

The UTAH Department of Transportation's Expedited Delivery Contracting (EDC)

2013 Annual Report



Submitted to: FHWA, Utah District

In accordance with MOU for Special Experimental Projects No. 14 – Alternative Contracting

Prepared with Oversight from UDOT's Construction Division

January 29, 2013

Contributing UDOT Divisions:

Procurement

Traffic and Safety

Construction

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Introduction

This annual report fulfills the Memorandum of Understanding (MOU) between the Federal Highway Administration (FHWA) and the Utah Department of Transportation (UDOT) dated February 29, 2012 pertaining to the Alternative Contracting Process – SEP 14 Expedited Delivery Contracting.

This report includes an analysis of all projects delivered via the Expedited Delivery Contracting (EDC) program to date. The analysis evaluates the Preconstruction Engineering costs and Construction Engineering costs to prepare and deliver an EDC project, and also time required to procure a contractor. For evaluation purposes, the data is compared to similar type projects that were delivered with traditional design bid build procedures. This section gives an overview of the EDC process as outlined in the MOU. Subsequent sections include a description of the project delivered this year (2013) via EDC, a performance analysis of the process, and finally a summary of the lessons learned after this year's analysis.

Expedited Delivery Contracting Program

The purpose of EDC is to reduce administrative work and speedup project delivery. EDC is suited for small repetitive projects which currently take as much administrative effort to procure a contractor as a large highway project. The EDC program streamlines the design preparation process, and utilizes pre-approved contractors to bid competitively on small projects.

EDC contractors are selected based on qualifications and low bid pricing of selected standard bid items. Being an EDC Contractor entitles the contractors to bid on EDC projects once the designs are prepared and advertised. Bid total is summation of the total cost for the quantities of the standard bid items, the costs of the unscheduled bid items, and the value of the price plus time bidding component currently used by UDOT. EDC projects are awarded to the apparent low bidder.

The MOU requires UDOT to report the following performance measures:

1. Analysis of Change Orders, overruns, and under runs.
2. Bid comparison with the Engineer's Estimate.
3. Track project timeline to include start date, advertisement date, and award dates.
4. Number and scope of project time extensions compared with traditional design bid build projects of similar scope and complexity.

This analysis is included in the *Budget Analysis* and *Change Orders* sections of this report.

Summary of Construction Program

Currently the MOU only allows safety programs to use the EDC process. This section outlines the projects that were delivered during the 2013 season.



Figure 1 Lehi

Project Types

All EDC projects delivered in 2013 via the EDC process were part of the Safe Routes to School (SRTS) program. Utah’s SRTS program uses FHWA funds to construct pedestrian corridors along roadways.

Locations

The SRTS projects included the construction of a continuous walkable path at various locations within Utah County, Salt Lake County, and Tooele County including Lehi, Alpine, South Jordan, Tooele City, and Cottonwood Heights. A short description of each location is given below.

Lehi and Alpine (UDOT Region 3)

The SRTS project in Lehi and Alpine was F-ST99(164). This project provided sidewalks, pedestrian ramps, and pedestrian crossings for Alpine Elementary and Sego Lily Elementary School. The project provide approximately 7000 square feet of sidewalk, curb and gutter, and landscaping required to tie the new facilities into the existing lots.



Figure 2 South Jordan

The Lehi site had one intersection that resulted in an ADA pedestrian access ramp that exceeded standards (see Figure 1). Because the slope approaching the pedestrian ramp was at a natural grade that exceeded the ADA standards, the design team determined that the approach would be sloped back to the existing grade and that an exception would be recorded in the field. However, upon completion the UDOT Region 3 ADA specialist requested that the ramp be removed and sloped back at a more gradual rate. Though it was physically not feasible to meet the ADA requirement on the ramp, the expedited design process of EDC did not allow the UDOT Region 3 ADA specialist an opportunity to provide direction prior to construction. The ramp was changed via a change order to a more gradual rate and the project was completed.



Figure 3 Cottonwood Heights

South Jordan and Tooele (UDOT Region 2)

The SRTS project in South Jordan and Tooele was F-ST99(163). This project provided sidewalks, and pedestrian ramps, for Monte Vista Elementary (South Jordan), and West Elementary,

Tooele High School and Tooele Junior High. The project provide approximately 15,000 square feet of sidewalk, curb and gutter, and landscaping required to tie the new facilities into the existing lots.

Cottonwood Heights

The SRTS project in Cottonwood Heights was F-ST99(209). This project provided sidewalks, pedestrian ramps for Ridgecrest Elementary School. The project provide approximately 4700 square feet of sidewalk, curb and gutter, fencing, and landscaping required to tie the new facilities into the existing lots.

Re-advertisement of EDC Project

One EDC, project F-ST99(208) in Pleasant Grove, Utah, was advertised to the EDC Contractor group but not awarded. Of the three bidders, the apparent low bid was found non-responsive because there was a discrepancy between the bid prices and the Parent Contract bid prices. Of the two remaining bidders, another was found non-responsive due to discrepancies in bid pricing and the final bidder was well above the 10% limit of the engineer's estimate. Because of these issues, F-ST99(208) was repackaged and advertised as a standard Design Bid Build project per the UDOT's defined EDC process. For analysis in this report F-ST99(208) is used to determined Preconstruction engineering costs for EDC (see Table 2), but is not used to determine time savings or change order/overrun comparison (see Table 4).

Contractor Procurement

In the 2012 EDC annual report, the procurement of a new EDC contracting group was recommended. The following changes were incorporated into the new EDC process during 2013:

1. Change the Parent Contract to allow for pricing review prior to contracting for errors and/or allow contract amendments of bid prices if errors are identified. A requested amendment must be independent of a current EDC Project Advertising.
2. EDC Contractors will be given a pre-advertising announcement of the scope and location of the upcoming project so that they can schedule site visits independent of the advertising date.

Budget Analysis

In accordance with the MOU, the project delivered via the EDC Program is compared to historical projects of the similar scope that were delivered with the traditional Design Bid Build (DBB) process. This section addresses the performance of the EDC.

Comparable DBB Projects

Table 1 indicates previous SRTS projects that were delivered using Design-Bid-Build methods. These projects will constitute the baseline for comparison of the EDC Program Performance.

Table 1 Comparable Design Bid Build Safe Route to School Projects

Project No.	PIN	Awarded Bid Amount
SRS-2008(7)	7316	\$164,465.50
SRS-2009(001)	7563	\$67,198.00
SRS-2009(11)	7853	\$87,754.30
SRS-2009(12)	7852	\$172,456.75
SRS-2009(13)	7851	\$257,546.00
SRS-2007(005)	6662	\$1,475,229.50
F-R399(95)	8267	\$133,902.20
SRS-2009(10)	7801	\$501,777.68
F-ST99(98)	8648	\$685,905.10
	Total	\$3,546,235.03
	Mean	\$394,026.11

Savings in Preconstruction and Construction Engineering Services

The EDC Program reduces the effort in Preconstruction Engineering services (PE) by streamlining the review process prior to advertising. Instead of having traditional design review meetings at each design stage, the review process is limited to key personnel and only a kickoff and final design review is required. The project scope is defined by the design team in a design kickoff meeting with the project sponsors. The final design is reviewed internally by the design team, a third party registered professional engineer, and the project sponsor. It is important to note that historically for these small federal projects, the Preconstruction Engineering costs are a significant portion of the budget (47% based on historical projects). Table 2 identifies the anticipated design costs for the EDC project based on the average Preconstruction Engineering and Construction Engineering costs of the historical projects listed in Table 1. Table 2 suggests a 26% savings between the actual costs for PE services and the projected PE costs of the EDC projects. There are no evident savings of the Construction Engineering Services by using the EDC.

Overall savings of engineering services may also be attributed to:

1. Efficiencies in design delivery.
2. Efficiencies of the individual consultant firms.
3. Minimal time required to coordinate projects prior to advertising.

Table 2 Performance of EDC Project Based on Historical Averages

Average SRTS Pre-construction Engineering costs based on historical averages: ^{1,2} 47%							
Pin	Project Number	Status	Bid Price	PE Cost ⁴	Projected Cost ³	Difference	Percent Difference
9917	F-ST99(166)	Completed	\$ 341,362.75	\$ 108,670.00	\$ 160,203.95	\$ 51,533.95	32%
10417 ⁶	F-ST99(163)	Completed	\$ 233,451.50	\$ 140,954.41	\$ 109,560.44	\$ (31,393.97)	-29%
10419 ⁷	F-ST99(164)	Completed	\$ 240,901.05	\$ 94,325.08	\$ 113,056.56	\$ 18,731.48	17%
11039	F-ST99(208)	Advertised*	\$ 361,995.57	\$ 73,332.08	\$ 169,887.07	\$ 96,554.99	57%
11040	F-ST99(209)	Completed	\$ 241,481.10	\$ 74,430.84	\$ 113,328.78	\$ 38,897.94	34%
Total			\$1,419,191.97	\$ 491,712.41	\$ 666,036.80	\$ 174,324.39	26%
Average SRTS Construction Engineering costs based on historical averages: ^{1,2} 35%							
Pin	Project Number	Status	Bid Price	CE Costs (see Note 4)	Projected Cost (see Note 3)	Difference	Percent Difference
9917	F-ST99(166)	Completed	\$ 341,362.75	\$ 100,053.46	\$ 119,440.67	\$ 19,387.21	16%
10417	F-ST99(163)	Completed	\$ 233,451.50	\$ 87,722.81	\$ 81,683.21	\$ (6,039.60)	-7%
10419	F-ST99(164)	Completed	\$ 240,901.05	\$ 102,905.00	\$ 84,289.76	\$ (18,615.24)	-22%
11040	F-ST99(209)	Completed	\$ 241,481.10	\$ 77,874.00	\$ 84,492.71	\$ 6,618.71	8%
Total			\$1,057,196.40	\$ 368,555.27	\$ 369,906.35	\$ 1,351.08	0%

Notes:

- PE and CE services were based on the average percentages of historical SRTS listed in Table 1.
- Percentages of PE and CE costs are calculated from the projects listed in Table 1 based on the individual percentages of billings reported on the ePM 506 report screen (not weighted).
- Projected costs are the costs that would occur if the average cost percentages (historical) were applied to the bid amount of the EDC project.
- Actual prices are the amounts reported from the PE and CE billing logs.
- Project was retracted and re-bid design bid build, bid price shown here is based on DBB price
- PIN 10417 includes design time billed for what later became PIN 11040 (Cottonwood Heights). The 11040 project was separated out because of ongoing ROW negotiations.
- PIN 10419 includes design time billed for what later became PIN 11039 (Pleasant Grove). The 11039 project was separated out because of ongoing ROW negotiations.

Time Savings

A principle key to reducing the time required to deliver a project is to minimize the required time in advertising and procurement processing. Time was reduced through the following efforts:

- Advertising for the initial EDC contractor selection process was held at 21 days, however, because the announcement of project bidding was focused on a small group of qualified bidders, and the number of unscheduled bid items was minimized, the time between plan presentation and bid opening was drastically reduced.
- Once awarded, contractors were under contract to process paperwork and begin construction much earlier.

EDC reduced the time between advertising and the 1st day of work by an average of 29 days (see Figure 4). This includes re-advertising of the 1st EDC project in 2012 (see EDC Annual Report 2012 for timing explanation). The quickest turn around was 31 days which is 41 days faster than historical averages.

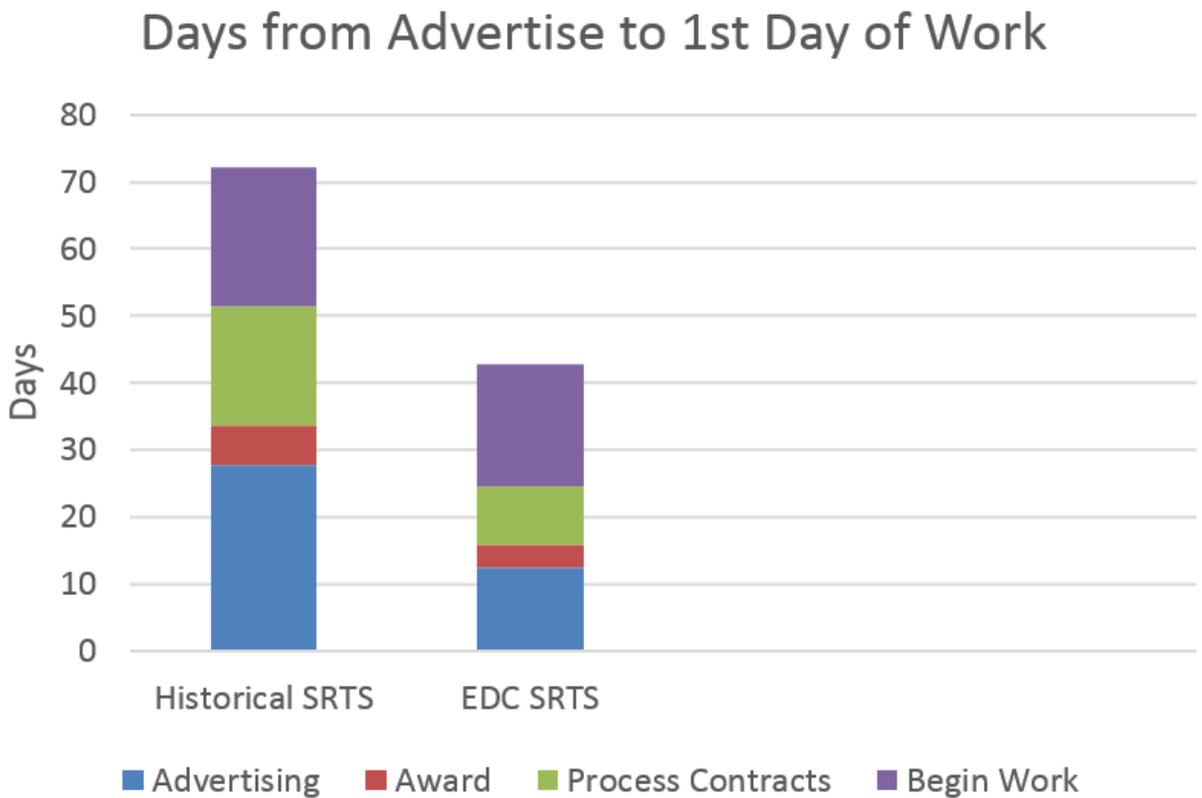


Figure 4 Time to Begin Work

Not all projects listed in Table 1 were included in the analysis presented in Figure 4. Many of the projects in Table 1 were delivered using variable start times or had special permission to reduce the advertising time from the FHWA. EDC affords these luxuries by using the MOU and the SEP-14 process to obtain permission for the entire program.

Engineer’s Estimate vs. Bid

The MOU requires a comparison of the Engineer’s Estimate and the awarded bid prices. This comparison is shown in Table 3. It is important to note that because EDC Contractors are held to their unit pricing of the standard bid items, the Engineer’s Estimate is based primarily on the Parent Contract pricing list and not traditional estimating procedures. Care should be taken when comparing the results of Table 3 and projects delivered via the traditional design bid build process.

Table 3 Bidding Performance of EDC Project

PIN	Bid	EE	Percent Difference from EE
9917	\$ 341,362.75	\$ 376,820.55	-9.4%
10417	\$ 233,451.50	\$ 286,126.95	-18.4%
10419	\$ 240,901.05	\$ 273,176.00	-11.8%
11040	\$ 241,481.10	\$ 255,817.00	-5.6%
EDC Totals	\$ 1,057,196.40	\$ 1,191,940.50	-11.3%
11039 ¹	\$ 261,995.57	\$ 288,261.43	-9.1%

Note 1. Project was retracted and re-bid design bid build, bid price shown here is based on DBB price

Change Orders

Because many of the bid items of an EDC project are based on the standard item prices, the opportunity for unbalance bidding is mostly eliminated. With the reduction of design review and the possibility of contractors overrunning bid items, escalation of change orders may be a risk for the EDC process. This section compares the cost impact due to change orders and overruns with the historical projects.

Table 4 compares project cost increase via change orders and overruns. These values are presented as a percentage of the original contract amounts. Cost impacts to the original EDC contracts are well within the limits of the SRTS projects previously delivered via the Design-Bid-Build process. The EDC process resulted in a slight increase in overruns and a reduction in change orders with an overall cost impact less than the traditional Design Bid Build process. More days were added to the end of the EDC projects via change order. Price + Time (P+T) bidding procedures were not used extensively in the in historical SRTS projects listed in Table 1. P+T results in heavy penalties for overrunning the project time so contractors are more eager to track delays and request additional days via change orders than historical projects.

Table 4 EDC Project Construction Performance Based on Historical Averages

	Bid Amounts	Overrun Amounts ³	Quantity Over/Underruns	Change Order Amounts	Change Orders ³	Total Change to Contract	Days Added to Contract ⁴
Similar Project ¹ Averages ²	\$394,026.11		3.0%		10.8%	13.8%	5
9917	\$341,362.75	\$ 13,409.29	3.9%	\$ 6,511.45	1.9%	5.8%	9
10417	\$233,451.50	\$ 13,925.33	6.0%	\$ 10,694.42	4.6%	10.5%	17
10419	\$240,901.05	\$ 20,619.89	8.6%	\$ 4,996.35	2.1%	10.6%	6
11040	\$241,481.10	\$ (4,429.62)	-1.8%	\$ 24,779.14	10.3%	8.4%	19
total	\$1,057,196.40	\$ 43,524.89	4.1%	\$ 46,981.36	4.4%	8.6%	12.75

Notes:

1. Similar projects include other SRTS projects previously enumerated.
2. Percentages of PE and CE costs are calculated on from the projects mentioned above of based on the individual percentages based on of billings reported on the ePM 506 report screen (not weighted).
3. Values are estimated using the UDOT's change order and overrun/underrun analysis as of 11/14/13 .
4. Days added via the change order process for changes in site conditions.

Lessons Learned

The contractors and the UDOT Region 3 Preconstruction Engineer was interviewed concerning the 2013 EDC project performance. Notes from the interviews conducted are provided in Appendix A.

Table 5 summarizes the lessons learned by UDOT’s Construction Division and contain suggestions for changes to the EDC process.

Table 5 EDC Project Lessons Learned 2013

Issue	Explanation	Recommendation
Region personnel need to be actively engaged in the process.	All EDC projects were local government projects. The EDC process focused more on the sponsoring agencies concerns than the UDOT Region concerns.	Key Region personnel should be invited to both the Kickoff Meeting, and the PS&E review stage.
Change Orders in the field could have been avoided if the Deviation of Standards was done at the Region level.	The EDC process is a deviation from UDOT standards. The Construction Division opted to review the Deviation of Standards because many of the deviations were process related not project related.	Deviation of Standards should be done principally by the Region which will provide the training for Region personnel on the EDC process, and avoid construction issues on site.
Unscheduled bid items carry all of the risk of the project. These items are highly sensitive to change orders.	When unscheduled bid items are change ordered out of the project the contractor cannot recuperate their cost of risk.	No change. Winning the contracts due to low bidding is a risk with all construction projects.

Issue	Explanation	Recommendation
Site conditions Local Government projects are difficult to plan for with EDC.	Issues like public involvement, staging area for construction, and variable allowable work times are more difficult to coordinate on multi-location projects.	Remove P+T requirement from EDC projects. Other issues should be considered when bidding the unscheduled items.
Project pre-bid meetings were not necessary.	These meetings were required because of process description in Parent Contract.	Remove from Parent Contract.
Breaking bid items up in quantity ranges was very helpful.	This allows the contractor to better assess costs of risk due to quantity.	No change to the standard process.
Non-responsive bidding based inconsistencies with Parent Contract and project bid.	Holding bidders non-responsive for minor errors often required UDOT to delay award for significant time.	Inconsistencies in project bids are automatically assigned values from Parent Contract and negotiated with apparent low bidder.
Measurement and Payment descriptions of unscheduled bid items is very important.	Most estimators will not read the entire specification section and simply bid on the M&P descriptions.	Focus design to make sure M&P represents specifications.

Conclusion

With the completion of the EDC projects during 2013 several items were identified in construction that led to better planning in EDC plan preparation. Key lessons learned included the earlier involvement of Region personnel, and the recommendation to remove the Price + Time requirement for small projects. The EDC process resulted in savings of both time and money with no unusual increases to the project from change orders and overruns.

Appendix A –Lessons Learned Meeting Notes

EDC Lessons Learned – UDOT Region 3 Preconstruction Engineer

December 13, 2013

Meeting called by: Dallas Wall, WCEC

Attendees: Craig Hancock, UDOT Preconstruction Engineer, Region 3
Dallas Wall, WCEC

What issues did you observed with the “expedited review process”? What recommendations do you have?

- We need to have the right people at both the Kickoff meeting and the PS&E review. Personnel to include should be District Engineer (and maintenance if it is on State ROW), Arty Johnson (Region Contract Specialist), Preconstruction Engineer, ADA specialist if there are sidewalks.

Did the EDC process result in difficulties within the Region? How would you recommend they be addressed?

- Our biggest problem was understanding the EDC process, what the goals were and why it was used. We were brought on late and there was some confusion as to what we were expected to do. The Program Manager should have been involved.
- We need to have a better description of our (Region’s) roles of the EDC process.

Do you think the deviation of standards process for EDC is appropriate? If not, what would you recommend?

- The UDOT Regions are responsible to deliver projects including the deviation of standards. This responsibility should reside with the Regions. [Currently, the Complex signed the Deviation of Standards because they felt that the process itself had many deviations that would be redundant to each project].
- Things are smoothest when we stick to how we do things. It would be nice if we could treat [EDC] the same way.
- If the projects are Statewide, it should be decided up front which Region is responsible.

EDC Lessons Learned – Consolidated Paving

December 12, 2013

Meeting called by: Dallas Wall, WCEC

Attendees: Jeremiah Falslev, Consolidated Paving
Dallas Wall, WCEC

Selection Process – Review

How does pricing items without seeing plans impact your bidding process? How did your experience change from last year to this year?

- We have experience doing unit price contracts with the US Forest Service. EDC was not a real big impact to our process. The Forest Service negotiates unscheduled bid items. We also are often consulted during design about what materials and processes would be more economical.

Project Bidding

Did you recognize any issues with the process of bidding? If so what?

- I like how the US Forest Service doe contracting (more like a traditional Job Order Contracting). This allows some input on the projects.

What would you recommend any changes to the selection/bidding process?

- Becoming disqualified during the bidding process because of questions between the Parent Contract and the project list is harsh. It would help us when we bid the project if there as an item correlation number to the Parent Contract.

Construction

Did payment of the bid items match your intention when you set your unit prices? If not, what was different and why?

- Yes generally the bid item prices matched our expectations for the scheduled bid items.
- Because the unscheduled bid items carry the risk of the site in them, they are very sensitive to changes during construction. When they were underrun or change ordered out of the project we lost our money that covered the risk for the site (Referring to the Cottonwood Heights project F-ST99(209).

Do you feel that the construction proceeded differently than any other federal aid project?

- Not due to the EDC process.
- There were a lot of stake holders in the project that required longer times to get directions on the changes.

What concerns do you have with the EDC process? And what advice would you give other contractors?

- You have to plan for the risk of projects in how you prepare the pricing of your standard bid items. This planning impacts your decision to bid on projects when they become available.

Do you feel that your standard bid item pricing list adequately cover the risks that you encountered in construction? If not why? What needs to be changed?

- Public Involvement bid items is difficult to assess the pricing. The bid item is based on lots that “touch” the project boundary, but the work defined in the specification is outside those specific lots.
- Traffic Control can become problematic because it can get spread-out on the project and require more equipment than the standard drawings show for the specific closure item.

How did Price + Time impact your project? Would you recommend any changes?

- From a project bidding perspective we did not consider the P+T part of the project. Our costs were the same for our standard projects.
- P + T makes it difficult because it is assessed by calendar day but the different sites might allow work on weekends and at night but other sites might not. Scheduling might become complicated on one site and not on the other.

Other information:

- Early delays at the Cottonwood Heights project (F-ST99(209)) caused us to staff it less. Also this particular location was very narrow so even if more crews were put on the project, there was not room for them to perform.
- Staging was another issue with Cottonwood Heights. This was not accounted for in the EDC standard bid item pricing.
- Project pre-bid meetings were a waste of time.
- Announcing the location of project prior to issuing plans was helpful. More information would have been better. Perhaps a preliminary plan set would have been good. If they are provided too early then they are not looked at until about the week of the bid anyway.
- The problems we had with the pedestrian ramp in Lehi were due to the fact that the Region personnel were not able to review the plan set prior to bidding and they stated as much on site.

EDC Lessons Learned – Lyndon Jones

December 12, 2013

Meeting called by: Dallas Wall, WCEC

Attendees: Paul Ellis, Lyndon Jones Construction
Dallas Wall, WCEC

Selection Process – Review

How does pricing items without seeing plans impact your bidding process? How did your experience change from last year to this year?

The unscheduled bid items allow us to cover any risk that we have if our scheduled bid items are too low for the specific site.

If all risk is tied to the unscheduled bid items, is there a risk of having those items underrun or cancelled during construction?

Risk is always present in all projects especially with the unscheduled bid items. However, it is not a problem that will defer our participation.

Project Bidding

Did you recognize any issues with the process of bidding? If so what?

- **We have the maintenance contract for UDOT so we know how to assess risk on contracts that are based on unit rates. We like EDC better because the standard bid items are broken down into different quantity categories. This allows us to limit the risk and provide better prices.**
- **When preparing estimates of bid items, you must consider how extremely low quantities can drive prices up (i.e. 1 ton of HMA to patch in around pedestrian Ramps).**
- **Buy America is an issue for fencing, and fire hydrants because those manufacturers have not fallen in line with the expectations of the FHWA.**

What would you recommend any changes to the selection/bidding process?

- **No real changes. The advance notice of the project site was not very helpful to the process. The project mandatory pre-bid meetings were mostly a waste of time. Focusing on the narrow time frame to prepare your bids is a manner if you're interested to participate or not.**
- **Perhaps providing a "preliminary" plan set to define the scope of the project would be more helpful for bid preparation. A preliminary sent must have a GOOD MEASUREMENT AND PAYMENT DESCRIPTIONS of the unscheduled bid items.**
- **One issue we had with the project in South Jordan was the fact that the "restore landscaping" bid item had parts of "install new sprinkler system". This bid item because very sensitive because the city became very critical of their expectations on the condition of sod but they were unwilling to turn the water on to get the new sod established. This fell to us. We did not feel that the bid item description effectively clarified our responsibility when we bid it.**

Construction

Did payment of the bid items match your intention when you set your unit prices? If not, what was different and why?

- **All scheduled items were clear and we had no problem with them.**
- **Unscheduled bid times (i.e. the restore landscaping bid item) can cause undue problems because partnering was impacted and made a good project very difficult.**

Do you feel that the construction proceeded differently than any other federal aid project?

The escalation process was not followed by the team pertaining to the “restore landscaping” bid item which impacted the partnering relationship.

What concerns do you have with the EDC process? And what advice would you give other contractors?

No major concerns, every job has issues that is why partnering is so important.

Do you feel that your standard bid item pricing list adequately cover the risks that you encountered in construction? If not why? What needs to be changed?

- **Yes, we felt our prices were accurate. We have experience doing this type of work for the State so we know what pricing needs to consider.**
- **Unscheduled items – sod and restore landscaping and irrigation was an issue.**

How did Price + Time impact your project? Would you recommend any changes?

- **South Jordan site had a lot of costs associated with time. We could not re-coup the time we had with the irrigation issues and we felt that the liquidated damages were not an appropriate reflection of our work.**
- **Price + Time is not advantageous to use on these small EDC projects, especially if there are time constraints on the work day due to interaction with pedestrians.**

Other information:

NOTE: The main concern from Lyndon Jones was the issue that surrounded the “restore landscape” issue addressed via change order in the project. The project was advertised with an unscheduled bid items “restore landscape”. The actual work required the contractor to install additional sod rather than restore existing sprinkler systems. Work was added via change order. However, the contractor did not feel that the escalation process was adequately implemented which resulted in difficulties in the partnering process. Once the change order was implemented, the contractor installed additional sprinkler systems and sod but the city (owner of the property) was unwilling to water the sod sufficiently get it established. This required the contractor to replace the sod three times. This problem illustrates that extreme sensitivity of unscheduled bid items in the EDC process.