



**City of Rochester Hills
AGENDA SUMMARY
FINANCIAL ITEMS**

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Legislative File No: 2009-0419

TO: Mayor and City Council Members

FROM: Roger Rousse, Director, Department of Public Services

DATE: January 28, 2010

SUBJECT: Water Storage Reservoirs, Engineering Services
City File No. E09-052B

REQUEST:

To adopt the recommendation of The Water & Sewer Technical Review Committee and move forward with the design for two, 3 million gallon water storage facilities. Based on the recommendation, the Department of Public Services recommends awarding a contract to Tetra Tech, Inc. of Detroit, Michigan to complete Engineering Services pertaining to design, bidding and construction administration for water storage reservoirs in the amount not-to-exceed \$508,985.00 and authorizes the Mayor to execute a contract on behalf of the City.

BACKGROUND:

The concept of constructing water storage facilities has been under consideration for nearly two decades. The identification of water storage as a means to address escalating user rates and system pressure deficiencies follows a number of events including:

- 1991, ISO, a provider of underwriting, rating and statistical information to the insurance industry, completes a Public Protection Classification study for Rochester Hills. The study identifies five (5) areas within the City that were deficient in the desired hydrant fire flow volumes and pressures.
- The City experienced drought conditions in 2000 which increased the system demand resulting in numerous low pressure complaints from customers located in the NW sections of the City.
- The 2002 BIOTERRORISM ACT mandates a review of utility operations and the establishment of emergency procedures for public water systems.
- 2002, ARCADIS Engineering completes a water system analysis. The purpose of the analysis is to identify flow deficiencies and methods to level out peak demands. The recommendation includes the construction of two (2) water storage reservoirs.
- A multiple day power failure in August of 2003 drains the City's water system, questioning emergency situation capabilities and fire fighting capacities.
- 2003, ARCADIS completes a second, more detailed water system analysis to confirm storage facility locations and the expected pay-back period. The report indicates a pay back period of approximately 8 years.
- 2003, DWSD establishes A Technical Advisory Committee (TAC) for the development of a Model Contract governing the water purchase rate methodology for customers. The committee is made up of representatives from DWSD and suburban municipalities. This cooperative arrangement leads to the adoption of a system wide standardized purchase methodology that includes: distance, elevation, max day and peak hour purchase rates.
- In November of 2005 the City Council approves and then rescinds the selling of bonds to cover construction costs for the new DPS Facility and for the construction of Water Reservoirs. At that time,

the City's contract and billing methodology with the Detroit Water & Sewerage Department (DWSD) had expired and the stipulations of the new contract were unknown.

- 2008, DWSD recommends that municipalities consider water storage as an option for reducing water purchase rates.
- 2008, The City of Rochester Hills establishes voluntary watering restrictions limiting automatic irrigation system operation from 12:00 am. to 5:00 am.
- In May of 2009 The City of Rochester Hills, following 8 months of negotiations, adopts a 30-year contract with DWSD. The contract includes provisions for water storage.
- In December of 2009, Tetra Tech completes a feasibility study intended to review the concept of buying water during off-peak periods, at reduced rates, and then releasing the water into the City's system during peak periods thus reducing the cost of purchased water from DWSD. The report indicates the potential for reducing water purchase rates from DWSD by 38%.
- January 2010. A presentation to City Council on the feasibility of constructing water storage facilities includes 5 employees from DWSD. The DWSD Director confirms that communities with water storage have lower water purchase rates.
- January 2010. The Water and Sewer Rate Technical Review Committee recommend that City Council move forward with the design of water storage facilities.

ADDED BENEFITS OF WATER STORAGE

1. Improved ISO ratings due to improved system capabilities and operational improvements. The current Rochester Hills ISO rating is 5 on a 1 to 10 scale with 1 being the highest rating. Preliminary indications predict that water storage alone could improve the rating by one half point. Other system improvements that have occurred since 1991 include the installation of a SCADA (system control and data acquisition) computerized utility monitoring system, a prolonged period of hydrant maintenance records, fire hose testing, employee training and certification, compliance with the 2002 BIOTERRORISM ACT. An improved ISO rating reflects positively on insurance rates for homes and business.
2. Improved fire fighting capacity. As part of the PPC program, ISO conducts evaluations of water supply for fire suppression. This section constitutes 40% of the available PPC score for communities.
3. Improved system reliability. Areas of the City that have historically experienced low or insufficient water pressure will be improved to a level recommended by the TEN STATES STANDARD for water systems including a hydraulic grade line designed to provide a minimum of 35 psi continuously.
4. Reduced water purchase rates. The Tetra Tech Feasibility Study concluded that the City of Rochester Hills could become a MAX DAY customer to DWSD thereby creating the potential to reduce water purchase rates by up to 38%. Four (4) of the eighty five (85) DWSD customers are currently MAX DAY customers.

The Tetra Tech report included conservative estimates of cost savings on water purchased from DWSD, cost to construct the structure, any system improvements/upgrades needed to support water retention/storage, annual maintenance costs related to the storage structure(s), a project time line and any other items that were needed to make a sound decision related to the use of a water storage structure(s).

The completed study recommends that two (2) three million gallon reservoirs be constructed. The estimated cost for the construction on the two (2) storage tanks including all associated pipe and pumping stations is approximately \$11,050,000.00. This construction figure does not include interest costs (\$6,038,000) associated with borrowing money to pay for the reservoir construction and engineering costs (\$508,985). Based on current information and estimates on interest rate amounts, an accurate total project cost for the reservoirs including design and debt service is approximately \$17,538,000.00 with a payback estimated to be between 6 to 11 years depending on the amount of actual cost savings. This does not include an annual operation and maintenance (O&M) cost of \$66,577 as estimated in Tetra Tech's Feasibility Report. The O&M costs will increase approximately 1-3% annually.

During our negotiations with DWSD, our consultant Hubbell Roth & Clark (HRC) performed a preliminary analysis determining costs associated with the addition of water reservoirs to our system for potential impacts on DWSD rates. The analysis indicated that the construction cost alone for the reservoirs would be approximately \$16,500,000.00. The lower estimate proposed in Tetra Tech's feasibility study is based on recommendations from manufacturers and a more complete analysis of our system.

As part of this project, a project plan will first be submitted on May 1, 2010 to the Drinking Water Revolving Fund (DWRF) for potential funding approvals. The first federal stimulus program included funding projects on the DWRF project plan priority list. A second federal stimulus bill called the Jobs for Main Street Act 2010 is proposed and was approved by the House of Representatives on December 16, 2009 (HR2847). If this bill clears the Senate and retains additional funding for the DWRF, Rochester Hills may be in a position to have the water reservoirs design "shovel-ready" and could qualify for some forgiveness in the principal. Also, the City has been contacted by three local communities expressing interest in possibly connecting to our system to obtain water. Another bonus may be the possibility of reducing our resident's insurance rates due to the addition of water reservoirs to our system that will increase fire flow capabilities. Lastly, water storage will provide the benefits of emergency reserves, less reliance on the DWSD incoming pressure, and give Rochester Hills the ability to control future fixed rate water purchase increases to a minimum.

The Rochester Hills Fire Department has reported difficulties with water pressure and fire flow along Arlington. As a result, the Oakland County Fire Chiefs Association has developed a tanker task force team to assist in emergency situations. With the addition of the water reservoirs, improved water pressures and increased fire flow capabilities, the need for the special task force will be eliminated.

The City of Rochester Hills will begin negotiating new water rates with the DWSD again this fall. All efforts will be put forth to achieve the best possible rate from DWSD with the understanding that the addition of water reservoirs will be a new starting point to base water purchase savings on and one of the determining factors for payback on the reservoirs.

If City Council decides to move forward with the construction of the water reservoirs, future approvals are required. City Council will need to approve the following items:

- A bond sale to cover costs for the construction of water reservoirs.
- The construction contract.
- Land acquisition, if necessary.
- Annual water rate increases.

Planning Commission will be required to approve a site plan per the Zoning Ordinance. Also, City Council may consider forming a committee/group to review the locations and applicable design criteria.

CONCLUSIONS

In conclusion, water reservoirs are warranted based on the following information:

- DWSD supports the addition of water reservoirs and decreased water rates are apparent in communities that are already maintaining storage facilities.
- Tetra Tech has had discussions with DWSD regarding the addition of water reservoirs in our system and it appears to be supported by DWSD staff. This was also apparent through comments made by representatives of DWSD at the January 11, 2010 City Council Meeting.
- The construction of reservoirs should eliminate peak hour and make Rochester Hills a max day customer, thus reducing our water rates.

- Savings is also based on the assumption that the City purchases their projected volume of water. In 2009, the City did not purchase their allotted amount of water, as a lot of communities did not, for the following reasons: weak economy, fairly wet summer, customer conservation and actual cost of water.
- A conservative estimate would be a 30% reduction in rates (DWSD charges the City), resulting in an estimated \$2,100,000 savings annually. An optimistic estimate would be a 38% reduction in rates (DWSD charges the City), resulting in an estimated savings of \$4,100,000 annually.
- The proposed water reservoirs have a strong potential to offer long-term benefits to the City and our customers.

PROCESS:

Vendor Name and Address:

Tetra Tech, Inc.
 65 Cadillac Square, Suite 3400
 Detroit, MI 48226

Reason for Selection:

Quality Based Selection

Method of Purchase:

Blanket, Purchase Order, Contract

BUDGET:

If approved by City Council, a 2nd Quarter Budget Amendment will be prepared to provide funding for engineering services for the Water Reservoir project. Funding will initially be drawn from Water & Sewer Capital Fund Retained Earnings.

Preliminary Engineering costs have been incorporated into the total amount of the proposed bond issuance for this project. All costs related to this project, including engineering services, are reimbursable from bond proceeds provided a bond resolution is adopted by City Council *prior* to actual cost being incurred. Upon receipt of the proposed bond proceeds, all related reservoir costs, incurred after the adoption of the bond resolution, shall be reimbursable.

Fund Name	Department Account No	Account No. Description	Budget Amount	Cost	Remaining Budget
W&S Capital	593.972000	Main & Services	\$0.00	\$508,985.00	(\$508,985.00)

RECOMMENDATION:

The Department of Public Services recommends awarding a contract to Tetra Tech, Inc. of Detroit, Michigan to complete Engineering Services pertaining to design, bidding and construction administration for water reservoirs in the amount not-to-exceed \$508,985.00 and authorizes the Mayor to execute a contract on behalf of the City.