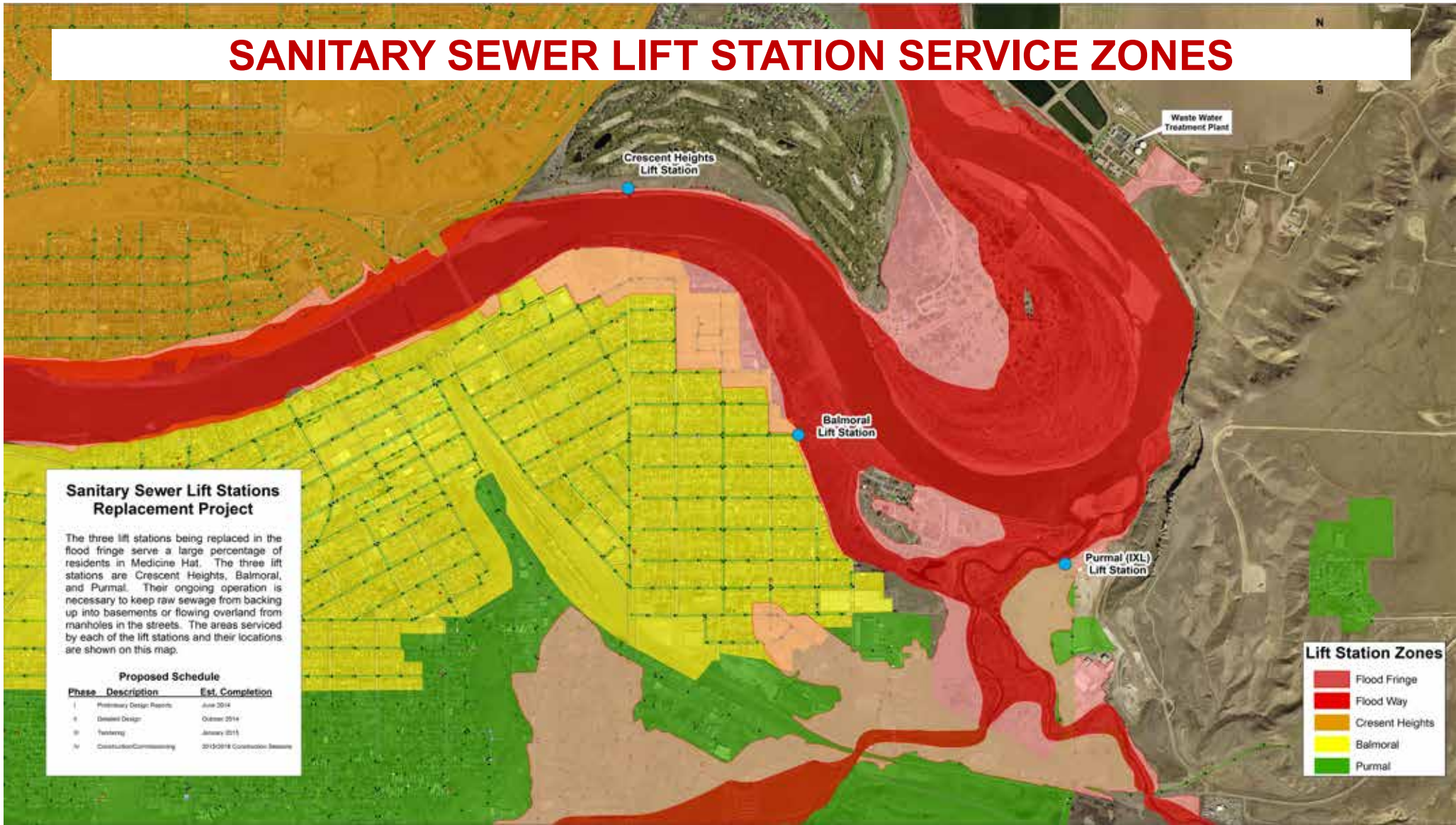


SANITARY SEWER LIFT STATION SERVICE ZONES



Sanitary Sewer Lift Stations Replacement Project

The three lift stations being replaced in the flood fringe serve a large percentage of residents in Medicine Hat. The three lift stations are Crescent Heights, Balmoral, and Purmal. Their ongoing operation is necessary to keep raw sewage from backing up into basements or flowing overland from manholes in the streets. The areas serviced by each of the lift stations and their locations are shown on this map.

Proposed Schedule

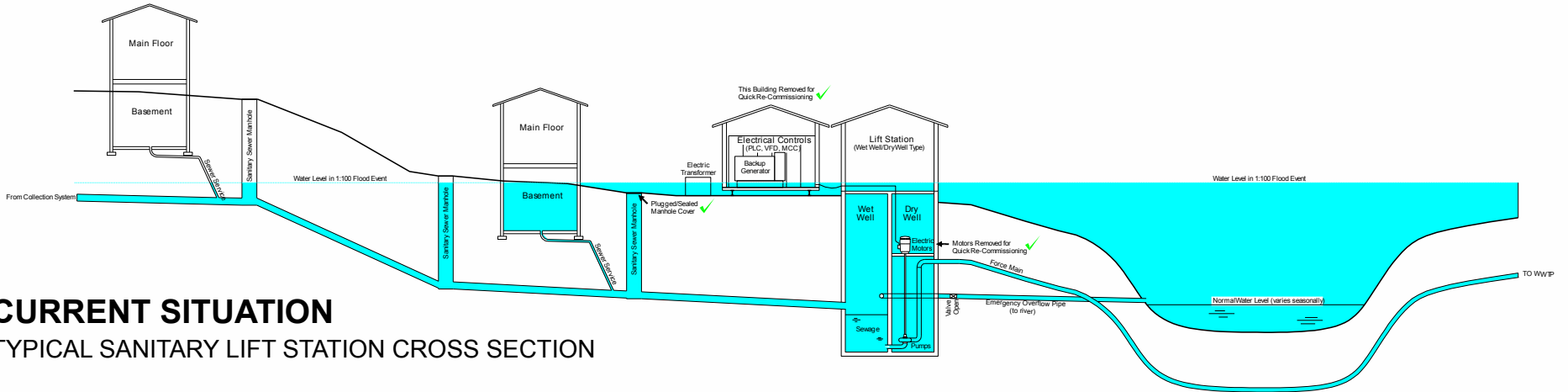
Phase	Description	Est. Completion
1	Preliminary Design Reports	June 2014
2	Detailed Design	October 2014
3	Testing	January 2015
4	Construction/Commissioning	2015/2016 Construction Begins

Lift Station Zones

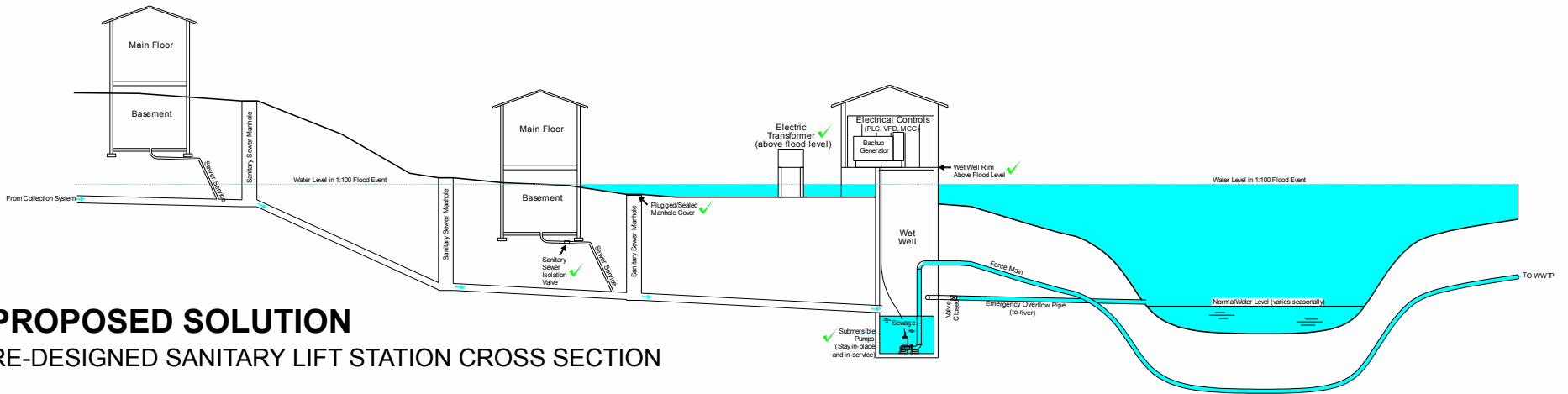
- Flood Fringe
- Flood Way
- Crescent Heights
- Balmoral
- Purmal



SANITARY SEWER LIFT STATION REPLACEMENT



CURRENT SITUATION
TYPICAL SANITARY LIFT STATION CROSS SECTION



PROPOSED SOLUTION
RE-DESIGNED SANITARY LIFT STATION CROSS SECTION



Sanitary Sewer Lift Stations

Wastewater, or domestic sewage, from our homes and businesses travels through a network of pipes, sometimes for several kilometers, to reach the Wastewater Treatment Plant. This network of pipes is known as the Sanitary Sewer Collection System or the Domestic Sewer Collection System. There is a separate collection system called the Stormwater Collection System for handling rain and melt-water runoff from the catch basins at the street gutters to the river or storm water ponds. These two distinct systems are not interconnected.

The domestic sewage from our homes and businesses travels through a small (usually 4" diameter), sloped pipe called the Sanitary Service Lateral that empties into a larger pipe (usually 8" or larger diameter) under the street known as a Sanitary Sewer Main. This sanitary sewer main is also sloped to facilitate flow by gravity toward the treatment plant, generally following the slopes of the overland terrain. When the sanitary sewer cannot continue by gravity because of a hill or if the main becomes too deep, the sanitary sewage must be "lifted" and then be released to flow by gravity again. The pump station used to lift the sanitary sewage is called a sanitary sewer lift station. It has a chamber called a wet-well, from which pumps convey the sanitary sewage to a higher elevation. The pumps are controlled by electrical components and there are back-up power generators to keep the pumps going in case of a power failure. Medicine Hat has sixteen such sanitary sewer lift stations of varying ages and capacities.

Three of our sanitary sewer lift stations are located in the South Saskatchewan River flood fringe and are at risk of inundation during flood events. In the initial hours of a flood event response, provincial-level forecasting may initiate pre-emptive action by the utility if these stations are at risk of inundation. Utility crews will safely remove critical control and electrical equipment and move them to higher ground, thus preserving the equipment for quick re-deployment once the flood waters recede. This action allows the utility to resume operations in a matter of several hours; without this pre-emptive action, it would take several weeks to repair or replace damaged equipment.

Detailed plans are being developed to mitigate the potential inundation risk to the Crescent Heights, Balmoral, and Purmal Sanitary Sewer Lift Stations which will allow these stations to remain in operation during flood events. Their ongoing operation is of critical importance to the quality of life for our customers and will mitigate the risk of sanitary sewage backing up into residents' basements or flowing overland in our streets.