

**SULTAN CITY COUNCIL
AGENDA ITEM COVER SHEET**

ITEM NO: A - 1

DATE: July 8, 2010

SUBJECT: Water Treatment Plant Optimization Goals
Resolution 10-12

CONTACT PERSON: Connie Dunn, Public Works Director 

ISSUE:

The issue before the City Council is to authorize the Mayor to sign Resolution 10-12 (ATTACHMENT A), establishing goals to improve the performance of water treatment plant.

STAFF RECOMMENDATION:

Approve Resolution 10-11 and authorize the Mayor to establish goals for water treatment plant optimization as adopted by the Washington State Department of Health (DOH) for all rapid rate surface water treatment plants in the state.

SUMMARY:

Crazy Mountain Services, LLC (Joe Steiner) and South Hills Consulting, LLP (Dan Fraser) were at the Sultan Water Treatment Plant (WTP) on March 17-19, 2010 conducting a comprehensive performance evaluation of Sultan's plant. The evaluation and report were completed at no cost to the city through a DOH program.

June 10, 2010, staff presented the Performance Evaluation Report of Sultan's Water Treatment Plant to the subcommittee. In the report there are several items that the consulting firms mention the city could accomplish by including funds in future budgets, doing operational change and plant modifications.

The Treatment Optimization Program (TOP) (Attachment B) is an effort to improve the performance of surface water treatment facilities in the state. TOP focuses on particle removal and disinfection to maximize public health protection from microbial contaminants.

Washington Department of Health has adopted performance goals for all rapid rate surface treatment plants in the state. Sultan Water Department would like to recognize these goals adopting them by Resolution 10-12.

DISCUSSION:

The City of Sultan owns, operates and maintains a municipal owned water treatment facility with rapid rate filters providing water to the citizens of Sultan from Lake 16, a Surface Water Source. Optimization is not a mandatory program at this time but it does provide budgeting tools to provide the highest standards of drinking water to the City of Sultan consumers.

For the 2010 Budget, staff recommends to make low to no cost adjustments within current budget restraints, as follows:

- Recommend to City Council to adopt Washington Department of Health’s treatment optimization program goals for the Sultan Water Treatment Plant.
- Contact DOH for technical assistance from their staff of experts.
- Jar testing completed by the operators, the city owns the testing equipment.
- Using the computer and adjust the reservoir levels before the plant is called to start.
- Maintain consistency with turbidity numbers being reported.
- Add filter media to the one filter that was identified to be low on media.

FISCAL IMPACT:

With the adoption of Resolution 10-12 there is no direct costs. This opens the door for the city to budget in future years by setting goals to perform at a higher level in the water treatment plant. The operators maintain the water performance at a high level and this would only help the city to reach higher treatment performance.

Suggested future budget:

OPTIMIZATION RECOMMENDATIONS	\$	YEAR OF IMPLEMENTATION	NOTES
A-1 Administration Policies – Adopt clear objective and measureable goals to ensure WTP Optimization	Staff Time	2010	Council approving a Resolution
A-2 Design: Filter to Waste – Engineer WTP design correction to minimize shear forces which cause turbidity spikes. *Suggestion from staff was a Speed Control Valve on Plant Effluent Valve to Clear Wells.	Engineering \$20,000 Material \$100.00	2011	To slow water flow surge after back wash to control flow going to clear wells
A-3 Technical Guidance – Outside Technical Assistance with training, possibly from DOH	Staff Time For Training	Cost are included in the Annual Budget	Starting August 2010 DOH with other Sno.Co. Surface Water Treatment Plants will be having onsite training in Sultan & other plants.

A-4 Application of Water Treatment Concepts – Jar testing, additional turbidity meters, **smaller chemical feed pumps, balance water production with water use, maintain consistency in reporting to DOH	\$3,000 for smaller chemical feed pumps	Undetermined	Improves finished water quality, efficiency of plant operations
B-1 Minor Design Problems – Continuous turbidity monitoring of Clarifier, record all turbidity meter readings, **over sized chemical feed pumps, filter media size	\$20,000	2011 2012	To monitor turbidity after each unit through the plant
	\$30,000	2010 2011 2012	Collect samples in filters of the Anthracite Sand, & research if changing the sand out is necessary.
B-2 Number of Staff – Staffing may be inadequate to achieved and maintain optimization, the report recommends part time but could use part time is distribution system	\$45,000 Water Fund	2012	Need to adequately staff the Water Department to provide quality service to the public

RECOMMENDED ACTION:

Approve and authorize the Mayor to sign Resolution 10-12 establishing optimization performance goals for the City of Sultan Water Treatment Plant.

ATTACHMENTS:

- A Resolution 10-12
- B Treatment Optimization Program

COUNCIL ACTION:

**CITY OF SULTAN
RESOLUTION 10-12**

A RESOLUTION PROVIDING WATER TREATMENT PLANT OPTIMIZED PERFORMANCE GOALS IN AN EFFORT TO IMPROVE THE PERFORMANCE OF SURFACE WATER TREATMENT FACILITIES IN THE CITY OF SULTAN TO PROTECT PUBLIC HEALTH.

WHEREAS, the City of Sultan has adopted the Washington Department of Health Treatment Optimization Program; and

WHEREAS, in an effort to improve the performance of the City of Sultan surface water treatment facilities the treatment optimization program focuses on particle removal and disinfection to maximize public health protection from microbial contaminants; and.

WHEREAS, the City will obtain optimization through filtration; and

WHEREAS, the City will obtain optimization through sedimentation; and

WHEREAS, the City will obtain optimization through disinfection; and

WHEREAS, the City will obtain optimization through turbidity monitoring;

NOW THEREFORE, it is resolved by the City Council of the City of Sultan, Washington as follows:

1. The City Council will budget for the City of Sultan Water Treatment Plant equipment, and related training to accomplish and maintain the optimization goals as set forth in attachment A.
2. The Water Department Staff will be accountable for implementing the optimization goals adopted by the Council in attachment A.

PASSED by the City Council this 8th day of July, 2010

City of Sultan

Carolyn Eslick, Mayor

ATTEST:

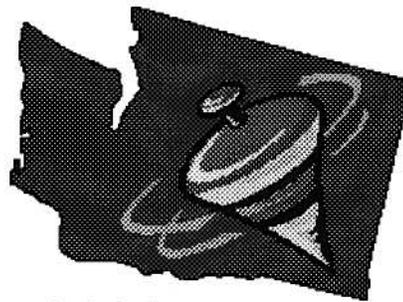
Laura J. Koenig, City Clerk

ATTACHMENT A

Treatment Optimization Program

The Washington Treatment Optimization Program (TOP) is an effort to improve the performance of surface water treatment facilities. TOP focuses on particle removal and disinfection to maximize public health protection from microbial contaminants.

The Washington Department of Health has adopted performance goals for all rapid rate surface water treatment plants in the state.



Optimized Performance

Filtration

- Filtered water turbidity is less than 0.1 NTU 95 percent of the time, based upon maximum daily values recorded (systems without filter-to-waste may exclude 15 minutes after filter backwash).
- Filtered water is below 0.1 NTU within 15 minutes of filter being in production.
- Maximum filtered water turbidity is 0.3 NTU.
- Filters are backwashed before breakthrough.
- Raw water turbidity changes do not affect filtered water turbidity.

Sedimentation

- Settled water turbidity is ≤ 2 NTU 95 percent of the time when annual average source turbidity > 10 NTU.
- Settled water turbidity is ≤ 1 NTU 95 percent of the time when annual average source turbidity ≤ 10 NTU.

Disinfection

- Required CT values are achieved at all times.

Turbidity Monitoring

- Raw water turbidity is monitored at least every 4 hours.
- Effluent turbidity is continuously recorded for each filter.
- Combined filter effluent turbidity is continuously recorded.

For more information about TOP, please contact Stephen Baker at 360-236-3138 or stephen.baker@doh.wa.gov



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