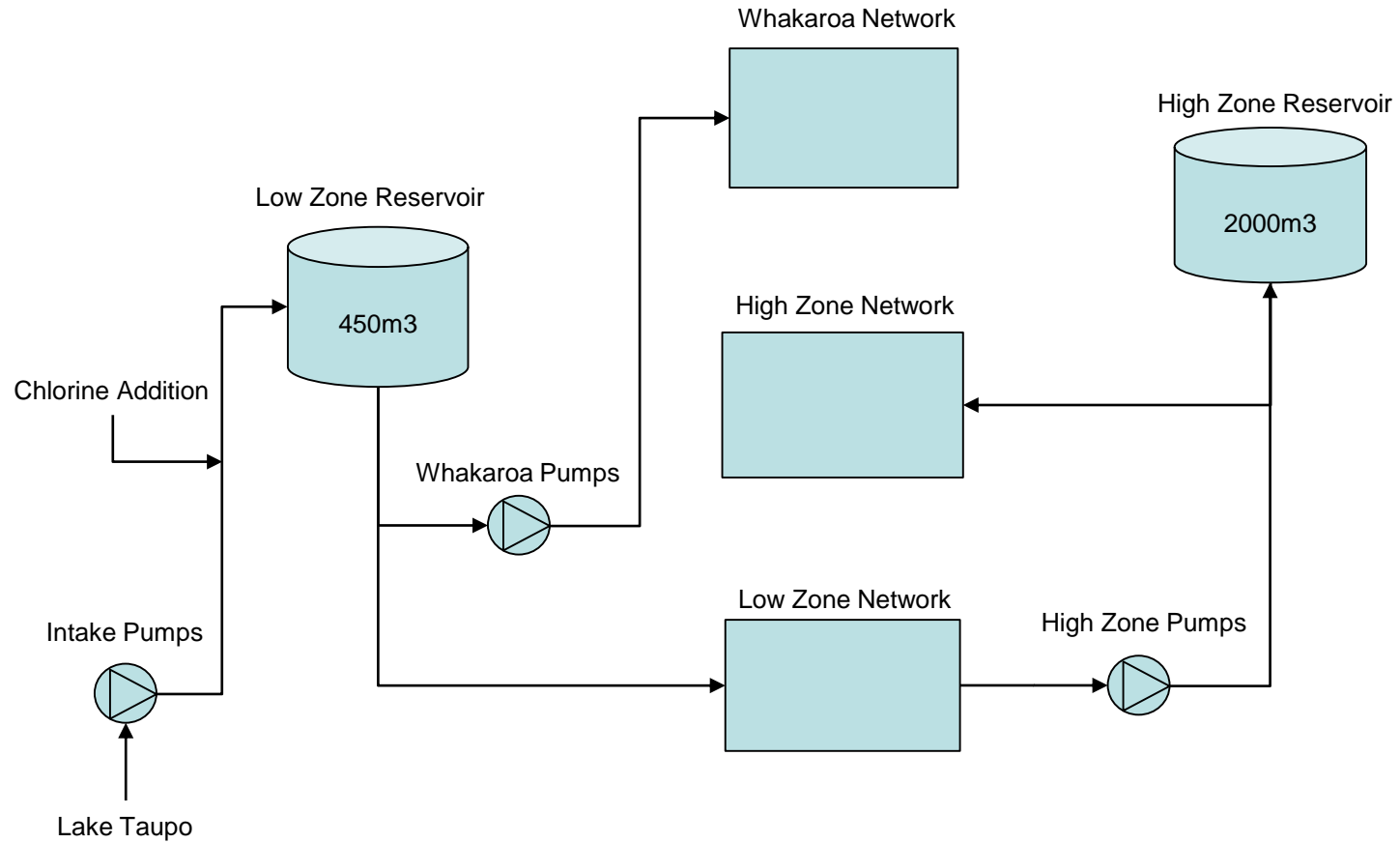


A scenic view of a lake, likely Taupo, with a forested hill on the left and a yellow buoy in the water. The sky is overcast with grey clouds. The foreground shows a pebbly beach and a grey concrete structure.

Taupo District Council Kinloch Representative Group Meeting

Water Supply Update - July 2020

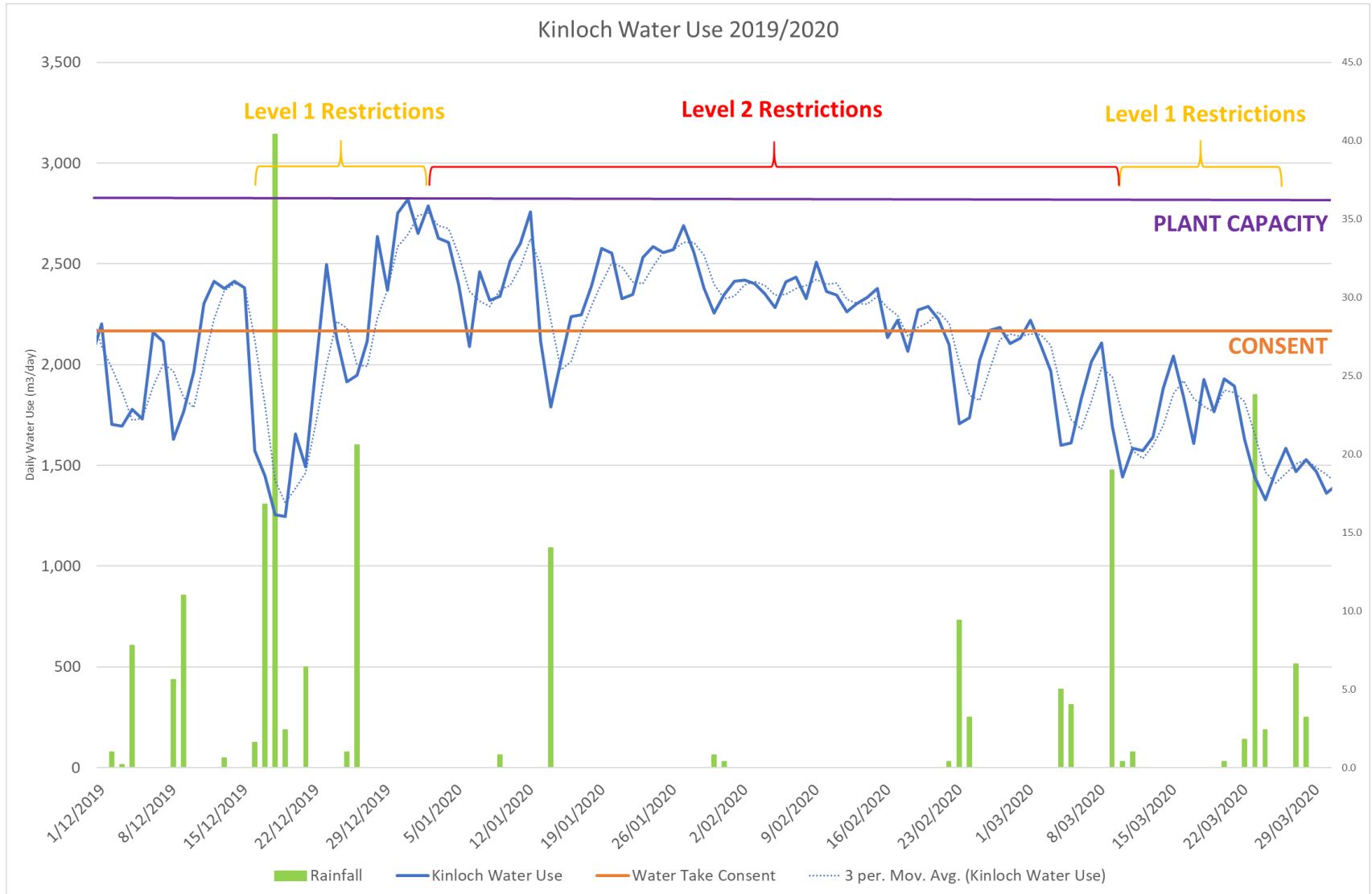
Current Water Supply System



Current Plant Capacity

Site	Description	Maximum Flow		Comment
Intake Pump Station	Flow from Lake to Low Zone Reservoir	48 l/s	2,800 m ³ /day	<p>Intake instantaneous capacity is 48l/s which equates to 4150m³/day. However actual maximum flow is closer to 2,800m³/day because flow is limited by reservoir level.</p> <p>When the reservoir is full, which occurs during the night and the middle of the day, the intake cannot pump water.</p>
Whakaroa Pump Station	Flow from Low Zone Reservoir to Whakaroa	6 l/s	510 m ³ /day	Rural area is all flow restricted. Maximum flow based on all connections running 24 hours per day is 510 m ³ /day.
High Zone Pump Station	Flow from Low Zone Network to High Zone Network	22 l/s	550 m ³ /day	Instantaneous capacity is 22l/s which equates to 1900m ³ /day. However actual maximum flow is closer to 550m³/day because flow is limited by reservoir level.

2019/20 Water Use



Water Conservation & Alert Levels

- **Water Conservation Alert Levels**

Alert Level 0	No restrictions. Residents are encouraged to conserve and use water responsibly
Alert Level 1	Outdoor use restricted to Odd and Even days only
Alert Level 2	Irrigation by sprinklers prohibited
Alert Level 3	Total ban on all non-essential outdoor use

- **Alert Level Triggers**

	Level 1	Level 2	Level 3
Lake Level	Below 356.06m	Below 355.95m	Below 355.85m
Plant Capacity	Above 75% 2,100m ³ /day	Above 85% 2,380m ³ /day	Above 95% 2,660m ³ /day
Proximity to Consent	Above 90% 1,950m ³ /day	Above 95% 2,060m ³ /day	Above 98% 2,125m ³ /day

- **The water take consent is currently the most likely trigger**

Water Take Consent

- Current consent is for a volume of 2,168 m³/day.
- A new consent was applied for in March 2018.
- The application is for a combined consent between a number of Lake Taupo water take sites.
- We are waiting on feedback from the Tuwharetoa Maori Trust Board which is expected in August 2020
- The new consent volume is 41,500m³/day shared across the 5 take points of which 5,000m³/day will be immediately available for Kinloch.
- The volume requested allows for a fully developed Kinloch.

Water Use Compared

Scheme	Water Use Annual Average (litres / property / day)
Kinloch	1,500
Turangi	1,400
Taupo	1,000
Mangakino	700
Motuoapa	700
Omori/Kurutau/Pukawa	500

- We need to demonstrate appropriate water use per household as part of our water take consent
- Demand management can be expected when water use per household is high

Plant Capacity Increase

- Control Upgrade
 - Upgrade of the control systems across the scheme to allow the High Zone Pump Station to run at off peak times.
 - Plant capacity increase expected to approx. 3,300m³/day.
 - The control upgrade is expected to be completed by October 2020.
- Alert Level Triggers with New Consent & Control Changes

	Level 1	Level 2	Level 3
Lake Level	Below 356.06m	Below 355.95m	Below 355.85m
Plant Capacity	Above 75% 2,500m ³ /day	Above 85% 2,800m ³ /day	Above 95% 3,150m ³ /day
Proximity to Consent	Above 90% * 4,500m ³ /day	Above 95% * 4,750m ³ /day	Above 98% * 4,900m ³ /day

Forecast Water Restrictions

- 2019/20, Restrictions = 100 days
 - Level 1 = 32 days
 - Level 2 = 68 days
 - Level 3 = 0 days
- Theoretical 2020/21 Restrictions
 - With consent changed and control upgrade completed, restrictions would be reduced to 18 days at Level 1

NOTE: This assumes 2019/20 demand, lake level above minimum levels and no other supply issues

Additional Actions

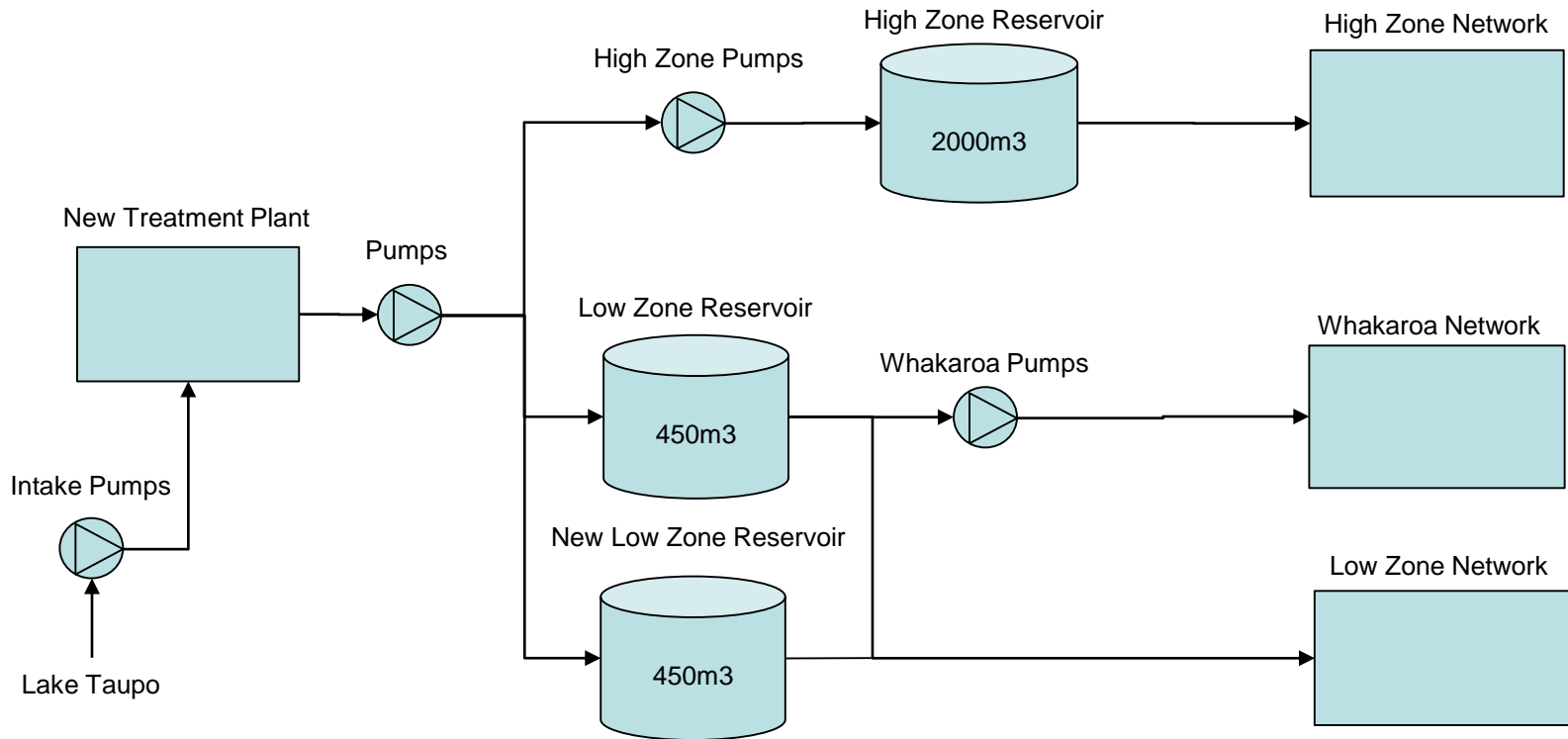
- **Current**

- PRV installation to allow feed from high to low zone – improves resilience
- High speed and quality of repairs
- Leak detection and repairs as required
- Pipeline renewal programmes
- Water loss monitoring (annual)

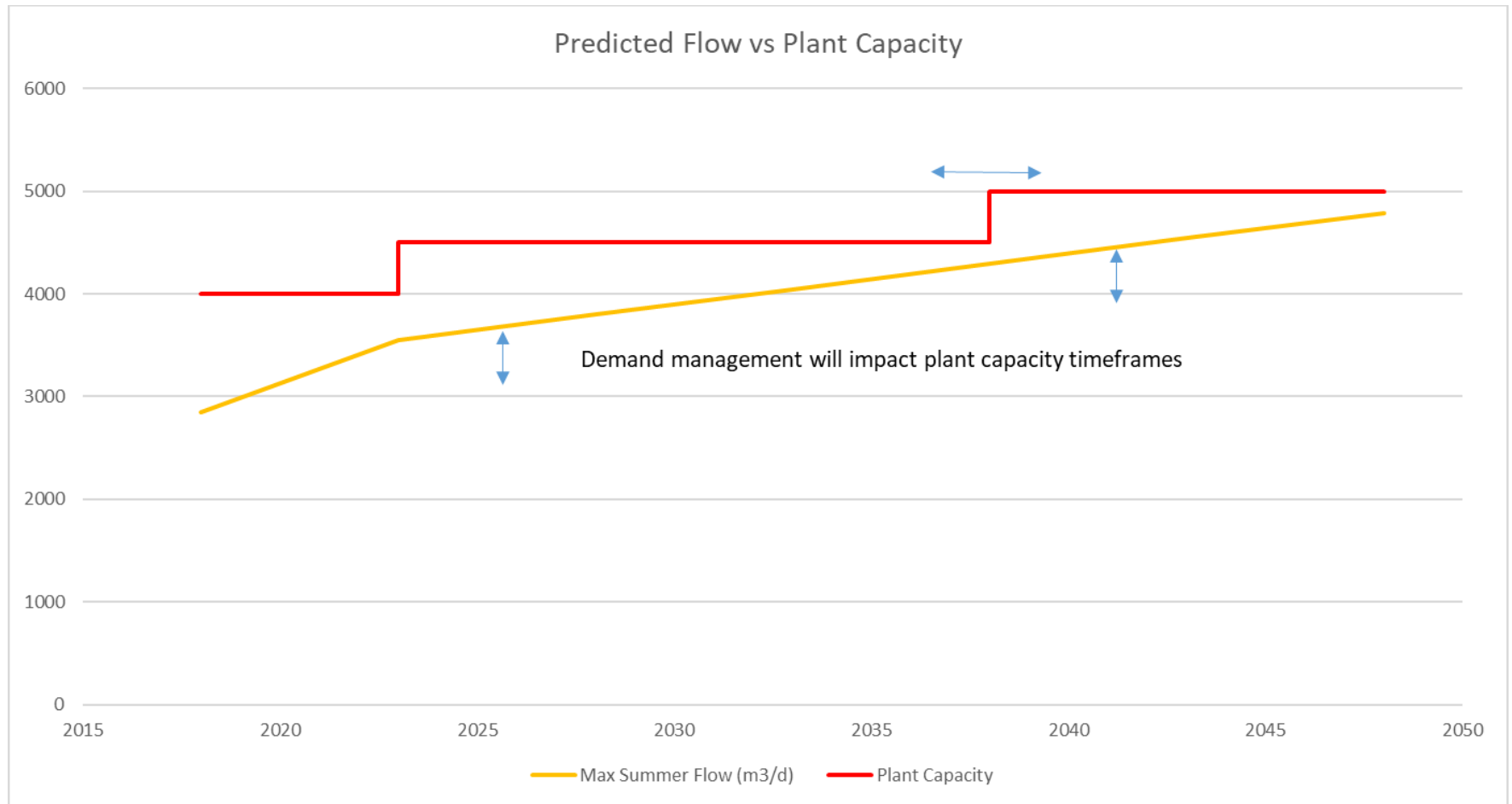
- **Future**

- Ongoing pipeline renewals
- Implementation of water strategy actions including water conservation and education initiatives, targeted improvement of water loss, and asset management improvements
-
- District wide metering

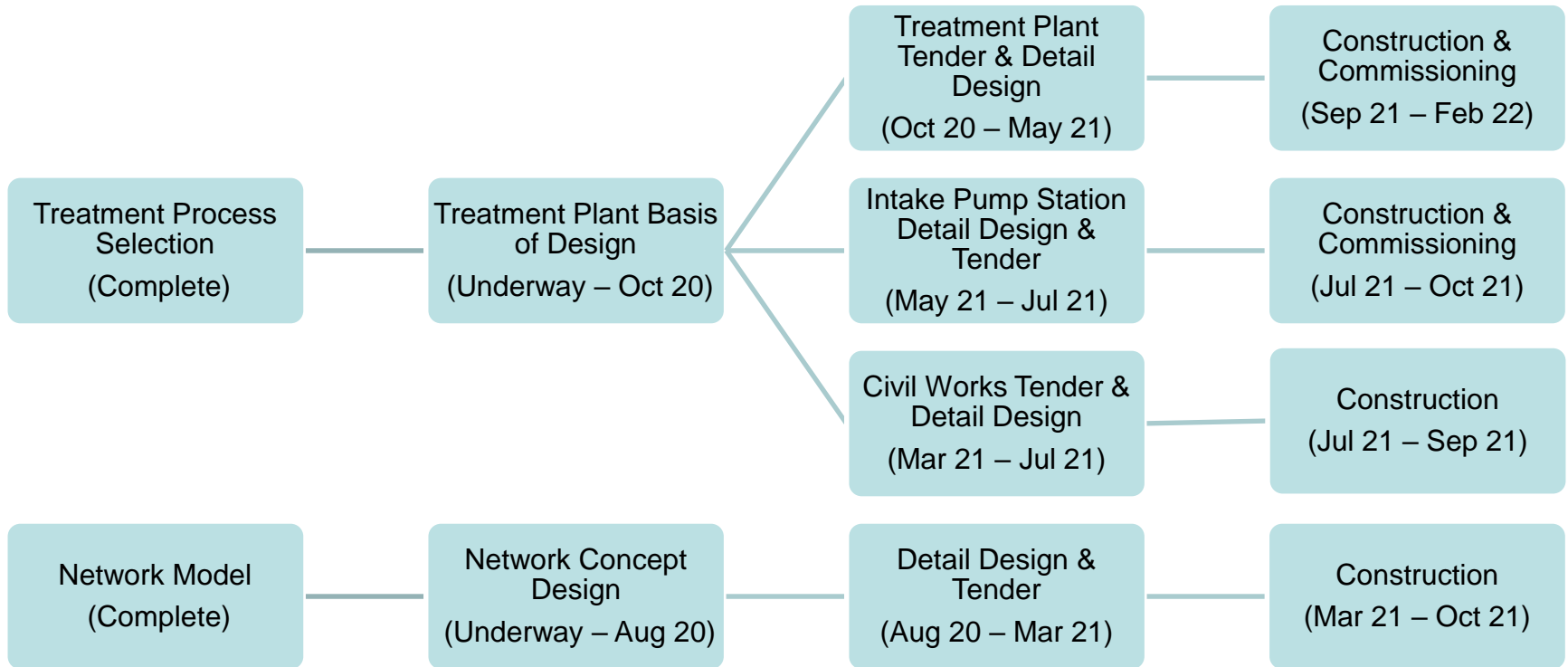
Future Water Supply System



Future Plant Capacity



Indicative Project Timeline



Note: Timeline will be confirmed once concept designs completed

E.Coli Event

December 2019

- A positive E. coli sample was collected on the routine monitoring sample run
- Normal procedure was followed including issue of a boil water notice.
- Sample contamination was deemed a possible cause.
- Actions completed include:
 - Sample point design has been reviewed and an improved sample point installed (as pictured below)
 - Eurofins, our new laboratory partner have taken over sampling and testing operations.

