



SAINT JOHN



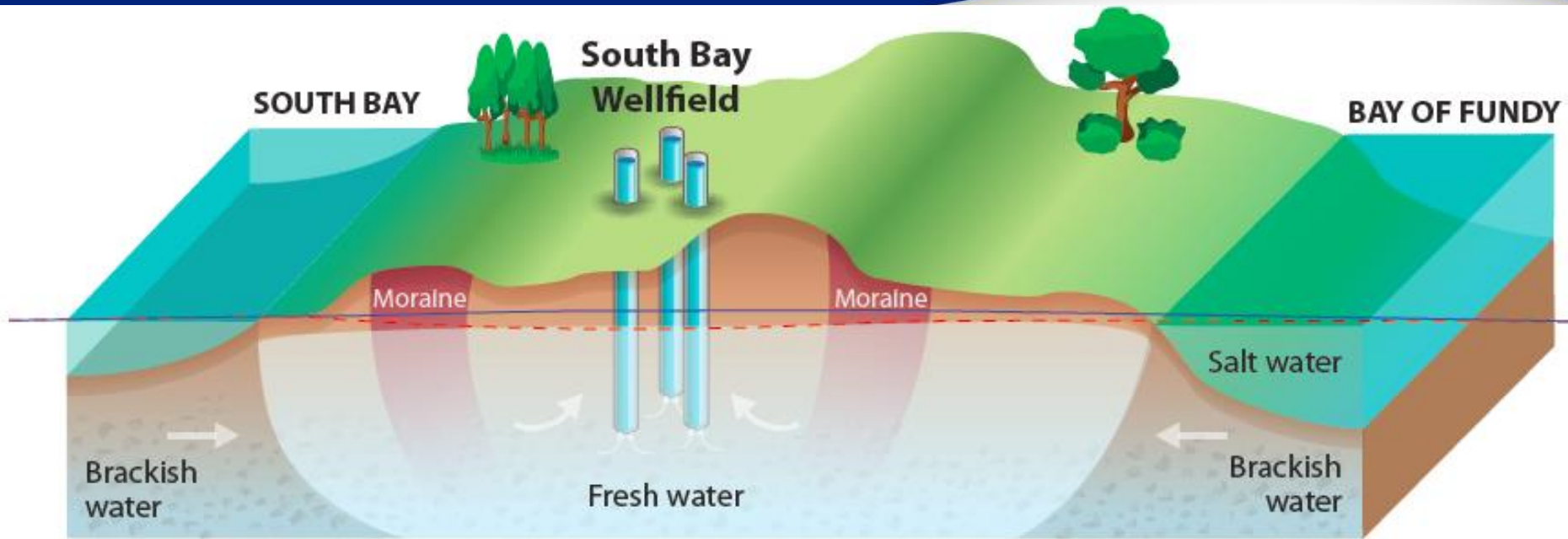
South Bay Wellfield Performance

July 8, 2019

South Bay Wellfield

- Regularly monitor water quality and water levels in wellfield
 - Water quality has dramatically improved since transition in 2017
 - Water levels in drinking water wells are 1 metre below sea level; required level is one-metre above sea level to avoid the risk of salt water intrusion
 - No immediate impact to water quality or quantity
 - South Bay Wellfield drinking water remains an excellent source of high quality drinking water, exceeding national and provincial guidelines
 - **Prudent for City to take early proactive steps to ensure long-term sustainability of wells**

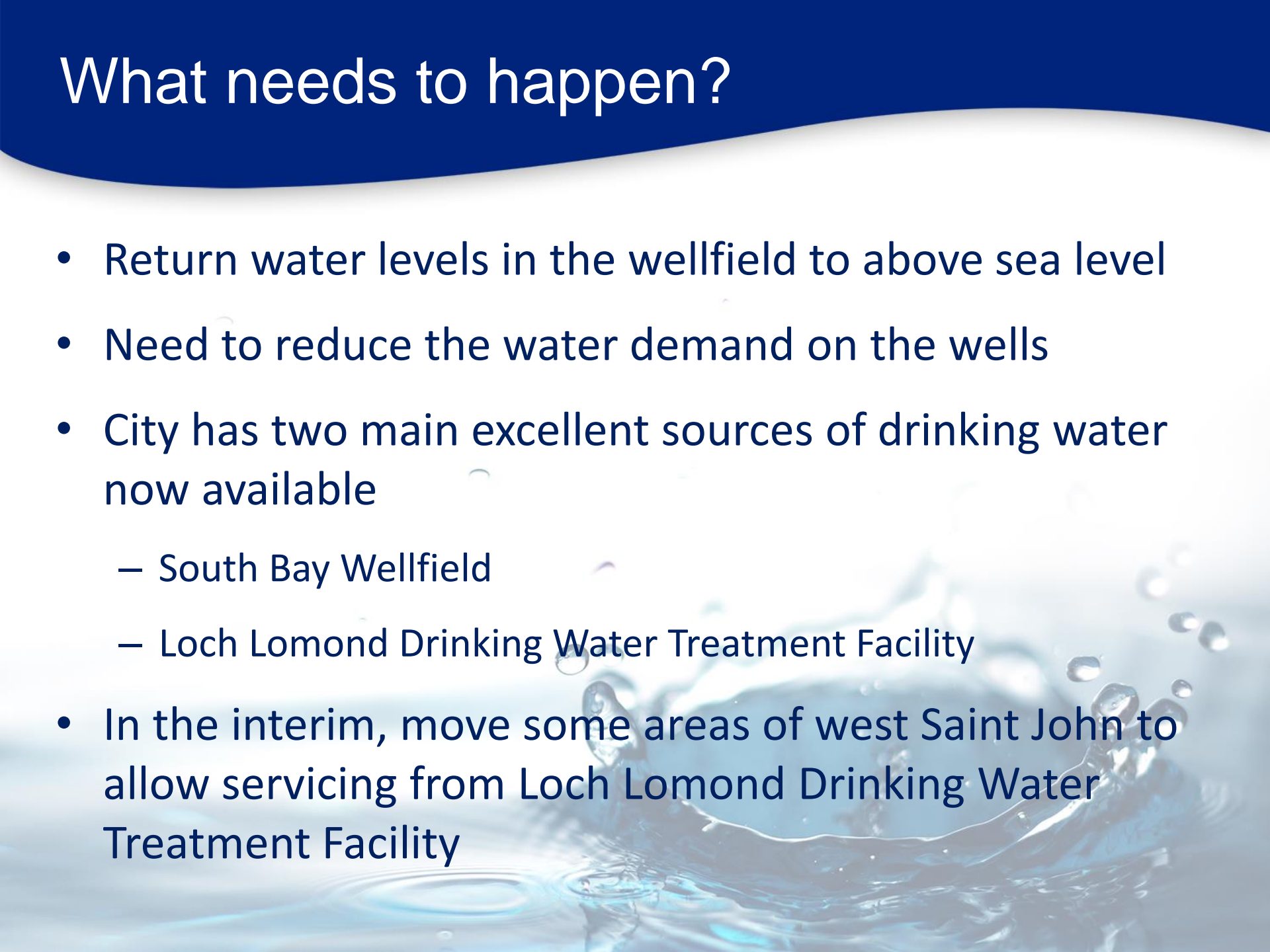
South Bay Wellfield - water levels



— Pre-pumping water level
- - - Current water level



What needs to happen?

- Return water levels in the wellfield to above sea level
 - Need to reduce the water demand on the wells
 - City has two main excellent sources of drinking water now available
 - South Bay Wellfield
 - Loch Lomond Drinking Water Treatment Facility
 - In the interim, move some areas of west Saint John to allow servicing from Loch Lomond Drinking Water Treatment Facility
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- A background image showing a dynamic splash of water with droplets and ripples, set against a light blue gradient. The splash is concentrated in the lower right quadrant, with water droplets captured mid-air and creating concentric ripples on the surface below.

Pipe on Reversing Falls Bridge




West – Pressure Zones



Servicing West Saint John – Boundary Line

Some of the key considerations in identifying areas west that would be switched to the new Loch Lomond Drinking Water Treatment Facility.

1. Sufficient water demand reduction to allow the water level in the wells to rise above sea level;
 2. Ability of the LLDWTF to accommodate additional demand;
 3. Maintaining similar service pressures in the water systems;
 4. Redundancy of supply;
 5. Fire flows and storage;
 6. Water quality; and
 7. Use of existing infrastructure.
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West Side Water Servicing Adjustments

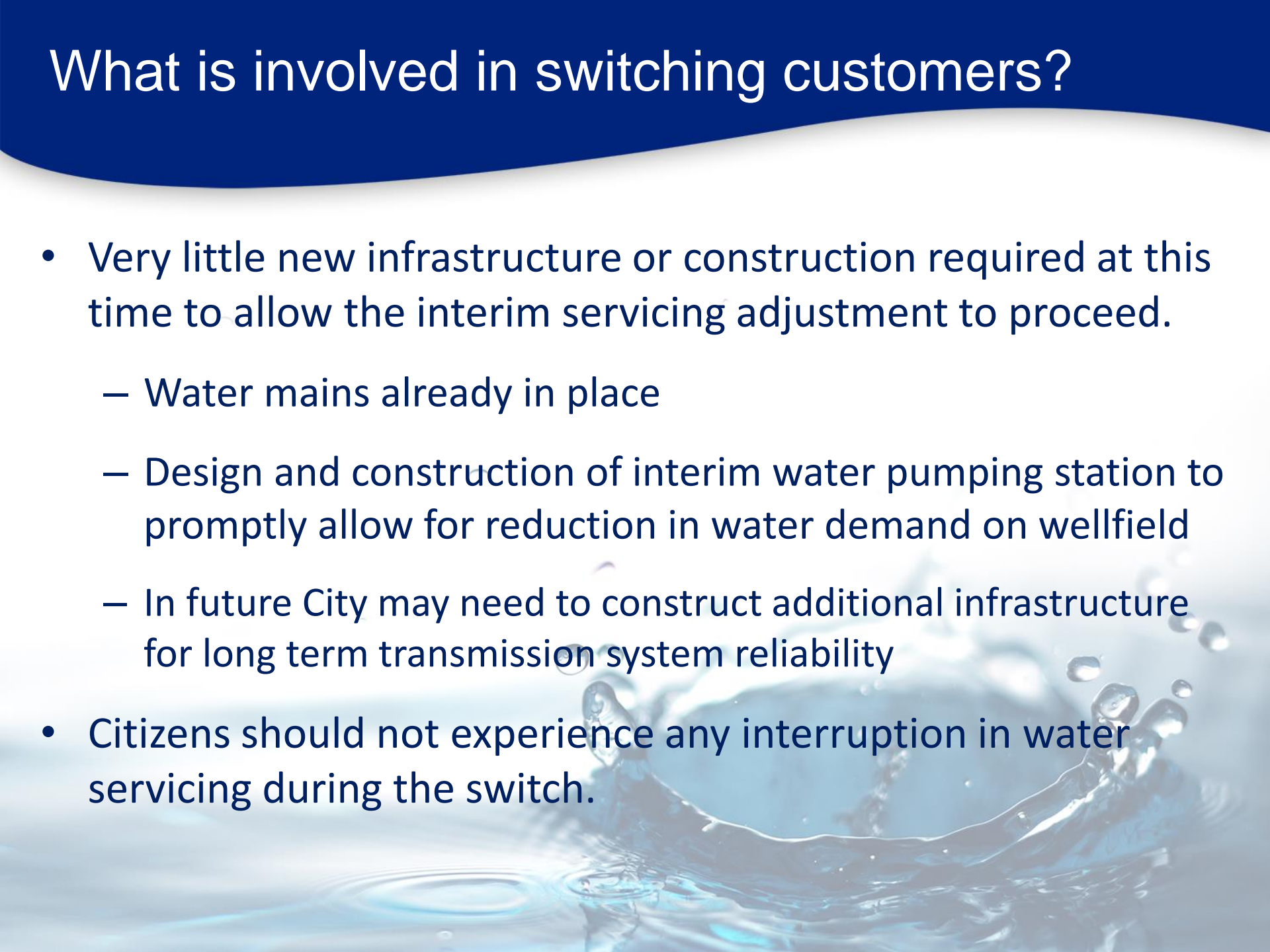


Regulator Input

- Both the NBDELG and NBDOH are supportive of the interim servicing solution
- Continue to work collaboratively with the NBDELG and NBDOH as we construct the interim pumping station and prepare for the transition



What is involved in switching customers?

- Very little new infrastructure or construction required at this time to allow the interim servicing adjustment to proceed.
 - Water mains already in place
 - Design and construction of interim water pumping station to promptly allow for reduction in water demand on wellfield
 - In future City may need to construct additional infrastructure for long term transmission system reliability
 - Citizens should not experience any interruption in water servicing during the switch.
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- A background image showing a dynamic splash of water with droplets and ripples, set against a light blue gradient. The splash is centered towards the bottom right of the slide.

When is the switch planned to occur?

- Once construction of the pump station is completed and the facility commissioned the switch can occur
- Timing is currently scheduled for **mid to late fall 2019**
- Over the coming months preparations will continue
- Water service should not be impacted by the change
- City will notify prior to switch



West Wells Background

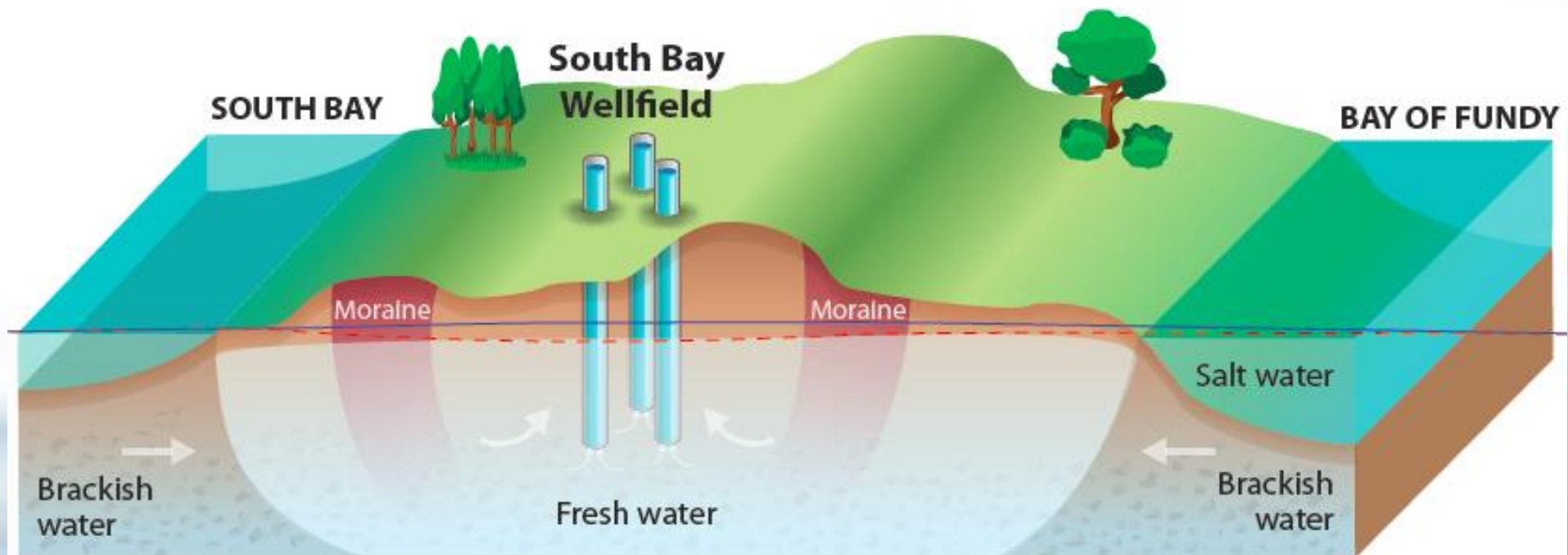
- In 2012 City explores the potential for groundwater (both east and west) as means to optimize the SCDWP
- South Bay area identified as having potential for a high quality/high yield aquifer in fall 2012, and the option was pursued by the City
- Late 2012 City releases RFP for exploration and development of a groundwater system
- Early 2013 City retains reputable engineering firm to develop a groundwater exploration program
- The City of Saint John drilled a production scale well in the South Bay aquifer in the summer of 2013 (under BGC Eng. direction)

West Wells Background

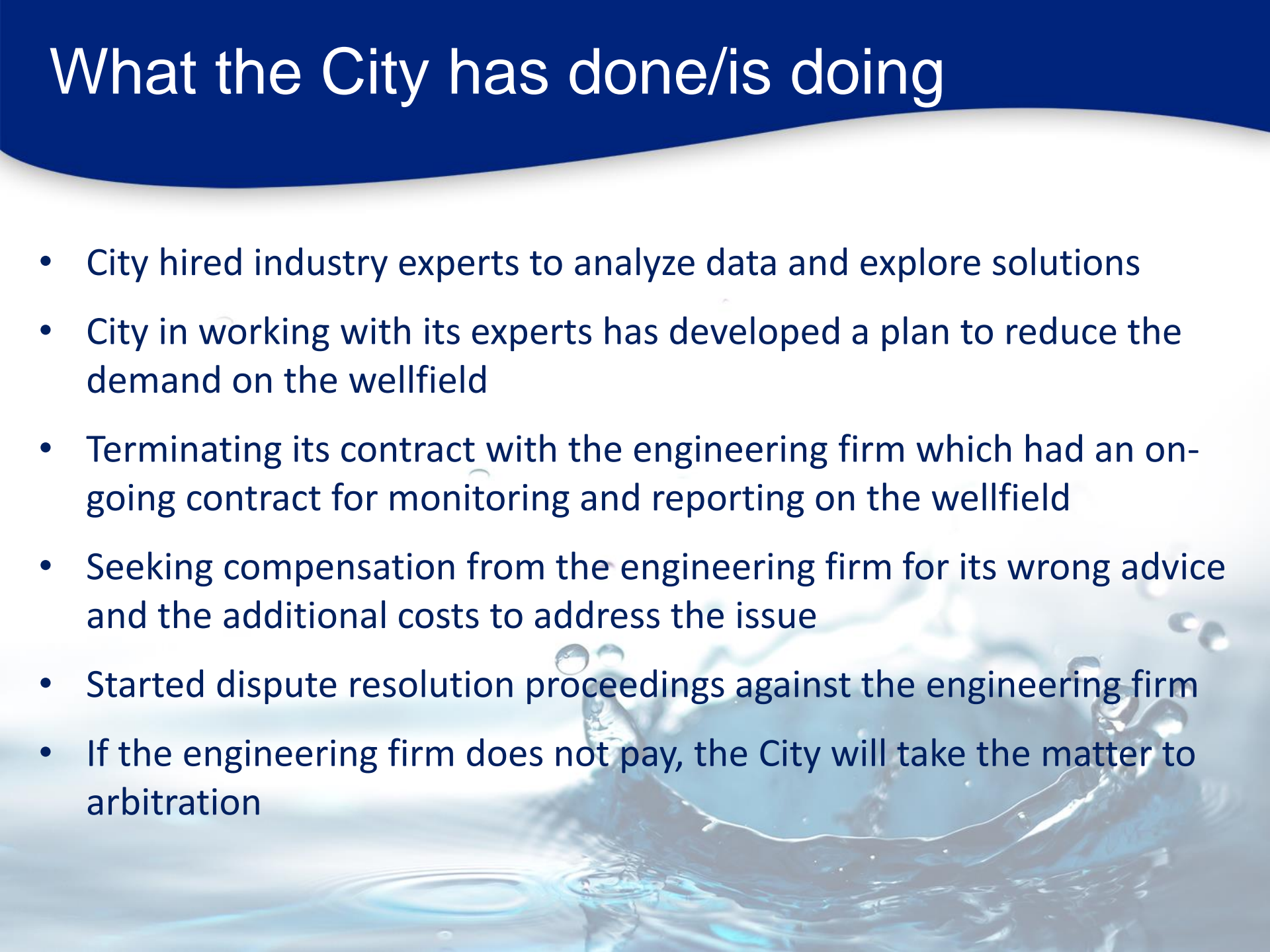
- January 2014 – January 2015 Engineering firm undertakes a year-long pumping test. This far exceeds industry standards
- November 2014 – March 2015 Engineering firm advises City there was enough water to service West Saint John and recommends it as a water source for West Saint John
- Two external independent reviewers agree with engineering firm's conclusion that South Bay Aquifer can meet the water demands of West Saint John
- City relied on this advice and Common Council endorsed a plan to move forward with the SCDWP scope based on groundwater being the future source of West Saint John drinking water (WTP reduced to 75MLD)

Why is there a difference in what was expected and actual water levels?

- The engineering firm was wrong – the wells can't meet West side demand without water levels dropping below sea level

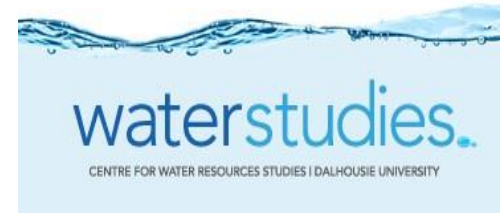


What the City has done/is doing

- City hired industry experts to analyze data and explore solutions
 - City in working with its experts has developed a plan to reduce the demand on the wellfield
 - Terminating its contract with the engineering firm which had an on-going contract for monitoring and reporting on the wellfield
 - Seeking compensation from the engineering firm for its wrong advice and the additional costs to address the issue
 - Started dispute resolution proceedings against the engineering firm
 - If the engineering firm does not pay, the City will take the matter to arbitration
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- A background image showing a dynamic splash of water with droplets and ripples, rendered in a light blue and white color scheme, positioned behind the lower half of the text.

Switching of Source Waters

- Drinking water will continue to be high quality
- City engaged Industry Experts – CBCL and Dalhousie University
- CBCL advised that based upon prior experience the planned change in water service does present possible risks
- Mitigating positive factors in current scenario; both supplies are treated with orthophosphate and both have similar pH values at or above 7.5
- City is working to further inform itself of the risks by having CBCL and Dalhousie University perform studies



Pipe Rack Corrosion Monitoring



- Pipe rack includes new and harvested pipe
- Water samples are regularly collected

Mitigating Actions

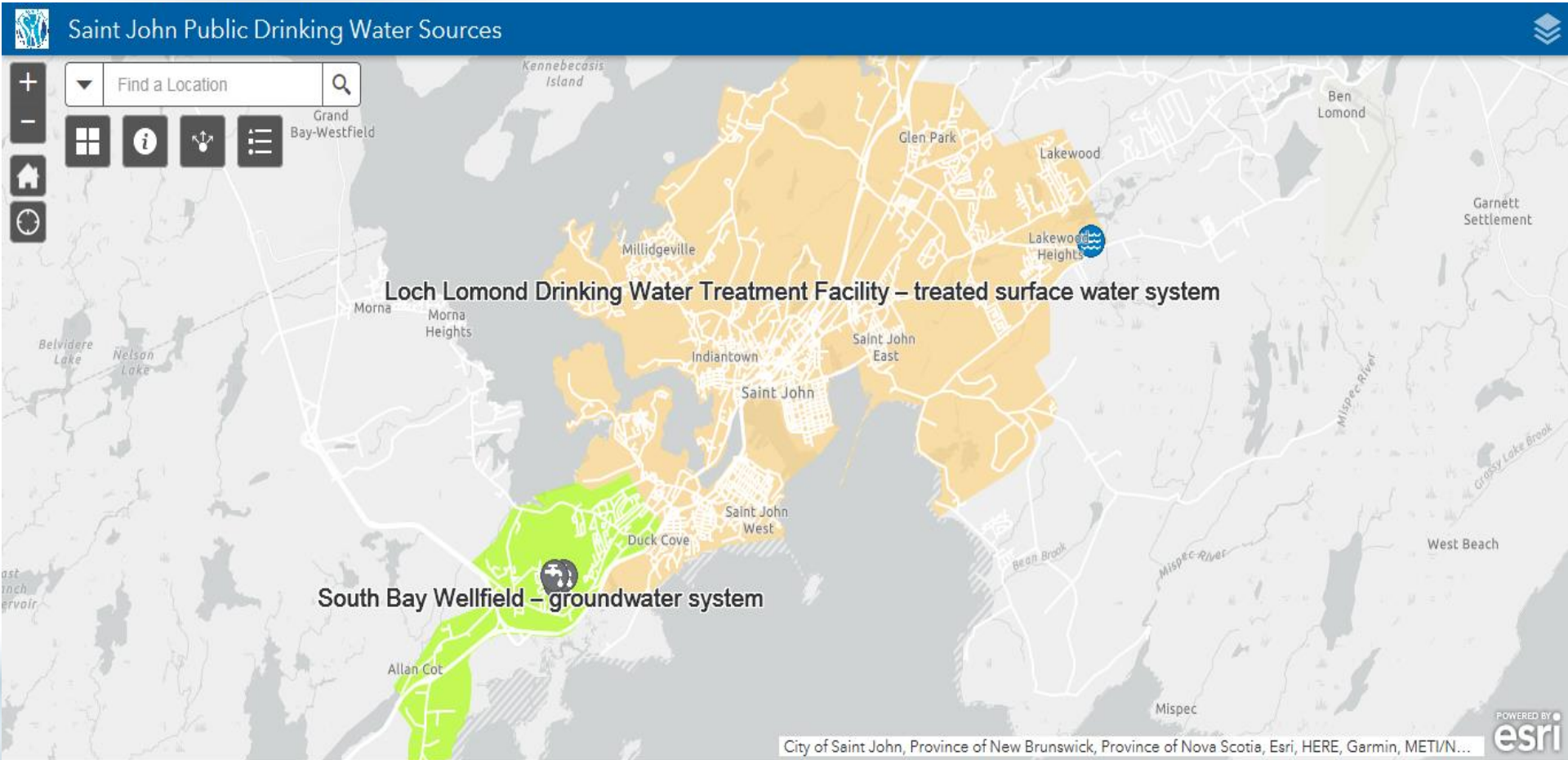
- **pH of water from the Loch Lomond Drinking Water Treatment Facility will be further adjusted upward** gradually over a period of weeks.
- **Increase treatment with orthophosphate** for a period of months after the transition while ongoing monitoring of in-field data to guide decisions



Communications Resources Available

- Communications documents
 - South Bay Wellfield - Q & A
 - West Water News
 - Timeline: South Bay Wellfield
 - Infographics titled:
 - Current Wellfield Water Level
 - West Side Water Servicing Adjustment Maps (2)

Interactive Map (website app)



<https://saintjohn.maps.arcgis.com/apps/webappviewer/index.html?id=9c6848db1ecb4ee7988624e673aeebb4>

Informative Video



Scheduled Community Open Houses

Wednesday July 10, 2019

Carleton Community Centre gymnasium

2pm – 4pm | 6pm – 8pm

Thursday July 11, 2019

Denis Morris Community Centre

2pm – 4pm | 6pm – 8pm

Monday July 15, 2019

Hillcrest Baptist Church gymnasium

2pm – 4pm | 6pm – 8pm



Summary

- Water quality exceeds national and provincial guidelines; significant improvement
- There's enough of water to meet current demand
- An early adjustment is necessary to ensure the wellfield can sustainably supply the customer base it is serving
- City is being proactive and preventative with interim actions while developing a long-term plan
- City is taking appropriate legal action to ensure ratepayers are protected

Recommendation

Now therefore be it resolved that the City implement the interim solution described in M&C No. 2019-168 of supplying water from the Loch Lomond Drinking Water Treatment Facility to Lower West, Milford, Randolph, Fundy Heights, Duck Cove and Sand Cove neighbourhoods, as shown in a yellow colour on the plan titled West Side Water Servicing Adjustments in Appendix 1 while it develops a long-term solution to ensure a long-term sustainable supply of safe, clean drinking water for West Saint John.





For additional information

www.saintjohn.ca/westsidewater

Open House

Customer Service - 658-4455