



Date: July 28, 2015
To: Water Utility Board
From: Al Larson, PE, BCEE
Re: **Report on Bid Results and Recommendation**
Project: **Paterson Street Rebuild**

Background

Over the past two plus years the Paterson Street Operation Center design has been developed into a highly functional facility that will serve the needs of the Utility for decades to come. A dedicated staff project team was involved to refine and improve the design to meet work process needs and City of Madison requirements. The design concept was approved by the Water Board prior to moving to final design. Based on the information gathered during design development, the information was incorporated into drawings and specifications suitable for bidding. The design worked its way through the Urban Design Commission and the Plan Commission and gained approval this spring. Construction is scheduled to start in September 2015 and be complete by December 1, 2016. The work on the vehicle storage building will be completed in 2017.

Development of this project started in 2004/2005 and has been delayed the past 10 years due to financial concerns. The improvements are long overdue and this facility has been identified as one of the highest priorities in the City of Madison. Employee working conditions, air quality, safety, and efficiency are all in need of a significant upgrade.

Bid Results

Three bids were received and opened by the City of Madison Public Works Department on July 10th, 2015 as follows:

RECONSTRUCTION OF THE MADISON WATER UTILITY OPERATIONS CENTER
110 S. PATERSON STREET
 CONTRACT NO. 7529
 DATE: 7/10/15
 PREQUALIFICATION: 425

CONTRACTORS	TOTAL BID	ALT #1	PREQUAL STATUS
Engineering Estimate	\$8,000,000.00		

Joe Daniels Construction Co., Inc.	\$9,230,280.00	\$344,900.00	OK
Miron Construction Co., Inc.	\$9,554,551.00	\$578,174.00	OK
McKee Associates, Inc.	\$9,856,420.00	\$0.00	OK

The three bids received are within 6.8% and are considered to be valid representations of the actual cost of the work as defined by the project drawings and specifications.

Bid Analysis

Following the bid opening, Mead and Hunt contacted all of the bidders and requested additional information and a breakdown of their bids for analysis. Joe Daniels Construction and McKee Associates agreed to provide additional information. Miron did not respond to our request for additional information. Generally speaking the overruns were described as follows:

- 1. Masonry > \$500,000 over our estimate
- 2. Roofing > \$260,000 over our estimate
- 3. Contaminated soils > \$600,000 over our estimate
- 4. Electrical > \$160,000 over our estimate
- 5. Plumbing Approximately \$110,000 below our estimate

Mead and Hunt summarized these findings in the attached minutes of a meeting of the project team held on Thursday July 16, 2015.

A summary of possible actions is included as Attachment 1.

Alternatives/Cost Cutting Measures

A project team meeting was held at the Paterson Street Operation Center on July 16, 2015 to evaluate alternatives and cost cutting measures. Items discussed at this meeting are summarized in Attachments 1 and 2 and in the meeting minutes.

18 different alternatives were considered as a part of the analysis. Many of the alternatives do not provide a significant cost savings or do not meet project objectives or standard of quality or durability. These smaller items will not be considered further.

Several alternatives consider deferring work, phasing options, or delaying installation. Delaying the work to a later date will increase cost due to mobilization and escalation/inflation factors. Continuing to use aging work spaces will reduce work efficiency and increase building maintenance costs. Working to fit in pieces of the work later will always be more costly to accomplish and will therefore drive total project cost higher.

It also needs to be noted that reducing cost through elimination of work via change order to a construction contract is a negotiation that we are at a significant disadvantage. It is estimated that we get 50 cents to the dollar in return. This means that any potential savings will be reduced during the change order process.

Conclusions and Recommendations

The project as designed and bid is intended to meet the current and projected needs of the Utility for decades to come. The planned facility provides much needed improvements to fleet maintenance, welding shop, well maintenance, locker rooms, lunch room, office space, meeting space, and storage areas. Employee working conditions, air quality, and safety will be brought up to current standards and codes. The project also provides a community accessible meeting space that can be used by the neighborhood for meetings and other gatherings.

The project estimate was based on the best available information but until a project is bid under competitive conditions, the actual project cost is not known. A local surging construction industry, over 56 million dollars of permitted construction within the last 3 months, and limited resources is driving costs higher. It is our opinion that the cost of the project that will meet our needs is effectively \$9.6 million dollars. Cutting the scope of the project will not meet the long term needs of the Utility. Phasing or delaying the project will most likely result in higher prices as construction prices continue to climb in the current economy.

Based on all the information gathered through bidding and the post bid evaluation it is our recommendation that the project be awarded to the low bidder, Joe Daniels Construction.

**Attachment 1
Paterson Street Operation Center Bid Analysis and Alternative Evaluation
July 16, 2015**

Alt	Description	Actions Required	Advantages	Disadvantages	Risks/Rewards
1	Award bid to lowest responsible bidder.	<ul style="list-style-type: none"> • Water Board Approval • 	<ul style="list-style-type: none"> • Price of the project is a known. No surprises • Holmes Tire Lease for temporary mechanic location • Avoid any further escalation of the cost due to inflation • Project has been approved by the appropriate City Agencies 	<ul style="list-style-type: none"> • 14% over estimated cost 	<ul style="list-style-type: none"> • Minimal risk • Project will be completed on schedule • Many items on track to allow the project to proceed. i.e. Holmes Tire, temporary office space procurement
2	Redesign portions of the project to reduce costs and rebid the project.	<ul style="list-style-type: none"> • Possibly UDC and Plan Commission review • Rebidding through the Board of Public Works 	<ul style="list-style-type: none"> • May reduce cost • 	<ul style="list-style-type: none"> • May increase cost due to inflation • Additional reviews by City agencies • Loss of 6 to 8 months • Potential loss of Holmes Tire for temporary fleet maintenance space • Potential loss of quality of materials and design • Additional design costs to develop documents for bidding 	<ul style="list-style-type: none"> • Cost could increase as much as 8% due to inflation • Cost could be reduced - unknown • Revisions may not be acceptable to UDC • Loss of functionality • Potential loss of durability and longevity • Could impact operational functionality during construction
3	Divide the project into phases	<ul style="list-style-type: none"> • Rebidding of the project through the Board of Public Works • Develop a phasing plan that will work with the existing operations through construction • Possible review by UDC and Plan Commission 	<ul style="list-style-type: none"> • Initial reduction of costs due to a smaller scope of work • 	<ul style="list-style-type: none"> • Overall costs will probably increase due to multiple projects and inflation • Additional reviews by City agencies • Extended schedule • Additional design costs to develop two bid packages • Additional costs to administer two construction contracts 	<ul style="list-style-type: none"> • Cost will increase • Operations will be impacted • Longer schedule equals more disruption of Utility operations • Risk of long delays between phases

Attachment 1
Paterson Street Operation Center Bid Analysis and Alternative Evaluation
July 16, 2015

Alt	Description	Actions Required	Advantages	Disadvantages	Risks/Rewards
4	Major redesign or reconfiguration of the project	<ul style="list-style-type: none"> • Rebidding of the project through the Board of Public Works • Develop a revised project scope to reduce cost • Additional review by UDC and Plan Commission 	<ul style="list-style-type: none"> • Lower Costs • 	<ul style="list-style-type: none"> • Lost functionality • Inability to meet City requirements and gain approval of revised plan • Extended schedule • Loss of the use of Holmes Tire • Significant increase in design costs 	<ul style="list-style-type: none"> • Lost functionality will not benefit the Utility • Longer schedule will disrupt Utility operations for an extended period • May not be feasible due to approval constraints through the City process

Attachment 2
Paterson Street Operation Center Brainstorming
July 16, 2015

Alt	Idea Description	Actions Required	Advantages	Disadvantages	Risks/Rewards
1	Revise the storm water treatment system to minimize the excavation and disposal of contaminated soils	<ul style="list-style-type: none"> • Research and design of a new storm water management system • Gain approval from City Engineering for alternate design • Preliminary discussions with City Engineering have not been promising 	<ul style="list-style-type: none"> • Reduce the excavation required thereby reducing costs • Lessen the impact on the contaminated soils on the site 	<ul style="list-style-type: none"> • May not be able to gain approval • 	<ul style="list-style-type: none"> • Alternative system may not meet City standards • Storm system is in need of upgrading so savings could be minimal • Alternatives to the storm water vault, green roof or buried plastic pipe may not be cheaper
2	Madison Water Utility crews do the excavation for the storm system	<ul style="list-style-type: none"> • Take the excavation out of the project by change order • Complete the excavation on the Contractor's schedule 	<ul style="list-style-type: none"> • Will shift work from the contractor to the Utility • Potential to lower cost • 	<ul style="list-style-type: none"> • Utility is taking on liability • Utility may not be able to meet Contractor schedule • May not reduce cost 	<ul style="list-style-type: none"> • Risk associated with work is significant • Schedule impacts could be costly • Utility may not have the equipment needed to effectively proceed with this work in a timely manner
3	Reduce the masonry component in the project in light of the fact masonry cost has risen sharply	<ul style="list-style-type: none"> • Redesign of the building • Development of a new building envelop • Potential for review and approval requirements • Rebid of the project 	<ul style="list-style-type: none"> • Lower cost • 	<ul style="list-style-type: none"> • Reduced durability and functionality • Significant redesign costs • Lost time – delayed schedule 	<ul style="list-style-type: none"> • May not be able to find a suitable revision • Lost time could displace any savings gained
4	Reduce the masonry tuck pointing repair	<ul style="list-style-type: none"> • Remove tuck pointing from the contract • 	<ul style="list-style-type: none"> • Reduce initial Cost • 	<ul style="list-style-type: none"> • Delayed maintenance – It will have to be done sooner or later • Future work typically results in higher cost 	<ul style="list-style-type: none"> • Deferred maintenance usually increases costs at a later date •
5	Eliminate the remodel of the old building	<ul style="list-style-type: none"> • Remove the remodel from the project • Revise the functionality of the remodeled space 	<ul style="list-style-type: none"> • Potential for lowering initial cost 	<ul style="list-style-type: none"> • Lost functionality • Lost work space • Phasing of needed work 	<ul style="list-style-type: none"> • Phasing the remodel and delaying the work typically will increase overall cost • Will impact the functionality of the space and lower efficiency

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Alt	Idea Description	Actions Required	Advantages	Disadvantages	Risks/Rewards
6	Keep the roof on the existing building	<ul style="list-style-type: none"> Remove the new roof on the existing section of building from the contract 	<ul style="list-style-type: none"> Reduced initial costs 	<ul style="list-style-type: none"> Delaying work that may impact building integrity Much more difficult to do the work later 	<ul style="list-style-type: none"> Phasing will increase cost Will require repair or replacement work in the future
7	Keep the existing 1920's era freight elevator	<ul style="list-style-type: none"> Remove new freight elevator from the contract 	<ul style="list-style-type: none"> Reduced initial costs 	<ul style="list-style-type: none"> Delaying replacement may impact elevator functionality and operational efficiency Replacing at a later date may be much more expensive and disruptive to operations 	<ul style="list-style-type: none"> Replacing the elevator later will increase cost Risk of breakdown is increased
8	Total rebuild and relocation of the operations center and vehicle storage building	<ul style="list-style-type: none"> Start over Find a suitable location of adequate size Acquire property MGE property would be preferable 	<ul style="list-style-type: none"> More efficient layout of work space may improve functionality Minimal impact on current operations during construction 	<ul style="list-style-type: none"> Overall higher cost Phasing would be required May need to move off the Isthmus if MGE not willing to sell Additional design costs Loss of all prior work product 	<ul style="list-style-type: none"> This was looked at earlier and found to be difficult or maybe unfeasible May take more political capital than available Lost design effort and additional design fees would be significant
9	Eliminate the green roof	<ul style="list-style-type: none"> Gain approval from UDC and Plan Commission for no green roof 	<ul style="list-style-type: none"> Reduced cost 	<ul style="list-style-type: none"> May be impossible to achieve approval 	<ul style="list-style-type: none"> Very high likelihood that this will not be approvable
10	Eliminate the Generator	<ul style="list-style-type: none"> Remove from contract documents by change order 	<ul style="list-style-type: none"> Reduced cost 	<ul style="list-style-type: none"> Lost functionality during a power outage Just deferred cost that would be added at a later date Future addition of a generator would increase cost 	<ul style="list-style-type: none"> Operational efficiency and reliability could be compromised Loss of system functionality
11	Purchase and set up the AV and camera equipment	<ul style="list-style-type: none"> Remove from contract documents by change order 	<ul style="list-style-type: none"> Reduced cost 	<ul style="list-style-type: none"> Work will have to be coordinated with contractor's electrician Could result in increased cost due to lack of competition 	<ul style="list-style-type: none"> Risk of loss of coordination of work May have to retrofit some items if not properly scheduled

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Alt	Idea Description	Actions Required	Advantages	Disadvantages	Risks/Rewards
12	Eliminate the concrete base on the site fence	<ul style="list-style-type: none"> Remove from contract documents by change order 	<ul style="list-style-type: none"> Reduced cost 	<ul style="list-style-type: none"> Exposes the bottom of the site fence to damage from vehicle traffic and snow plowing Will be an ongoing maintenance problem 	<ul style="list-style-type: none"> Risk of repeated damage to the fence could be costly
13	Self perform the paint shop demo	<ul style="list-style-type: none"> Remove from contract documents by change order 	<ul style="list-style-type: none"> Will shift work from the contractor to the Utility Potential to lower cost 	<ul style="list-style-type: none"> Utility is taking on liability Utility may not be able to meet Contractor schedule May not reduce cost 	<ul style="list-style-type: none"> Risk associated with work could be significant Schedule impacts could be costly Utility may not have the equipment needed to effectively proceed with this work
14	Eliminate all work in the existing basement	<ul style="list-style-type: none"> Remove from contract documents by change order 	<ul style="list-style-type: none"> Reduced cost 	<ul style="list-style-type: none"> This is deferred work that will need to be accomplished at a later date Issues with mold and insulation will not be mitigated 	<ul style="list-style-type: none"> Cost will go up with future work Conditions will render the space less and less valuable over time
15	Delay purchase of the bridge crane in the well maintenance bay	<ul style="list-style-type: none"> Remove from contract documents by change order 	<ul style="list-style-type: none"> Reduced cost 	<ul style="list-style-type: none"> Reduces the ability to move pumps, motors, shaft and column around the shop Reduces working efficiency and worker safety 	<ul style="list-style-type: none"> Increases risk to employees of injury Results in more work having to be farmed out
16	Delay purchase of the smaller vehicle lift	<ul style="list-style-type: none"> Remove from contract documents by change order 	<ul style="list-style-type: none"> Reduced cost 	<ul style="list-style-type: none"> This is a deferred cost Reduces the efficiency of working on multiple vehicles at the same time 	<ul style="list-style-type: none"> Cost will increase with future procurement and installation Reduced vehicle shop efficiency
17	Delay purchase of the jib crane in the welding bay	<ul style="list-style-type: none"> Remove from contract documents by change order 	<ul style="list-style-type: none"> Reduced cost 	<ul style="list-style-type: none"> This is a deferred cost Reduces the efficiency of the welding shop. Moving materials around will be less efficient 	<ul style="list-style-type: none"> Cost will increase with future procurement and installation Increased risk of employee injury Reduced work effectiveness

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Alt	Idea Description	Actions Required	Advantages	Disadvantages	Risks/Rewards
18	Eliminate the demo of the acid room and expansion of the well maintenance area	<ul style="list-style-type: none"> Remove from contract documents by change order 	<ul style="list-style-type: none"> Reduced cost 	<ul style="list-style-type: none"> This is deferred cost Space is falling apart due to years of acid storage becoming less useful with passing of time Significantly reduces the size and layout of the well maintenance shop therefore impacting efficiency 	<ul style="list-style-type: none"> Cost will increase with future demolition and construction Reduced well shop efficiency Reduced space availability Overall reduced work effectiveness



**Madison Water Utility
Paterson Street Ops Center
Meeting Minutes**

Project name: Paterson Street Ops Center

Client: Madison Water Utility

Project location: Madison, Wisconsin

Mead & Hunt, Inc. Manager: Laurie Goscha

Mead & Hunt Project Number: 3235300-131021.03

Mead & Hunt, Inc. phone: 608-273-6380

Date: 7/16/15

Attendees: See attached sign-in sheet.

The attached report represents this writer's interpretation of items discussed during the meeting. Any corrections or additional information should be brought to our attention for clarification.

Items discussed were as follows:

1. Al summarized the bid results of the project and the concerns of being overbid and schedule complications.
2. Mead & Hunt reviewed their discussions with the bidders and the cost estimator:
 - A. The three bids received were within 6% of each other, indicating the documents were clearly understood and uniformly interpreted. There were two primary reasons for the bids exceeding the A/E estimate: current market and the soils conditions not being fully understood by the estimator.
 - B. The current market condition in the Madison is leading to a less competitive environment. Contractors are busy and are not going after projects as aggressively as they have in past years. This is seen in Madison reporting \$56 million in project permits in the last 3 months, other recent bid overruns in the area, and receiving bids from only 3 contractors for this project. This lack of competition has been shown to increase bid prices by as much as 10% when there are only 3 bidders on a project.
 - C. Mead & Hunt received helpful information from the low bidder, Joe Daniels, and the high bidder, McKee. Miron Construction did not return our phone calls.
 - D. The major overruns were:
 - 1) Masonry and Tuckpointing (including pre-cast panels and waterproofing) was 2x our estimate with an overrun of \$522,000. This is likely due to lack of masons and labor rates.
 - 2) The roofing price was escalated along with the addition of the Green Roof, which

was not included at the time of the estimate. Mead & Hunt has another bid result in the last month that similarly showed an extreme bid-estimate variation on the roofing. Daniels also shared that the other bid they received was \$880,000 (double of the accepted sub-contractor). This overrun was \$286,000.

- 3) The contaminated soils quantities and cost were underestimated. This overrun was in the range of \$633,000.
 - 4) Electrical/Technology/Security pricing is somewhat high at \$161,000. Electricians are in shortage, and copper/fiber prices are running high. However, this overrun balances with low plumbing and HVAC numbers.
3. The project bids represent the market value of the work. Mead & Hunt stated that they had reviewed the project following the bid and found nothing that could be removed that wasn't directly required by one of the many stakeholders in the project. To reduce the cost of the work to fit within the budget, significant scope needs to be removed from the project.
 4. The Water Utility's next steps are to determine whether to recommend the project to the Public Works Commission (meeting 7/22), Water Board (meeting 7/28), and the Common Council (meeting 8/4). The ultimate final decision needs to be determined by the Common Council meeting. However, to start the process and stay on schedule they need to make the decision today to recommend it to the Public Works Commission.
 5. Laurie wondered if there were other city sources or agencies that could provide funding to assist with the contaminated soils as a brownfield cleanup. Al was not aware of any other options for funding the project.
 6. Options and advantages/disadvantages to recommend are:
 - A. Proceed with awarding the bid to the lowest responsible bidder.
 - 1) May require budget amendment.
 - 2) The cost of the construction is known.
 - 3) Holmes Tire is already set up and ready to happen.
 - 4) Materials and bids will never be any cheaper.
 - B. Award the bid and proceed with change orders that redesign/cut minor scope items that can be purchased later.
 - 1) See the value engineering list of ideas below.
 - 2) Change orders never see the full value of the credits to the Owner. Potential savings listed below could be as little as 50% of the noted price.

- 3) Decreased durability and performance of the building due to cuts.
- 4) Added cost for A/E redesign services.

C. Redesign/cut minor scope items that can be purchased later and Rebid.

- 1) See the value engineering list of ideas below.
- 2) The minor items that can be cut will cost more to be bid in the future due to escalation and small job factors.
- 3) Decreased durability and performance of the building due to cuts.
- 4) Project schedule will move to next year, impacting operations and other scheduled projects.
- 5) Added cost for A/E redesign services.

D. Phase the project.

- 1) The entire existing building could be removed from the project at this time, and completed at another time as "phase 2".
- 2) Postponing the work will increase the cost due to escalation, small job costs, and added temporary measures.
- 3) Decreased functional performance for operations due to removal of well shop improvements and paint booth.
- 4) Added cost for A/E redesign services.

E. Major Redesign.

- 1) Option 1: Go back to the 2005 design, with a smaller addition and only remodel the existing building. With a reduced footprint and limited remodeling, the project cost could be reduced, however, functional performance would drop as the welding shop and maintenance bays would be reduced in size and improvements to the well shop would not be performed.
- 2) Option 2: Build an entirely new, combined project with the Ops Center, Vehicle Storage, and Material Storage all on one site on the back corner of the MG&E property. This option would increase the initial cost as the building would be much larger, however, it would decrease overall building costs by combining the buildings into one, reaping savings on common items and economy of scale.
- 3) Either redesign effort option pushes the entire project into next year. As such, escalation will be a factor in bidding and operations will be impacted along with

other scheduled projects.

4) Added cost for A/E redesign services.

7. Value Engineering List of Ideas (Viable and Not Viable):

- A. Are there other stormwater management solutions that may be less desirable than the current design, but limit excavation of the hazardous soils? Mead & Hunt will provide their analysis on whether or not any other options exist. Potential cost savings: unknown.
- B. Can the Water Utility do the excavation or hauling of the hazardous soils themselves? This is contractually questionable, and takes on a lot of risk. Potential cost savings: unknown.
- C. Would pre-cast, tilt-up walls provide any savings in lieu of CMU back-up? May also require a Façade Redesign to make it work with the system for any real savings to be realized. This would also break the current schedule. Potential cost savings: unknown.
- D. Eliminate the re-roofing of the existing building, although currently in poor condition. Potential cost savings: \$86,000.
- E. Eliminate the replacement of the Freight Elevator, although currently in poor condition. Potential cost savings: \$250,000.
- F. Eliminate the back-up generator and purchase in the future. Potential cost savings: \$40,000.
- G. Eliminate the concrete fence base. Potential cost savings: \$13,000.
- H. MWU supplies their own Monitors, High Performance Cameras, and IT switches. Potential cost savings: \$50,000.
- I. MWU demolishes the Paint Shop on their own with soils removal. Potential cost savings \$20,000.
- J. Eliminate the tuckpointing of the existing building, although in poor condition. Potential cost savings: \$12,000.
- K. Eliminate the repairs and remodeling work in the basement, although in poor condition. Potential cost savings: \$15,000.
- L. Reduce the quantity of FRP doors. Potential cost savings: up to \$10,000.

8. After review of the proposed value engineering items, it was determined that all listed items would decrease the durability and operations for the facility. Additionally deferred items would cost more to individually contract in the future. The meeting participants agreed to recommend acceptance of the bid to the Public Works Commission and will work on the discussion points for a presentation to the Water Board for final determination.

Respectfully submitted,

MEAD & HUNT, Inc.

Stacey Z. Keller, AIA, NCARB