvert),
 - Commencing construction on January 9, 2020,
 - Road closure of 30 consecutive calendar days or less. Include a description of your approach to phasing, and how your resources would be used to achieve these schedule goals:
 - a) salient features for the closure:
 - i) Culvert Excavation
 - ii) Installation of Box Culvert and Headwalls
 - iii) Rock Blasting and Clearing
 - iv) Detour Pavement
 - v) Complete all work so the road can be paved and reopened

Note: Responses to Part 2 Question's 1 & 2 will be verified against the associated responses provided under Part 1 of this prequalification notice.

Appendix A

Milestone Commitment Affidavit

_____, certify the Following:
(Bidder Authorized Agent Name)

- Commit to meeting the following completion milestones (Commitment shall be in *whole* days only partial days will be rounded up to the next whole day)

Milestone	Milestone Completion timelines	
Full Closure of US 36	Maximum Duration (Consecutive Calendar Days)	Proposed Duration (If proposed, shall be less than maximum Duration) (Calendar Days)
	30	

- My Firm commits to completing construction of the Project by the Project Completion Deadline of **December 31, 2020**.
- I am legally authorized to make the representations in this affidavit on behalf of

(Bidder/Firm Name)

- I know and understand the details, requirements and constraints involved in implementing this full closure of US 36.

I affirm under penalty of perjury that the representations contained in this affidavit are true, complete and accurate to the best of my knowledge and belief

Printed Name of Affiant

Date (month/Day/Year)

Signature of Affiant

Signature of Affiant

Project Wild Fire Precaution/Guidance

Purpose:

This Guidance is to be incorporated in the project safety plan as required by Section 107.06 of the Standard specifications and shall do the following:

1. Provide guidance to project staff regarding procedures and precautions to be taken during the existence of a wild fire within the vicinity of the project.
2. Provide information regarding increased communication lines during a wild fire within the vicinity of the project.

Project Contacts:

<u>Title</u>	<u>Name</u>	<u>Phone Number</u>	<u>Organization</u>
Project Manager			
Project Superintendent			
Superintendent (Backup Project Superintendent)			
Resident Engineer			
Project Engineer			
Backup Project Engineer			
Project TCS			
Backup TCS			
Project PI Manager			
USFS Dispatch			
Pine Wood Springs Fire Protection District			
CDOT Office Land Line			
Flatiron Office Land Line			
CDOT R4 Communication Manager			
Larimer County Sheriff's Office			
Boulder County Sheriff's Office			

Communication:

During an incident concerning a natural disaster/hazard communication is extremely important to ensure that all parties involved are current with any changes.

Each Item addressed in this document has its own but similar communication flow as shown.

While fires are active in the area any and all notification services pertaining to fires will be subscribed to in order to receive updates as they become available. Additionally Social media will monitored for any other updates available.

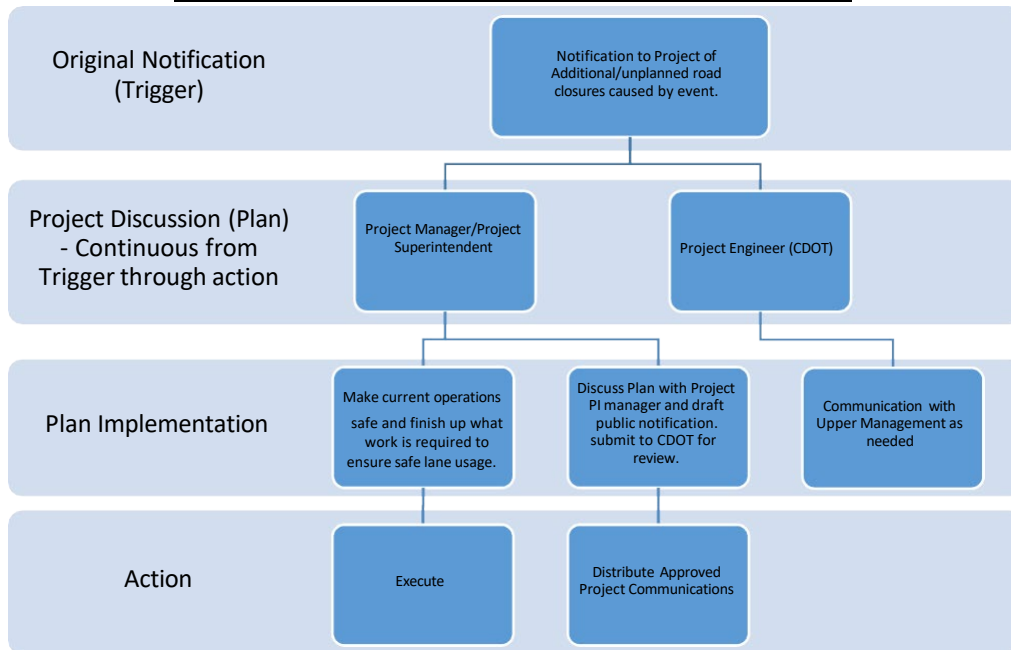
Project Wild Fire Precaution/Guidance

These updates will be shared daily to the project team via email. In an attempt to maintain an accurate accounting of events and decisions all email correspondence regarding these updates will be kept in the same email chain to allow for easy reference in the future.

Traveling Public/Lane Closures:

1. In the event that US34, US36, or SH7 become closed as a result of a natural disaster such as fire all efforts are to be made on the project to alleviate traffic congestion through the area as well as to ensure the safety of project personnel due to the increased traffic volumes.
2. Any decision to cease the use of lane closures on the project will be **discussed between the Project Superintendent, Project Manager, Area Manager, Project Ownership, and all other affected parties prior to a decision being made.** The full impact of such a decision should be understood and agreed to prior to the decision being made.
3. Once Plans are agreed to by the project team all necessary communications to the public will be distributed via email to convey decisions.

Communication Process (if Lane Closures in Use)



Project Wild Fire Precaution/Guidance

Air Quality:

Background/Daily AQI Color	Levels of Concern	Values of Index	Description of Air Quality
Green	Good	Below 50	Air Quality is considered satisfactory, and air pollution poses little or no risk.
Yellow	Moderate	51 to 100	Air Quality is acceptable. However, there may be a risk for some people, particularly those who are unusually sensitive to air pollution.
Orange	Unhealthy for sensitive groups	101 to 150	Members of sensitive groups may experience health effects. The general public is less likely to be affected.
Red	Unhealthy	151 to 200	Some members of the general public may experience health effects; members of sensitive groups may experience more serious health effects.
Purple	Very Unhealthy	201 to 300	Health alert – The risk of health effects is increased for everyone.
Maroon	Hazardous	301 or higher	Health warning of emergency conditions; everyone is more likely to be affected.

The chart above is EPA guidance on air quality and the effects to the health of individuals.

Current air quality numbers for the project area can be found at <https://fire.airnow.gov/?lat=40.37612000000007&lng=-105.52436999999998&zoom=12>.

As the fire hazards in the area continue, this link shall be checked by the project superintendent a minimum of 3 times per day (before shift, around lunch time, end of shift)

As the air quality level increases the project has to be aware of all possible health issues. If at any point in time an individual employee has any health concerns regarding the air quality these issues need to be discussed with management and dealt with accordingly.

Utilizing the Air Quality numbers from the above link the following should be followed:

- If the sustained index is <151:
 - no action needed
- If the sustained index is 151>201:
 - Each company on the project will secure N95 or equivalent masks and make available for employees on the project for **voluntary** use. If an employee has been fit tested for a respirator previously and has a respirator available to them, this respirator can be used in place of an N95 mask.
 - If an employee is not comfortable working in these air conditions, they may notify their supervisor and end their shift or make alternate arrangements
- If the sustained index is >201:
 - All unnecessary work onsite shall be suspended.

Project Wild Fire Precaution/Guidance

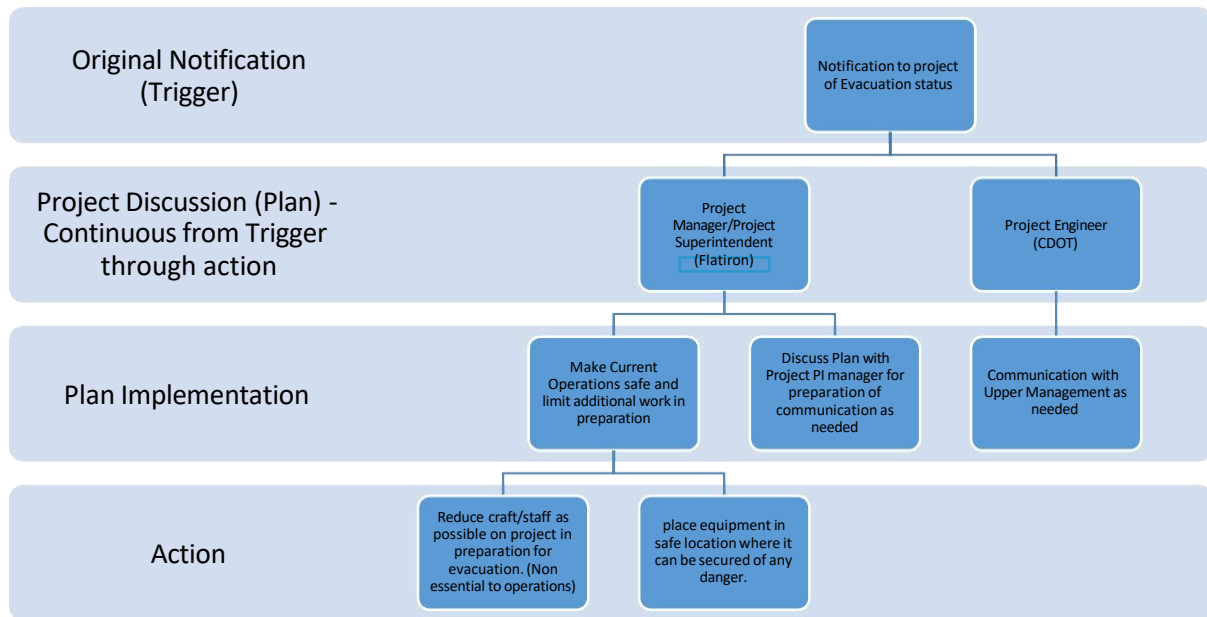
- If an activity cannot be suspended, the operation may continue until a safe stopping point is reached. However, all employees **must** wear a N95 mask or respirator if previously fitted, and voluntarily continue with the work.
- Any operation that is to continue under this condition will be discussed with management to get concurrence on the necessity of the operation.

Fire Distance/Evacuation:

As the weather conditions and size of the fire is constantly changing, setting a distance for evacuation is difficult therefore the project will rely on local agency recommendation for evacuation.

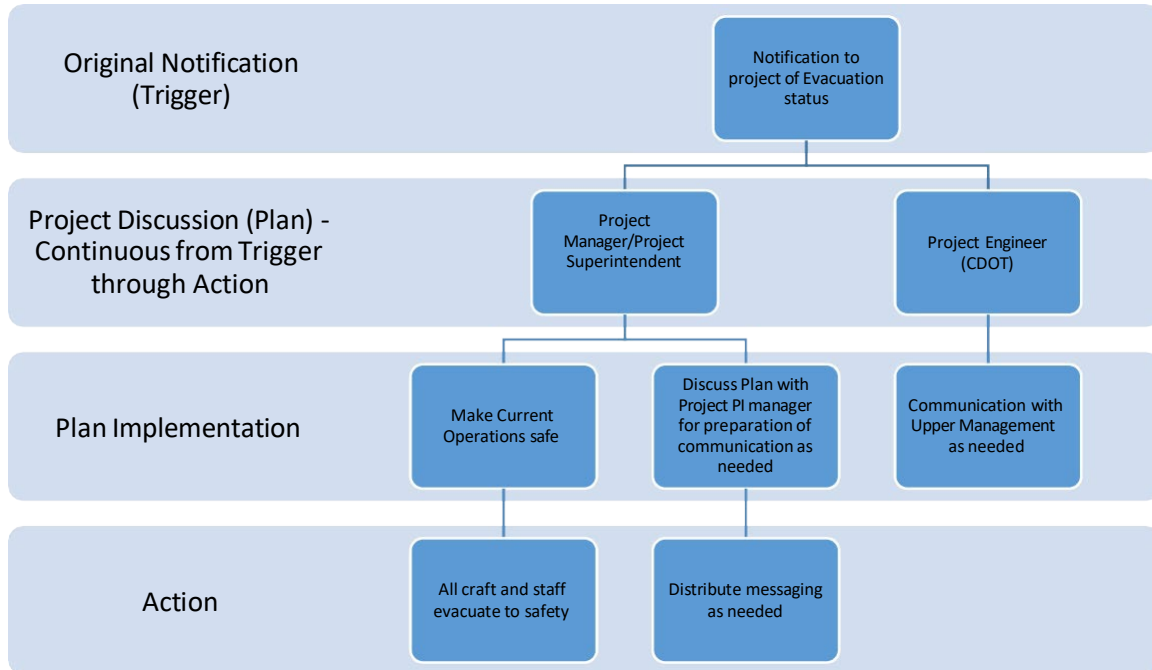
- At the time of this plan the 2 fires of concern in the area are the Cameron Peak Fire and the Calwood fire. The following website provides information regarding all active fires in the area at any given time: <https://inciweb.nwcg.gov/>
- Larimer County has set up a website and notification service to monitor the progress of the Cameron Peak fire. This information can be found here: <https://www.larimer.org/cameron-peak-fire>.
- Information regarding the Calwood fire can be found at <https://www.boulderoem.com/emergency-status/>. As of the time of this plan not too much information is available regarding this fire.
 - Project Superintendent at a minimum will sign up to receive notifications regarding evacuations, road closures, etc.
 - This websites and the notifications will provide requirements for either voluntary evacuation or mandatory evacuation.
 - Voluntary Evacuation: If the project site falls within the area of a Voluntary Evacuation preparations will begin to be made for a full shutdown and discussions should be had regarding the following items to determine the best course of action. **These discussion should include at a minimum the Project Superintendent, Project Manager, Area Manager, Project Ownership, and all other affected parties prior to a decision being made.** The full impact of such a decision should be understood and agreed to prior to the decision being made.
 - Equipment – is there equipment onsite that can be demobilized and not impact the project?
 - People – are there non-essential people on the project site?
 - Schedule – are there non-critical activities planned during this time that can be easily rescheduled to avoid a possible conflict?
 - Etc.
 - Communication flow will be as follows:

Project Wild Fire Precaution/Guidance



- **Mandatory Evacuation:** If the project site falls within the area of a Mandatory Evacuation all activities on the project will be suspended until the evacuation is lifted.
 - During the process of final evacuation the following measures will be in place:
 - A lookout will be put in place in a location where the oncoming threat can be seen with the sole purpose of monitoring the conditions.
 - Communication is to be kept to essential communication only. Communication will be radio communication
 - Work will be performed in teams to ensure that the “buddy System” is maintained to keep track of all individuals on the project.
 - Escape routes are to be discussed with all individuals on the site prior to beginning the work required to safely leave the site. These routes will be based on the conditions at the time.
 - A safety zone is to be established to ensure that in the event that the fire encroaches faster than planned and a safe evacuation cannot occur refuge can be taken until help arrives.
 - Communication flow will be as follows:

Project Wild Fire Precaution/Guidance



20744 Muggins Gulch Innovation/Kudos List



No.	Innovations/Kudos	Owners	Impact	Category 1	Category 2	Category 3
1	Quick turn around on establishment of safety plans (i.e., COVID-19 & Forest Fire)	Flatiron	Innovative	Safety	Wildfire	
2	Enactment of plans (such as self-quarantining after possible exposure to COVID-19)	Flatiron	Innovative	Safety	Pandemic	
3	Progress meetings together but apart using virtual meeting technology (meeting in separate trailers)	Project Team	Helpful	Safety	Pandemic	
4	Hand washing stations and sanitizing chemicals onsite	Project Team	Beneficial	Pandemic	Safety	
5	Cleaning common areas at end of each day	Project Team	Beneficial	Pandemic	Safety	
6	No COVID-19 outbreaks on project and no major delays to critical path project delivery	Project Team	Innovative	Safety	Pandemic	
7	Three simultaneous wildfires with emergency closures, and no injuries or damage to equipment	Project Team	Innovative	Safety	Wildfire	Communication
8	Utilizing forest fire protocols from Calfire based on severity of safe air quality working conditions and worker safety	Flatiron	Innovative	Safety	Wildfire	Communication
9	Review and revise forest fire safety plan with local fire department	Project Team	Innovative	Safety	Wildfire	Communication
10	Taking daily snap shots of forest fire evacuation map for future reference and to track changing conditions in real time from ICS and Federal resources	Project Team	Beneficial	Safety	Wildfire	
11	Bringing in a mixer truck with tire chains, minimizing weather impacts on the delivery of Concrete (due to slick access roads)	DrillTech	Helpful	Operations	Equipment	Constructability
12	Alternative access with use of special ingress & egress; eliminated impacts to historic Muggins Gulch Road and delays with long haul routes	Flatiron, USFS	Innovative	Operations	Stakeholders	Constructability
13	Conversion of access roads to sustainable forest feature and maintainable emergency maintenance route	Flatiron, USFS	Innovative	Operations	Stakeholders	Environmental
14	Water tank on site with gravity feed system; eliminated need for multiple water trucks in different locations onsite at the same time.	Flatiron, Proj. Team	Innovative	Operations	Wildfire	Safety
15	Water capture with filter bag, and settlement basin, frac tank and CO2 injection (and filter pods for fine particles); especially effective in mining country	Flatiron	Innovative	Water Quality	Equipment	
16	pH site map	Flatiron, Proj. Team	Helpful	Water Quality	Operations	
17	Local fill site for excess material, eliminated trips on highway, reducing CO2 emissions, returned portion of mountainside	Flatiron, Proj. Team, USFS, Environmental	Innovative	Environmental	Operations	Safety
18	Rock blasting and screened on site material to use as riprap in final product	Flatiron, Project Team	Innovative	Environmental	Operations	Safety
19	Sharing screened rock materials on US Forest Service land for another project with federal emergency funding (leveraging economies of scale)	Flatiron, USFS, Larimer Co., Project Team	Innovative	Environmental	Operations	Safety
20	Rock blasting face to appear natural (ie minimal half pipes visible)	AWS Blasting	Innovative	Environmental	Operations	
21	Worked on shotcrete panel storage until there was a workable solution, (placed in low traffic area, then taken to trailer, multiple re-usable forms)	Vivid, Flatiron	Beneficial	Operations	Constructability	
22	Canopy Tube Method for tunneling (VECP)	DrillTech, Flatiron	Innovative	Operations	Safety	Constructability
23	Paint elevations and Contours of channel lining on wall and floor of CBC prior to placement of channel lining (red line)	USFS & Flatiron	Innovative	Operations	Constructability	Environmental
24	Material washing into riprap and culvert animal passage fill rock	USFS & Flatiron	Innovative	Operations	Constructability	Environmental
25	Meet with Emergency Services prior to key events such as closing a road or rock blasting	Project Team	Beneficial	Stakeholders	Safety	Operations
26	Stakeholder visits onsite during construction to encourage expected outcomes, manage costs and schedule, and achieve expected results (especially wildlife and aquatic species functions)	USFS, Flatiron, Project Team	Innovative	Stakeholders	Environmental	Operations
27	Survey data during and after construction	USFS, Flatiron, Project Team	Innovative	Operations	Stakeholders	Environmental
28	ABC Special Provisions & Specs for aquatic and animal passage through culvert and tunnel	USFS, Flatiron, Project Team	Innovative	Stakeholders	Environmental	Operations
29	Skilled and engaged equipment operators onsite for the duration of the project	Flatiron	Beneficial	Operations	Stakeholders	
30	Establish communication plan with Emergency Services	Flatiron, Project Team	Beneficial	Stakeholders	Safety	Operations
31	Provide confirmation to first responders, key stakeholders and service agencies immediately after road is clear of rock blasting debris	Flatiron, Project Team	Helpful	Stakeholders	Operations	Communication
32	Using GPS date stamped photos as positive confirmation for TCI days (instead of hard copy diaries)	Project Team, CC Enterprises	Beneficial	Operations		
33	During road closure, using staggered temp barricades so errant drivers could not speed into the construction unimpeded	CC Enterprises	Beneficial	Safety	Operations	
34	Sharing files by Google Drive with CSP of open traffic windows for permit only drivers, detour map, MHTs, project contact info, permit rules and procedures	Project Team	Helpful	Operations	Safety	Communication
35	Flatiron quickly adapted to increased Public Outreach (i.e. Town Hall Meeting and Three Open Houses)	Flatiron, Circuit Media, CIG, Project Team	Innovative	Stakeholders	Operations	Communication
36	2D hydraulic analysis for redesign, Larimer Co. emergency permitting, and as-built permit closeout	Flatiron, Project Team	Innovative	Operations	Stakeholders	
37	Support and design personnel were adaptable & nimble during closures and emergency events to quickly support onsite construction decisions	Project Team, Flatiron	Innovative	Communication	Operations	
38	Closure, RCBC installation, and shoring innovations substantially reduced impacts to vehicle passage for services and traveling public	Flatiron, Project Team	Innovative	Communication	Stakeholders	Operations
39	No closure delay despite significant delay at Notice To Proceed (advance prep for material procurement and agreements for quick turnaround)	Flatiron	Innovative	Operations	Communication	Stakeholders
40	Swift change to design to accommodate closure schedule and constructability needs	Project Team, Flatiron, USFS	Innovative	Communication	Operations	
41	Wingwall construction and tunnel invert means and methods changes to accommodate unique onsite conditions, remove unknowns, and keep critical path items moving	Flatiron, Project Team, USFS	Innovative	Operations	Stakeholders	
42	Use of 1-sided wall forms on east tunnel; reduced excavation and impacts on steep adjacent slope, and reduced need for specialty forms	Flatiron	Innovative	Operations	Safety	
43	Identify onsite material disposal location to prevent offsite trucking of onsite mineral products from federal lands (and hide the path for disposal)	Flatiron, USFS, Project Team	Innovative	Operations	Stakeholders	Environmental

No.	Innovations/Kudos	Owners	Impact	Category 1	Category 2	Category 3
44	Use of rockfall mesh instead of canopy over tunnel portal for permanent rockfall protection and easier/safer access into tunnel during boring	Drill Tech, Flatiron	Innovative	Operations	Safety	Environmental
45	Traffic control; adapted VMS boards for public info during emergencies; included Town of Lyons, Town of Estes Park, and National Park Service	Circuit Media, TCS, Flatiron, Project Team	Innovative	Safety	Communication	Wildfire
46	Maintained 2-ft of eastbound shoulder asphalt to save costs, time, and materials	Flatiron, Project Team	Beneficial	Operations		
47	Shoring doubled as pre-excavation grouting to reduce duplication of efforts	Drill Tech, Flatiron	Innovative	Operations	Safety	
48	Reduced construction operations footprint minimized the total number of trees removed from federal lands	Flatiron	Beneficial	Operations	Stakeholders	Environmental
49	Lion Gulch Trailhead maintained as open through most of the project to keep public access open and available	Flatiron	Beneficial	Stakeholders	Safety	Environmental
50	Revegetation seed mix vetted with other partners prior to end of construction operations	USFS, Flatiron, Project Team	Beneficial	Stakeholders	Environmental	Communication
51	Historic rock wall damage repaired and rapidly permitted with vetting and cross-agency coordination	Flatiron, Project Team, USFS	Beneficial	Stakeholders	Environmental	
52	Re-use trees and slash for material surface roughening and re-establishment of natural vegetation growth	Flatiron, Project Team, USFS	Beneficial	Stakeholders	Environmental	
53	Avoid import of offsite materials into federal lands; avoids invasive species import and establishment	Flatiron, Project Team, USFS	Beneficial	Stakeholders	Environmental	