



## City Council Agenda Memo

Crest Hill, IL

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<b>Meeting Date:</b>	December 12, 2022
<b>Submitter:</b>	Mark Siefert, Director of Public Works
<b>Department:</b>	Public Works
<b>Agenda Item:</b>	West Plant Change Order Discussion

**Summary:** The purpose of this memo is to educate and seek guidance from the City Council as Strand Associates, Inc (Strand) and City staff work cooperatively with Vissering Construction to identify components of the West Sewage Treatment Plant (STP) Improvements project to be removed to reduce overall project costs while minimizing the impacts on the quality of the upgraded facility. Specifically, we have identified a significant number of potential cuts, one of which includes removing a mechanically cleaned screen. While the cost to remove a screen from the project will result in large savings, City staff and Strand believe the value of having a second screen in the project outweighs the potential savings.

As a reminder to all, the City received three bids for the West STP Improvements project. The low bidder was Vissering Construction Company out of Streator, Illinois with a lump sum bid of \$51,770,000. Unfortunately, Vissering's bid was higher than anticipated for a variety of reasons, most notably, the current inflationary conditions in the economy.

Since the bid opening, Strand and City staff have worked diligently to identify potential project savings. To date, the following changes have been implemented as part of awarding the project to Vissering Construction:

Deductive Bid Alternative No. 1 was selected.

Multiple alternative manufacturers were selected.

The total savings associated with the changes above totaled \$1,130,000. As a result, the project was awarded to Vissering Construction for \$50,640,000.

In addition to the changes above, City staff and Strand worked together to identify several more reductions in project scope to further reduce the overall project costs as discussed above. The original list of project cuts, which was provided to Vissering, can be found in the Table 1 below. The dollar value identified for each project cut represents the original credit offered by Vissering.

<b>Scope Reduction Item</b>	<b>Credit Offered</b>
Sand Filter Media Removal	\$77,000
Sludge Removal	\$270,500
E70 Bridge Crane Removal	\$4,700
Screen Removal	\$278,345
Office Furniture	\$100,000
Replace Glass Lined Ductile Iron Pipe (DIP) with Standard DIP	\$8,000
Change Buried DIP to Polyvinyl Chloride (PVC) Pipe	\$110,000
Structure 16 Aluminum Covers to Grating	\$6,899
Structure A10 Aluminum Covers to Grating	\$8,020
Remove Samplers	\$35,503
Aeration Tank Elevated Walkways	\$9,329
Remove Downstream Filter Valves	\$39,500
Remove Filter Bypass Piping	\$50,000
Reduce Final Clarifier Slab Thickness	\$40,940
Reduce Amount of Sidewalk	\$21,680
Modify Functionality of Process Return Pumping Station	\$25,300
Offsite Storage	\$10,000
Replace Elevator with Lift	\$56,000
Easing Testing Requirements	\$0
Modify Effluent Pipe Material	\$140,000
Primary Clarifier Elevated Walkway Removal	\$10,941
South Digester Elevated Walkway	\$19,075
Blower Building Bathroom	\$2,700
Biosolids Building Surface Material	\$0
Change Some Slide/Sluice Gates to Stop Plates	\$9,800
Remove Interior Lights in Biosolids Storage	\$4,600
Eliminate Warranty Bond	\$7,500
Minimize Site Piping Demo	\$27,500
<b>Total Value of Credits Provided</b>	<b>\$1,373,832</b>

Table 1

There are several items where the credit offered did not match City staff and Strand's expectations. These items are highlighted in red in Table 1. As a result, City staff and Strand met with Vissering on November 22, 2022, to discuss the list of scope items to be removed from the project and the credits being offered. It became clear that there were several items on the list which were misinterpreted by Vissering. As a result, the credit associated with several items will increase as detailed in Table 2 below. Table 2 below also includes additional scope reduction items that have been identified since the meeting along with their estimated value.

Scope Reduction Item	Credit Offered	Anticipated Revised Credit
Sand Filter Media Removal	\$77,000	\$77,000
Sludge Removal	\$270,500	\$270,500
E70 Bridge Crane Removal	\$4,700	\$24,000
Screen Removal	\$278,345	\$300,000
Office Furniture	\$100,000	\$100,000
Replace Glass Lined Ductile Iron Pipe (DIP) with Standard DIP	\$8,000	\$15,000
Change Buried DIP to Polyvinyl Chloride (PVC) Pipe	\$110,000	\$110,000
Structure 16 Aluminum Covers to Grating	\$6,899	\$20,000
Structure A10 Aluminum Covers to Grating	\$8,020	\$25,000
Remove Samplers	\$35,503	\$35,503
Aeration Tank Elevated Walkways	\$9,329	\$50,000
Remove Downstream Filter Valves	\$39,500	\$39,500
Remove Filter Bypass Piping	\$50,000	\$50,000
Reduce Final Clarifier Slab Thickness	\$40,940	\$40,940
Reduce Amount of Sidewalk	\$21,680	\$21,680
Modify Functionality of Process Return Pumping Station	\$25,300	\$80,000
Offsite Storage	\$10,000	\$10,000
Replace Elevator with Lift	\$56,000	\$85,000
Easing Testing Requirements	\$0	\$0
Modify Effluent Pipe Material	\$140,000	\$140,000
Primary Clarifier Elevated Walkway Removal	\$10,941	\$15,000
South Digester Elevated Walkway	\$19,075	\$28,000
Blower Building Bathroom	\$2,700	\$15,000
Biosolids Building Surface Material	\$0	\$0
Change Some Slide/Sluice Gates to Stop Plates	\$9,800	\$0
Remove Interior Lights in Biosolids Storage	\$4,600	\$18,000
Eliminate Warranty Bond	\$7,500	\$7,500
Minimize Site Piping Demo	\$27,500	\$27,500
<b>Newly Identified Items</b>		
Masonry Material Modifications		\$30,000
Building E70 Wall Material Change		\$25,000
Sluice Gate Material Change		\$30,000
Removal of Gates		\$30,000
Removal of Filter Auto-covers		\$18,471
Use of City's internet service		\$5,000
<b>Total Value of Credits Provided</b>	<b>\$1,373,832</b>	<b>\$1,743,594</b>

Table 2

City staff and Strand have evaluated the list of scope items, as well as the value of the credits agreed upon and expected. City staff's intention is to draft a change order to finalize the list of scope reduction items summarized in Table 3 below. This table summarizes the selected changes.

<b>Scope Reduction Item</b>	<b>Anticipated Credit</b>	<b>Revised</b>
Sand Filter Media Removal	\$77,000	
Sludge Removal	\$270,500	
E70 Bridge Crane Removal	\$24,000	
Office Furniture	\$100,000	
Replace Glass Lined Ductile Iron Pipe (DIP) with Standard DIP	\$15,000	
Change Buried DIP to Polyvinyl Chloride (PVC) Pipe	\$110,000	
Structure 16 Aluminum Covers to Grating	\$20,000	
Structure A10 Aluminum Covers to Grating	\$25,000	
Remove Samplers	\$35,503	
Aeration Tank Elevated Walkways	\$50,000	
Remove Downstream Filter Valves	\$39,500	
Remove Filter Bypass Piping	\$50,000	
Reduce Final Clarifier Slab Thickness	\$40,940	
Reduce Amount of Sidewalk	\$21,680	
Modify Functionality of Process Return Pumping Station	\$80,000	
Replace Elevator with Lift	\$85,000	
Modify Effluent Pipe Material	\$140,000	
Primary Clarifier Elevated Walkway Removal	\$15,000	
South Digester Elevated Walkway	\$28,000	
Blower Building Bathroom	\$15,000	
Remove Interior Lights in Biosolids Storage	\$18,000	
Minimize Site Piping Demo	\$27,500	
Masonry Material Modifications	\$30,000	
Building E70 Wall Material Change	\$25,000	
Sluice Gate Material Change	\$30,000	
Removal of Gates	\$30,000	
Removal of Filter Auto-covers	\$18,471	
Use of City's internet service	\$5,000	
<b>Total Value of Credits Provided</b>	<b>\$1,426,094</b>	

Table 3

It should be noted, the final Change Order will be presented to the City Council for approval at a later date when it has been finalized.

In general, the scope reduction items removed from the final list (Table 3) were items where City staff and Strand believe the value of the credit does not match the impact of the project. The largest scope reduction item removed from the list is the aforementioned mechanically cleaned screen. There are several reasons why City staff and Strand believe the mechanically cleaned screen should remain in the project. Specifically:

1. The cost to install a second screen in the future will be larger than the value of the credit being offered as well as the totalized additional principal and interest payments associated with leaving it in the project. Installing a second screen in the future would be more costly for multiple reasons:

a. There is lost economy of scale when installing a single piece of equipment as a stand-alone project. Specifically, there are certain costs associated with any project, regardless of size, such as contractor mobilization costs, insurance costs, bond costs, etc. As a result, the cost to install a single screen as a standalone project would be around \$325,000 in today's dollars.

b. The rate of inflation is significantly higher than the interest rate on the City's current loan. As a result, a standalone project that would be \$325,000 today, would be approximately \$415,000 in five years assuming an annual inflation rate of 5%.

Removing a screen from the project will have long term implications on the facility. Firstly, if the remaining screen were ever to break, the screen would have to be bypassed. A bypass screen will be provided, however, the effectiveness of the removal of screenings will be reduced. With a bypass screen, staff would also have to staff the plant 24/7 until a new screen or repair would be able to be procured. As a result, it could result in damage to downstream pumping and treatment equipment. Additionally, if only one screen were to be installed, it would have to run all the time. Having a second screen would allow them each to run half the time, potentially increasing the life of each screen.

We appreciate your consideration and would be happy to answer any questions you might have.

**Recommended Council Action:** Recommend that staff move forward and bring a final change order to council for approval for a deduct that does not include deducting the mechanically cleaned screen

**Financial Impact:** N/A

**Funding Source:**

**Budgeted Amount:**

**Cost:**

**Attachments:** None