

What are reservoirs?

- Reservoirs are man-made structures where water is stored and then drawn from during peak demand periods.

Saskatoon's reservoirs:

There are three reservoirs in the city of Saskatoon:

- 42nd Street reservoir
- Avenue H reservoir, and
- Acadia reservoir.

Why are the reservoirs being expanded?

- Although all three reservoirs have adequate storage capacity to provide first reserve and emergency storage for their respective service zones, only the Acadia reservoir has adequate storage to provide the required equalization storage capacity needed to meet peak hour demand in excess of production capabilities.

Why does the Avenue H Reservoir need to be expanded?

- During the day, the demand for water by Saskatoon residents can change on an hourly basis. According to industry best practices, water treatment plants should be designed so they can operate at a steady production rate. This helps ensure that peak water demands during the day can be easily met and makes it more efficient to pump water from reservoirs (storage facilities) during rapidly changing peak demand hours.
- However, in order to reduce the intensity of peak hour water demands, adequate reservoir storage is required. It has been determined that there is currently not enough reservoir storage capacity to meet the peak hour demands for water in the summer by Saskatoon residents. Because of this insufficient storage, production at the water treatment plant is currently ramped up and down during the day to meet the shortfall created by peak hour demands throughout the day.
- Expanding our water storage capacity (reservoirs) is the most cost effective way to meet the needs of citizens. The City is expanding both the Avenue H and the 42nd Street reservoirs so they can store more water. The expansion of both reservoirs will also provide the additional capacity needed to meet the projected water demand based on Saskatoon's estimated 2016 population, and allow the City to maintain high water quality standards.
- The Avenue H reservoir currently holds about 19 million litres of water and will be expanded to hold another 19.5 million litres for a total of 38.5 million litres. The 42nd Street reservoir currently holds about 36 million litres of water and will be expanded to hold another 20 million litres for a total of 56 million litres of water. By comparison, the new competitive 50m swimming pool at the Shaw Centre holds 4.2 million litres of water.

What is the cost of the Avenue H expansion and where is the project at?

- In addition to expanding the Avenue H reservoir, the City of Saskatoon will also build two new facilities that will be located next to the existing reservoir – an ultraviolet (UV) disinfection facility and a high lift pump station. The total cost for the entire Avenue H reservoir expansion and the UV disinfection facility project is currently estimated at \$35 million. The new facilities will be built along the property line on Avenue H, Avenue I and 11th Street.

- The Government of Canada and Province of Saskatchewan have contributed a total of \$7million dollars of funding for the Avenue H project. The remaining costs are funded by the City of Saskatoon. All City costs are paid by the utility rates.
- The design and engineering phase of the Avenue H project was tendered through a Request For Proposals (RFP) in 2010 and is currently about 95% complete. The construction tender should be released in fall 2011. The City expects to award the construction contract in January 2012. The estimated start date for construction is spring 2012 and the projected completion date is March 2014.

What is the cost of the 42nd Street reservoir expansion and where is the project at?

- The 42nd Street reservoir expansion project involves the expansion of the reservoir and the construction of a new pumping house. The technical Terms of References for this project are being prepared now by the City and will be sent to consulting firms in fall 2011 to provide proposals for engineering services. It is anticipated the selected firm will begin the design phase in late fall 2011. The construction stage is planned to start in spring 2012. At this time the estimated total cost of the 42nd Street reservoir expansion and pump house is approximately \$22 million.
- The Government of Canada and Province of Saskatchewan have contributed another \$7million dollars of funding for the 42nd Street project. The remaining costs are funded by the City of Saskatoon. All City costs are paid by the utility rates.

Will residents in neighbourhoods surrounding the projects be affected?

- For the Avenue H Reservoir expansion project, residents of the neighbourhoods of Holiday Park, King George and parts of Riversdale will be impacted most during the construction of the new reservoir and building by road closures. The intersection at Avenue H and 11th Street will be closed for an extended period, possibly from the spring of 2012 until approximately March 2014. During this time, traffic will be diverted until construction is complete.
- There will likely be traffic disruptions due to the 42nd Street project, but the details of those are not yet known. Public service announcements to the media, flyers to residents and businesses in the affected neighbourhoods, and the City's website and social media tools will be used to inform individuals of road restrictions and project updates.

What will the Avenue H reservoir expansion and new building look like?

- The current round reservoir structure will remain as it is. The expansion to the reservoir will be constructed in an underground tank approximately 5m below the ground, and will take up the space where the existing parking lot is.
- The new building to house the UV disinfection system and new high lift pumping station will be constructed on top of the new reservoir, covering the east half of the space. The building will be approximately 4 storeys high. The new building's exterior will look similar to the exteriors of the existing water treatment plant buildings.

The City removed houses from a section of 11th Street to make way for a previous project? Will that vacant lot be used?

- Yes, the lot is needed for the construction staging area. This will give the contractor space to store materials and equipment and also to work around the construction site.

Will any trees be affected as a result of the construction?

- Yes, some trees on 11th Street and Avenue H will likely have to be removed due to the construction process. Where possible, new trees will be planted to replace trees that were removed, and the new building will be fully landscaped with new grass, shrubs and trees.

Will the Meewasin Valley Trail be affected by the construction?

- The sidewalk on Avenue H between 11th Street and 12th Street will be closed. The MVA trail east of the water treatment plant will remain open.

Will emergency services be affected (police, fire, ambulance, etc.) due to road closures?

- No. The City works with these three services to inform them of the expansion and the detours so they can prepare contingency plans for this situation.

Will buses be re-routed or will there be any changes made to City transit/bus schedules?

- This will be determined in the fall of 2011 and information to those affected will be communicated.

Will street cleaning and snow removal be affected during construction?

- Yes, it will likely be affected, particularly for the detour that will be required; however this will be finalized in the coming months.

Is our water safe?

- Yes. The existing water treatment plant produces extremely high quality drinking water, and the plant and its staff consistently produce drinking water of better quality than required by regulation. The new UV system will further enhance the City's ability to treat water, and will provide an additional barrier to the multi-barrier treatment process. This additional barrier will help ensure the City's water continues to meet evolving regulations.

How does UV disinfection work?

- Municipal drinking water treatment providing filtration and disinfection with chlorine can reduce the risk of contracting giardiasis and cryptosporidiosis. Chlorine by itself is not effective against *Cryptosporidium* but can inactivate *Giardia*. Recent research indicates that ultraviolet light will inactivate both organisms. The use of UV disinfection will be required in the future, so we have chosen to add this safeguard to our water treatment system now while the reservoir is being expanded.
- For more information on *Giardia* and *Cryptosporidium*, please visit the Health Canada website at www.hc-sc.gc.ca.

Will the City continue to fluoridate our water supply? Isn't this dangerous?

- The Water Treatment Plant follows the recommendations of Health Canada and Saskatoon Health Region to fluoridate drinking water at 0.7ppm which has now become the North American recommended standard. These guidelines are based on current, published scientific research

related to health effects, aesthetic effects, and operational considerations. Health Canada states that the use of fluoride for the prevention of dental cavities is endorsed by over 90 national and international professional organizations including Health Canada, the Canadian Public Health Association, the Canadian Dental and Medical Associations.

- For more information on Fluoride in drinking water, please visit the Health Canada website at www.hc-sc.gc.ca.

Does “UV disinfection system” mean you will be adding more fluoride to our drinking water?

- No, the Water Treatment Plant follows the recommendations of Health Canada and Saskatoon Health Region to fluoridate drinking water. Fluoride injection is not part of this project.

Does adding a UV disinfection system mean fluoride, chlorine and other chemicals used to treat the drinking water can be removed?

- No, it does not.

Why were residents asked to conserve water earlier this summer? Will this expansion prevent that problem from happening again?

- Residents were asked to conserve water earlier this summer due to some mechanical repairs needed at the water treatment plant. At the same time as the repairs were taking place, the water level in the river was rising and flowing very quickly, which stirred up a lot of sand/silt in the water. By conserving water, the water treatment plant staff were able to maintain the quality of the drinking water provided to the residents of Saskatoon, while dealing with the challenge of removing all of the extra sand/silt in the water.
- In the event of rising river levels and fast flowing water with extra sand/silt in it happening again, the water treatment plant has found better ways to handle and filter out the excessive amounts of sand/silt in the water.
- By expanding the reservoirs to store more water, there will be more water available to meet the demands of Saskatoon residents when there are events such as equipment repairs or high sand/silt loads in the river water.

For more information contact:

Krystyna Kotowski, Senior Project Management Engineer

Ph: 975-2568 Fax: 975-7906

Email: krystyna.kotowski@saskatoon.ca

Or visit www.saskatoon.ca and click on “W” for Water – Water Treatment Plant – Expansion Plans