

FOR BOARD ACTION

Agenda Item # 4

Meeting Date:

9/25/12

SUBJECT: 4th St SE Reservoir Replacement (Board Update and Additional Public Input)

PREPARED BY: Doug Rovang, Senior Civil Engineer

ITEM DESCRIPTION:

Staff informed the Utility Board at its August 28th meeting that the Mayo Facilities Committee had communicated to RPU its intention to maintain the parcel adjacent to Saint Marys Park for future development plans. Mayo, however, had offered the possibility of leasing an area in the northwest corner of the "Fullerton" site for a water tower.

The Board directed staff to eliminate the Saint Marys Alternative D3 from further consideration, and then continued discussion of an appropriate site for the 4th St SE Reservoir replacement. The Board requested staff to continue searching for other potential sites in addition to those listed below.

- 1) Alternative A - 2.0 mil gal reservoir at 4th St SE site (with enhancements)
- 2) Alternative A2 - 2.0 mil gal reservoir at 4th St SE site (without enhancements)
- 3) Alternative B - 2.0 mil gal Hydropillar (water tower) at 4th St SE site
- 4) Alternative E2 - 2.0 mil gal Hydropillar at Mayo Fullerton site SE
- 5) Alternative SLP - 2.0 mil gal Hydropillar at Silver Lake Plant Site

It was also suggested that staff evaluate an undeveloped commercial site on the north side of Civic Center Drive NW in the 8th Ave area (which staff is calling Alternative F). As part of the Board's request to continue evaluating alternative sites, the engineering consultant proposed re-looking at the existing 1.5 mil gal Saint Marys site. The site was previously rejected due to operational concerns. Alternative details (staff is calling this Alternative G) will be provided at the meeting.

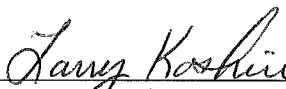
- 6) Alternative F - 2.0 mil gal reservoir at the Leitzen site NW
- 7) Alternative G - 3.5 mil gal reservoir at the existing 1.5 mil gal Reservoir Site SW

As directed by the Board at its August meeting, staff and the engineering consultant will provide a detailed evaluation of the seven reservoir replacement alternatives. Staff will also again review the various reservoir replacement sites evaluated and rejected.

An opportunity for additional public input related to the 4th St SE Reservoir replacement will also be provided at this meeting.

UTILITY BOARD ACTION REQUESTED:

This is a continuation of informational presentations from RPU staff and the engineering consultant related to the proposed 4th St SE Reservoir replacement project. No formal Board action is anticipated. Staff anticipates the Board will select a recommended site for the 4th St SE Reservoir replacement at its October meeting.


General Manager


Date

ROCHESTER PUBLIC UTILITIES MAIN LEVEL SERVICE AREA

ALTERNATE G

3.5 MILLION GALLON RESERVOIR CONSTRUCTED ON EXISTING 1.5 MILLION GALLON RESERVOIR SITE

The construction of a 3.5 million gallon (MG) concrete ground storage reservoir on the existing 1.5 MG reservoir site at 10th Avenue SW and 4th Street SW would require staged construction. The construction of a larger reservoir on this site also requires that the Rochester Public Utilities (RPU) staff operate the Main Level Service Area without a water storage facility at this location for approximate ten weeks.

The ground storage reservoir would be constructed with a floor elevation of 1110 feet, with overflow elevation of 1176 feet and have a dome cover which would add approximately 10 additional feet of height to the ground storage reservoir.

Peak water use generally ends on the Labor Day weekend and the removal of the existing 1.5 MG steel reservoir and the construction of the new 3.5 MG reservoir would start during the first week of September. The new reservoir would be required to be completed and in service by end of November.

The staged construction for the new reservoir on the existing site requires that the reservoir contractor be allowed to utilize the roadway area of 10th Avenue SW, adjacent to Saint Mary's Park for wall panel construction for approximately the eight week period prior to the removal of the existing 1.5 MG steel reservoir from service. In order to erect wall panels, apply wire wrap, apply shotcrete and architectural treatment to the reservoir walls, the reservoir contractor will require a temporary construction easement around the reservoir to complete these activities.

As the leased land area for the existing reservoir site is limited, similar construction requirements will be required when Rochester Public Utilities replaces the existing 1.5 MG reservoir in the future. The construction requirements for replacement of the existing reservoir with a 1.5 MG reservoir will require nearly the same amount of time as replacement of the existing reservoir with a 3.5 MG reservoir. Replacement of the existing 1.5 MG reservoir in the future will also require that the RPU staff operate the Main Level Service Area without a reservoir at the site.

From our discussion with the Rochester Public Utility (RPU) staff, the Main Level Service Area could be operated without the Saint Mary's Park reservoir in service for limited periods of time. This allows the reservoir to be taken out of service for maintenance in the future and also allows construction of a new reservoir to be constructed without an interior wall. Elimination of the interior wall will reduce the construction time and the reservoir cost.

The preliminary cost estimate for Alternative G is as follows:

| | | |
|---|---|----------------|
| 3.5 MG concrete reservoir | = | \$2,150,000 |
| Onsite watermains and control valves | = | 65,000 |
| 760 feet of 16" watermain | = | 260,000 |
| Architect treatment | = | 121,000 |
| Demolition of existing 1.5 MG reservoir | = | 80,000 |
| Demolition of existing 580,000 gallon reservoir | = | 132,400 |
| Onsite enhancements | = | <u>40,000</u> |
| Preliminary Construction Estimate | = | \$2,848,400 |
| Engineering and Contingency | = | <u>569,700</u> |
| Preliminary Cost Estimate | = | \$3,418,100 |

**MAIN LEVEL SERVICE AREA
3.5 MILLION GALLON ALTERNATIVES**

| Storage Facility | Location | Estimated Construction Cost | Estimated Annual Operation & Maintenance | Alternatives | Construction Cost Above Alternative G | Annual Operation Maintenance Cost Above Alternative G |
|--|--|-----------------------------|--|--------------|---------------------------------------|---|
| Single Storage Facility | | | | | | |
| 3.5 M.G. Reservoir | 1.5 MG Site Leased Land | \$3,418,100 | \$10,000 | G | | |
| Two Storage Facilities | | | | | | |
| 2.0 M.G. Reservoir w/o Enhancements | 4 th Street Reservoir Site | \$3,070,100 | \$30,000 | A2 | | |
| Replace 1.5 M.G. Reservoir | Saint Mary's Park | \$1,735,200 | \$10,000 | Future | | |
| Estimated Total Cost | | \$4,805,300 | \$40,000 | | \$1,387,200 | \$30,000 |
| 2.0 M.G. Reservoir with Enhancements | | | | | | |
| 2.0 M.G. Reservoir with Enhancements | 4 th Street Reservoir Site | \$3,302,900 | \$40,000 | A | | |
| Replace 1.5 M.G. Reservoir | Saint Mary's Park | \$1,735,200 | \$10,000 | Future | | |
| Estimated Total Cost | | \$5,038,100 | \$50,000 | | \$1,620,000 | \$40,000 |
| 2.0 M.G. Elevated | | | | | | |
| 2.0 M.G. Elevated Replace 1.5 M.G. Reservoir | Fullerton Site Saint Mary's Park | \$4,509,000 \$1,735,200 | \$90,000 \$10,000 | E Future | | |
| Estimated Total Cost | | \$6,244,200 | \$100,000 | | \$2,826,100 | \$90,000 |

| Storage Facility | Location | Estimated Construction Cost | Estimated Annual Operation & Maintenance | Alternatives | Construction Cost Above Alternative G | Annual Operation Maintenance Cost Above Alternative G |
|----------------------------|-----------------------------|-----------------------------|--|--------------|---------------------------------------|---|
| 2.0 M.G. Elevated | Silver Lake Plant | \$4,387,700 | \$90,000 | SLP | | |
| Replace 1.5 M.G. Reservoir | Saint Mary's Park | \$1,735,200 | \$10,000 | Future | | |
| | Estimated Total Cost | \$6,122,900 | \$100,000 | | \$2,704,800 | \$90,000 |
| 2.0 M.G. Elevated | Fullerton Site | \$4,034,100 | \$90,000 | E2 | | |
| Replace 1.5 M.G. Reservoir | Saint Mary's Park | \$1,735,200 | \$10,000 | Future | | |
| | Estimated Total Cost | \$5,769,300 | \$100,000 | | \$2,351,200 | \$90,000 |
| 2.0 M.G. Elevated | Leitzen Site | \$4,385,100 | \$90,000 | F | | |
| Replace 1.5 M.G. Reservoir | Saint Mary's Park | \$1,735,200 | \$10,000 | Future | | |
| | Estimated Total Cost | \$6,120,300 | \$100,000 | | \$2,702,200 | \$90,000 |

2012 Costs

**Summary of Preliminary Costs
Evaluation of 4th Street Reservoir Replacement Alternatives
For Rochester Public Utilities**

| Project Components | Alternate A 4 th St SE Site | Alternate A2 4 th St SE Site | Alternate B 4 th St SE Site | Alternate SLP Silverlake Plant | Alternate E2 Fullerton Site | Alternate F Leitzen Site | Alternate G Existing 1.5 MG Reservoir Site |
|--|---|--|---|-----------------------------------|--------------------------------|-----------------------------|--|
| 2.0 MG Concrete Reservoir | \$1,880,000 | \$1,880,000 | - | - | - | - | - |
| 2.0 MG Hydropillar | - | - | \$3,234,000 | \$3,234,000 | \$3,117,000 | \$3,171,000 | - |
| 3.5 MG Concrete Reservoir | - | - | - | - | - | - | \$2,150,000 |
| Onsite Watermains/Control Valves | \$ 180,000 | \$ 190,000 | \$ 180,000 | \$ 120,000 | \$ 65,000 | \$ 65,000 | \$ 65,000 |
| Onsite Enhancements | \$ 260,000 | \$ 30,000 | \$ 60,000 | - | - | - | \$ 40,000 |
| Watermains – Distribution | - | - | - | \$ 232,000 | \$ 104,300 | \$ 347,800 | \$ 260,000 |
| Demolition Old Reservoir | \$ 132,400 | \$ 132,400 | \$ 132,400 | \$ 132,400 | \$ 132,400 | \$ 132,400 | \$ 132,400 |
| Demolition of 1.5 MG Reservoir | - | - | - | - | - | - | \$ 80,000 |
| Booster Station | \$ 280,000 | \$ 280,000 | - | - | - | - | - |
| Well Pump Rehab | \$ 20,000 | \$ 20,000 | - | - | - | - | - |
| Architectural Treatments | - | \$ 106,000 | - | - | - | - | \$ 121,000 |
| Preliminary Construction Estimate | \$2,752,400 | \$2,558,400 | \$3,606,400 | \$3,718,400 | \$3,418,700 | \$3,716,200 | \$2,848,400 |
| Engineering and Contingency | \$ 550,500 | \$ 511,700 | \$ 649,100 | \$ 669,300 | \$ 615,400 | \$ 668,900 | \$ 569,700 |
| Preliminary Cost Estimate | \$3,302,900 | \$3,070,100 | \$4,255,500 | \$4,387,700 | \$4,034,100 | \$4,385,100 | \$3,418,100 |