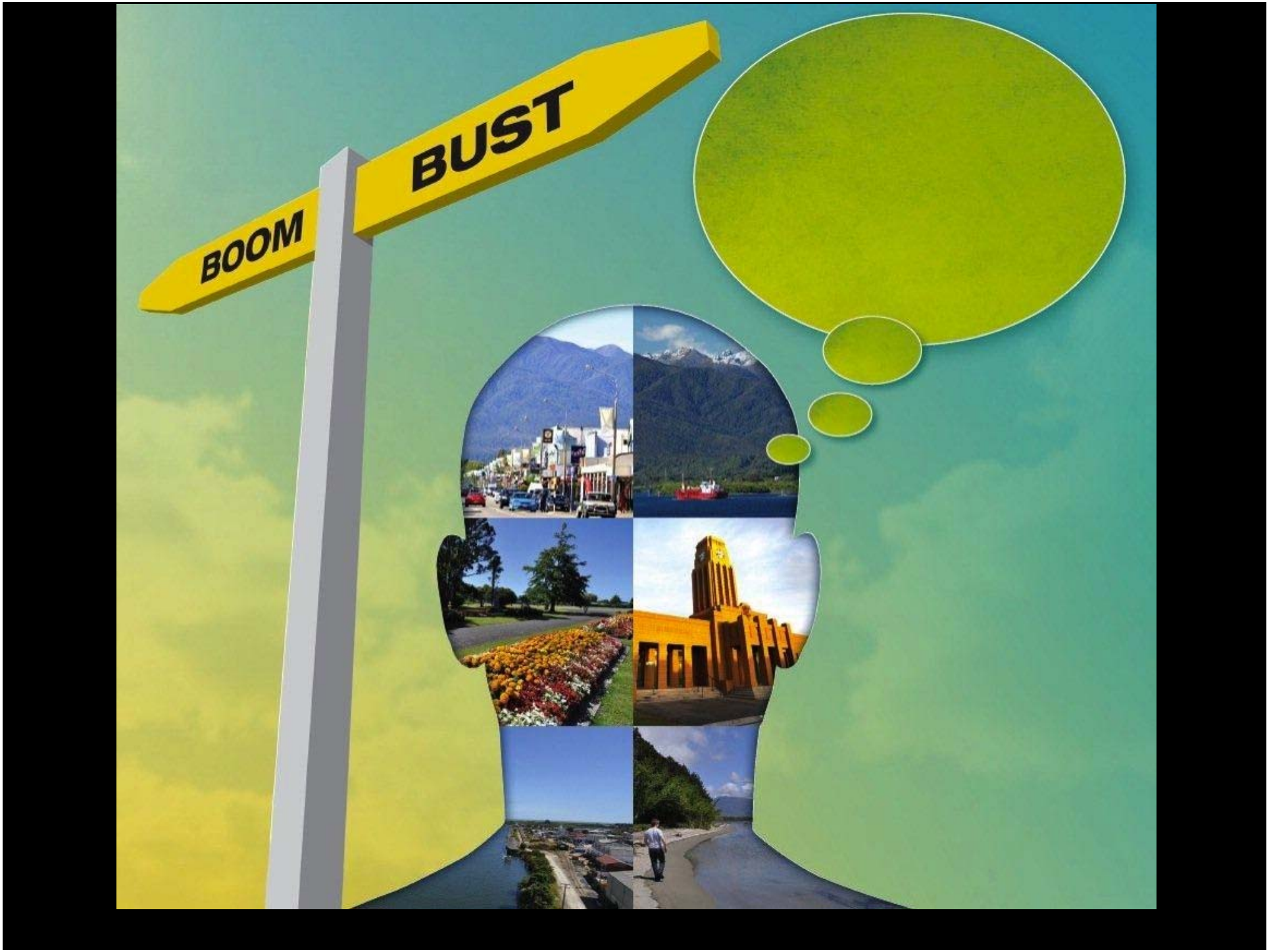
BOOM
BUST

Westport Water Supply

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Outline of presentation

- Brief history of water supply
- Issues of recent times
- Asset management of existing supply and reticulation
- Strategic Review of Water Supply
- Final Options from the peer review
- Treatment Plant Upgrade – Opus
- Costs

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Purpose of the upgrade

- To provide a safe and secure water supply for Westport for the next 50 to 100 years
- To restore consumer confidence with a water supply that has no taste and odours
- A water supply that meets the Drinking water standards

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History

- Water supply constructed 1903
- Water Treatment plant constructed 1985
- Major Upgrade to commence 2013/14

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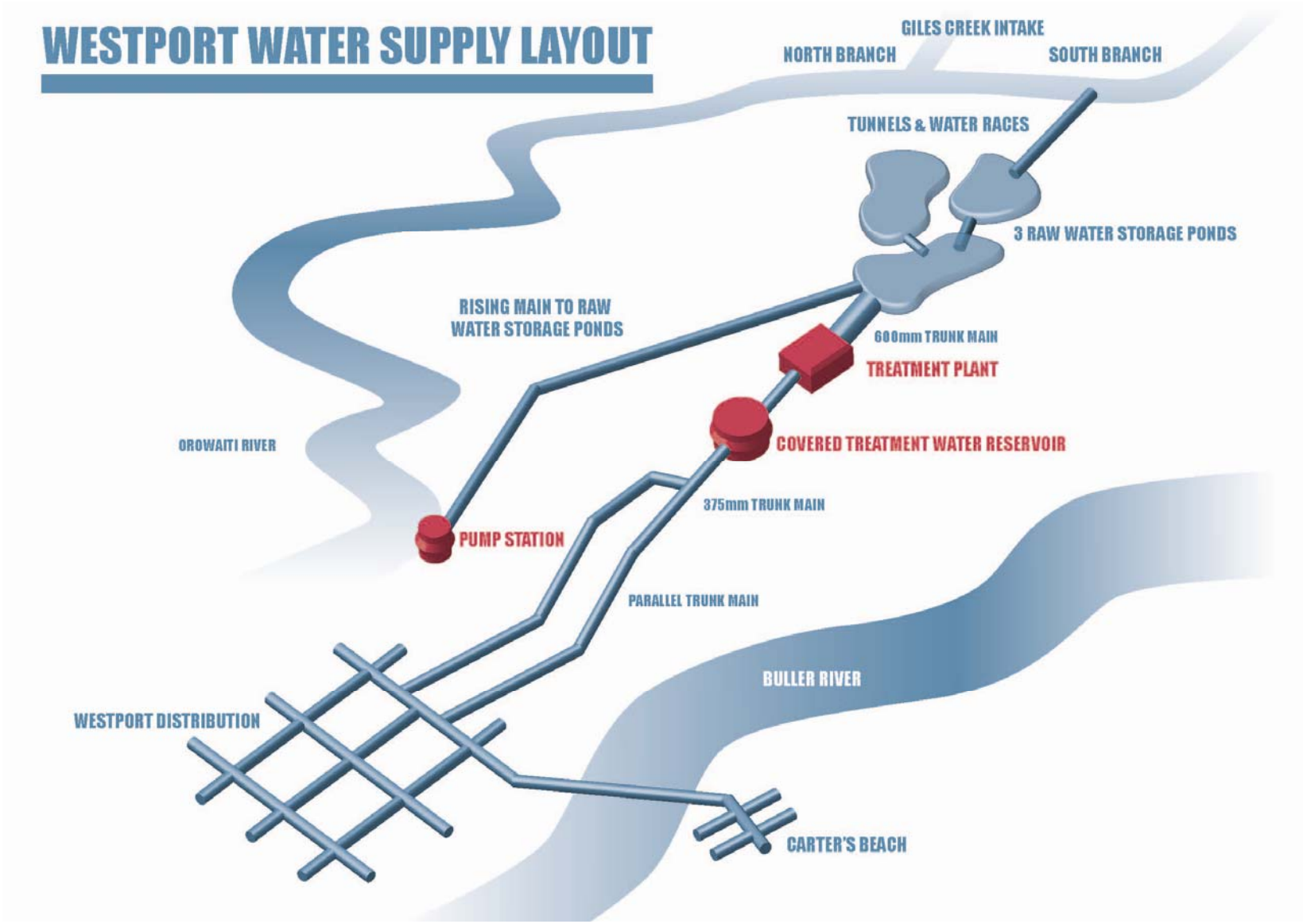

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- Tunnel collapse in 2000 resulted in first strategic investigation
- Connell Wagner engaged to look at all aspects of existing supply and also other potential sources
- Risk of tunnel collapse was quantified – outcome was the construction of alternative pump supply – cost about $1m
- Water pumped from lower reaches of Orowaiti introduced algae to reservoirs – a possible source of the taste and odour

- Further tunnel collapse resulted tunnel being piped $600,000
- Backwash failure resulted in the residual reservoir material being piped into the town reticulation.
- Second occurrence almost 12 months later

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Main Replacements

- Main trunkmain varies in age
- To replace a 454mm pipe means minimal water or to some residents none at all

2003/04 - 10 pipes 2004/05 – 5 pipes
2005/06 – 6 pipes 2006/07 – 5 pipes
2007/08 – 7 pipes 2008/09 – 1 pipe
2010/11 – 11 pipes 2011/12 – 2 pipes

To some consumers these breaks occur too often.

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Reticulation &Pressure

- Like the trunk main the reticulation varies with age and material
- Operates at high pressure
- Westport uses about twice as much water per capita than the average
- Combination of leakage and pressure.
- Upgrade will address pressure and possibly the replacement of the trunk main but not the reticulation.

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Proposed Upgrade

- Council have revisited the Connell Wagner strategic review
- Peer reviewed by Opus
- In addition to peer reviewing the options to upgrade an operational review was undertaken of the management of the treatment plant process
- The review by Opus came back with three options
- Infiltration gallery/bore field Buller River at Te Kuha
- Infiltration gallery/bore field Buller River at Nine Mile (Reedys)
- Existing supply upgraded

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Proposed Upgrade

- Council decision to upgrade the existing water supply rather than construct from different source.
- Decision was based on economics and also sustainability.
- Proposed upgrade starts at the source and reviews or renews every component progressively to the start of the reticulation

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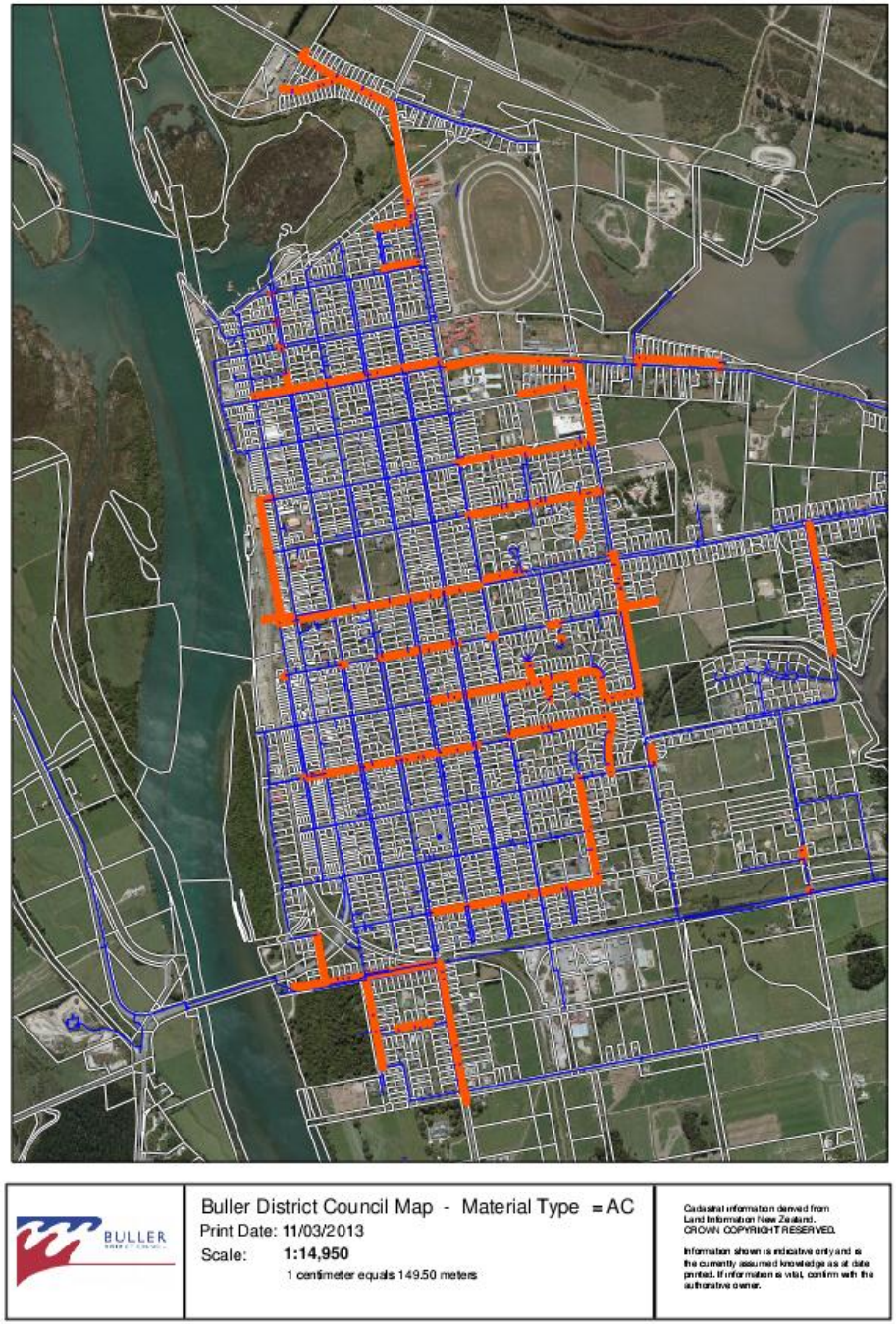
Asset Management

- Council has a GIS based asset management data base
- This is still in a development stage replacing a paper inventory
- Reticulation is plotted with material type and age
- Condition rating is an on going aspect and is evaluated at time of repairs.

Asset Management

Asset Management



Asset Management

Water Pipes Replaced Since 1970 (orange)
Print Date: 14/03/2013
Scale: 1:13,750
1 centimeter equals 137.50 meters

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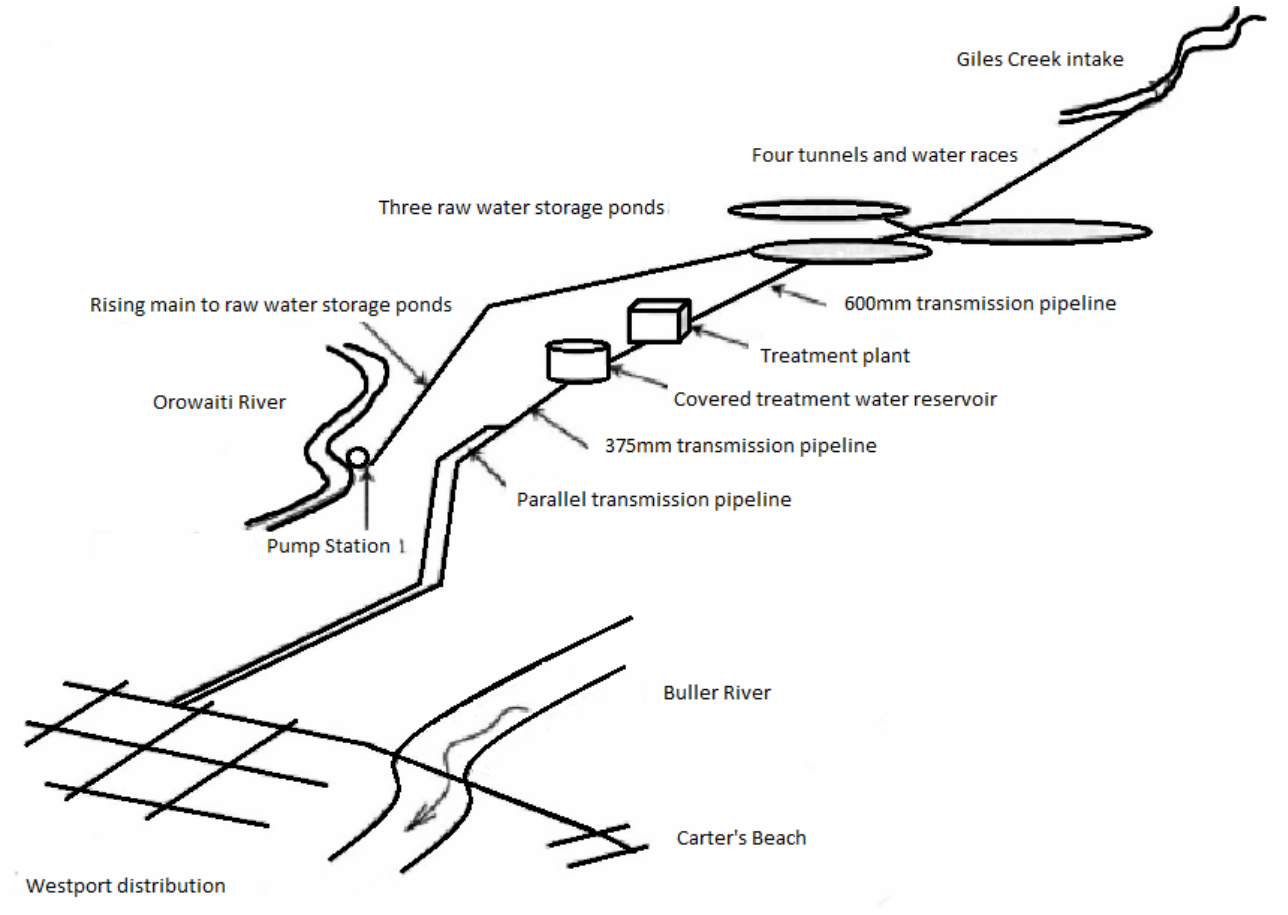
Westport Water Treatment Plant Upgrade

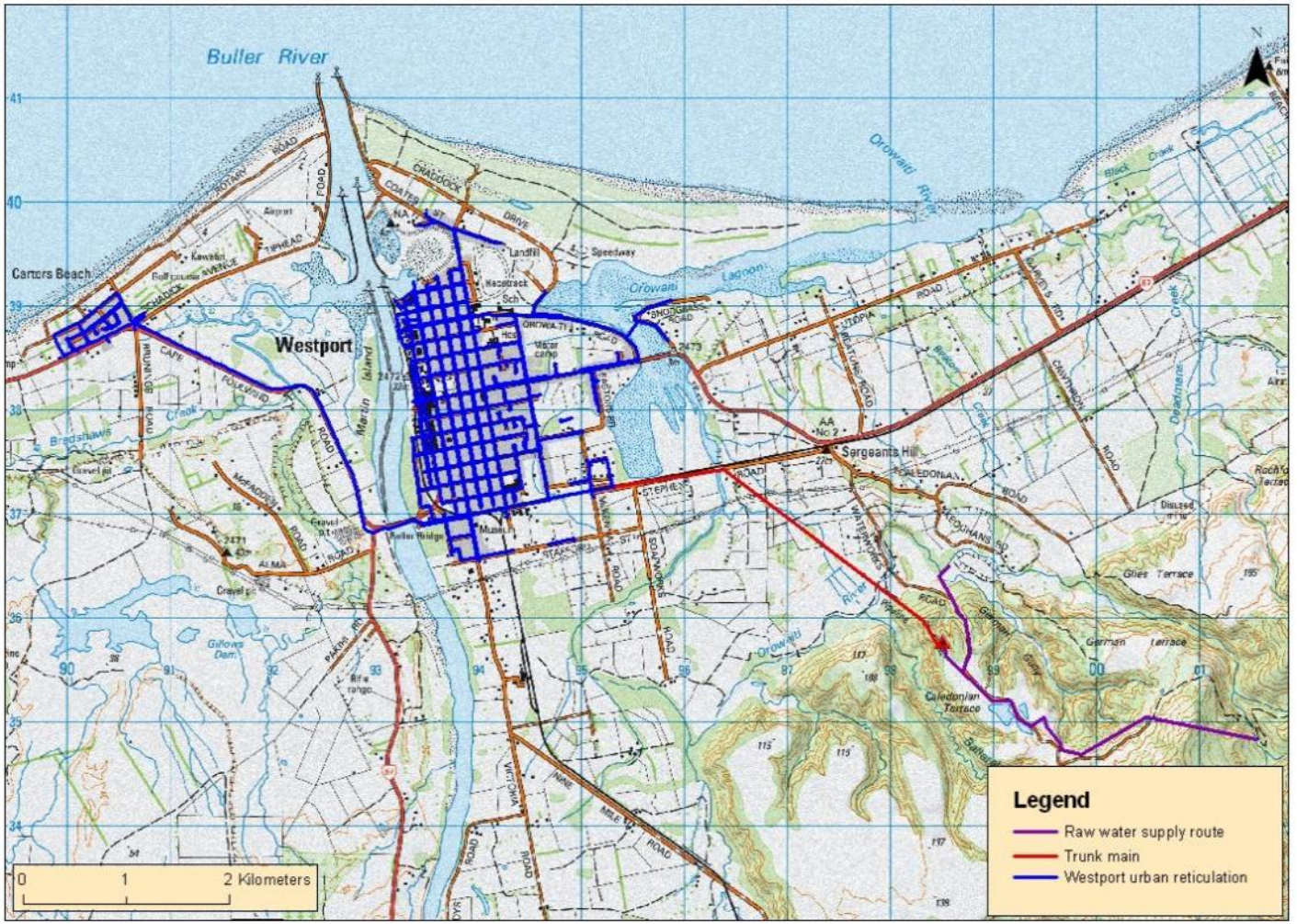
Introduction

- Westport drinking-water supply – A unique supply with unusual features
- Why is an upgrade needed?
- What will the upgrade consist of?

Westport Supply



Westport Supply

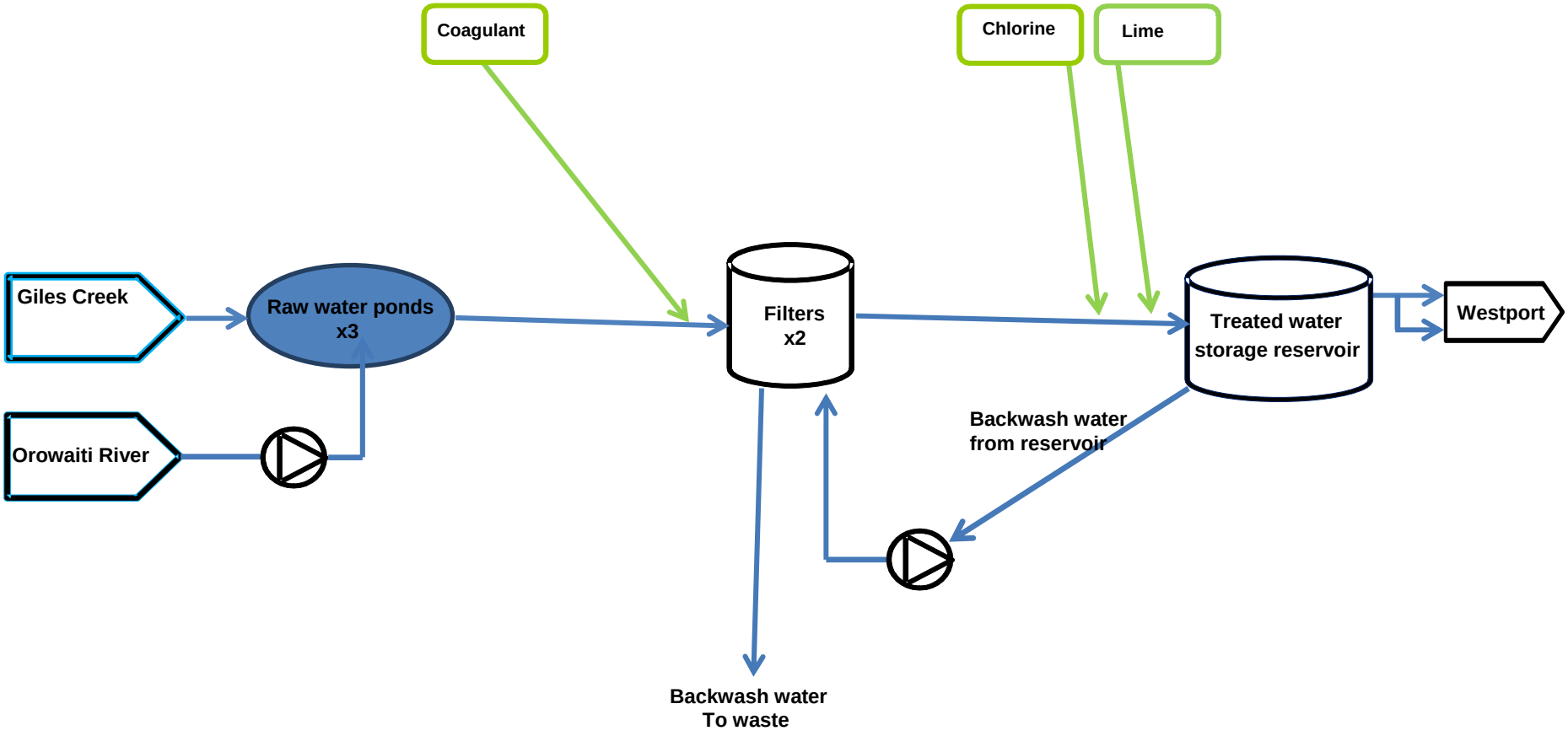


Westport Supply

Westport Supply

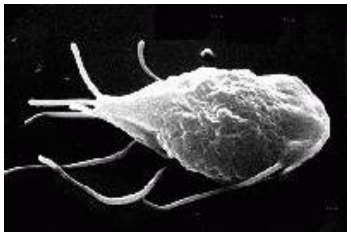
Westport Supply

Existing system

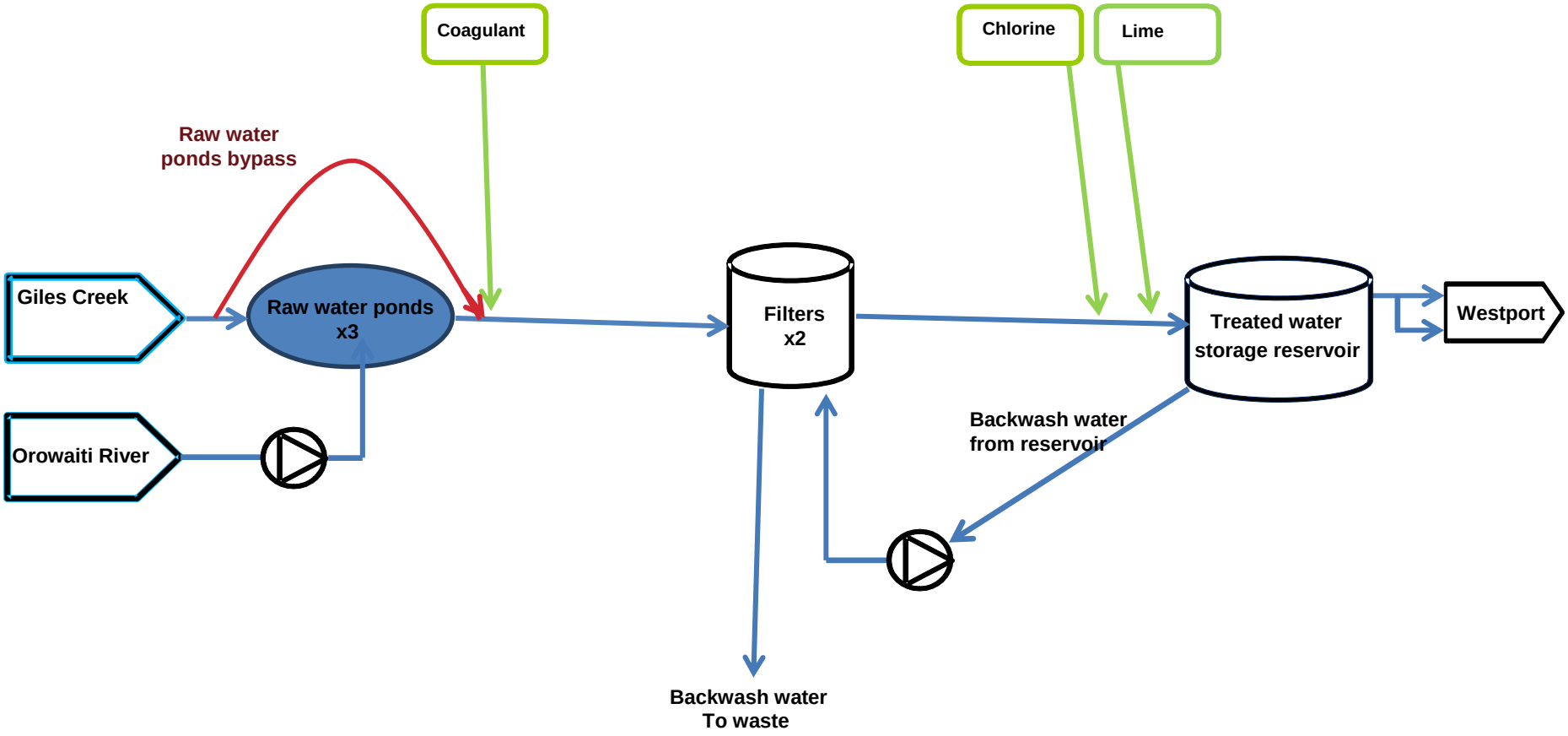


Why is an upgrade needed?

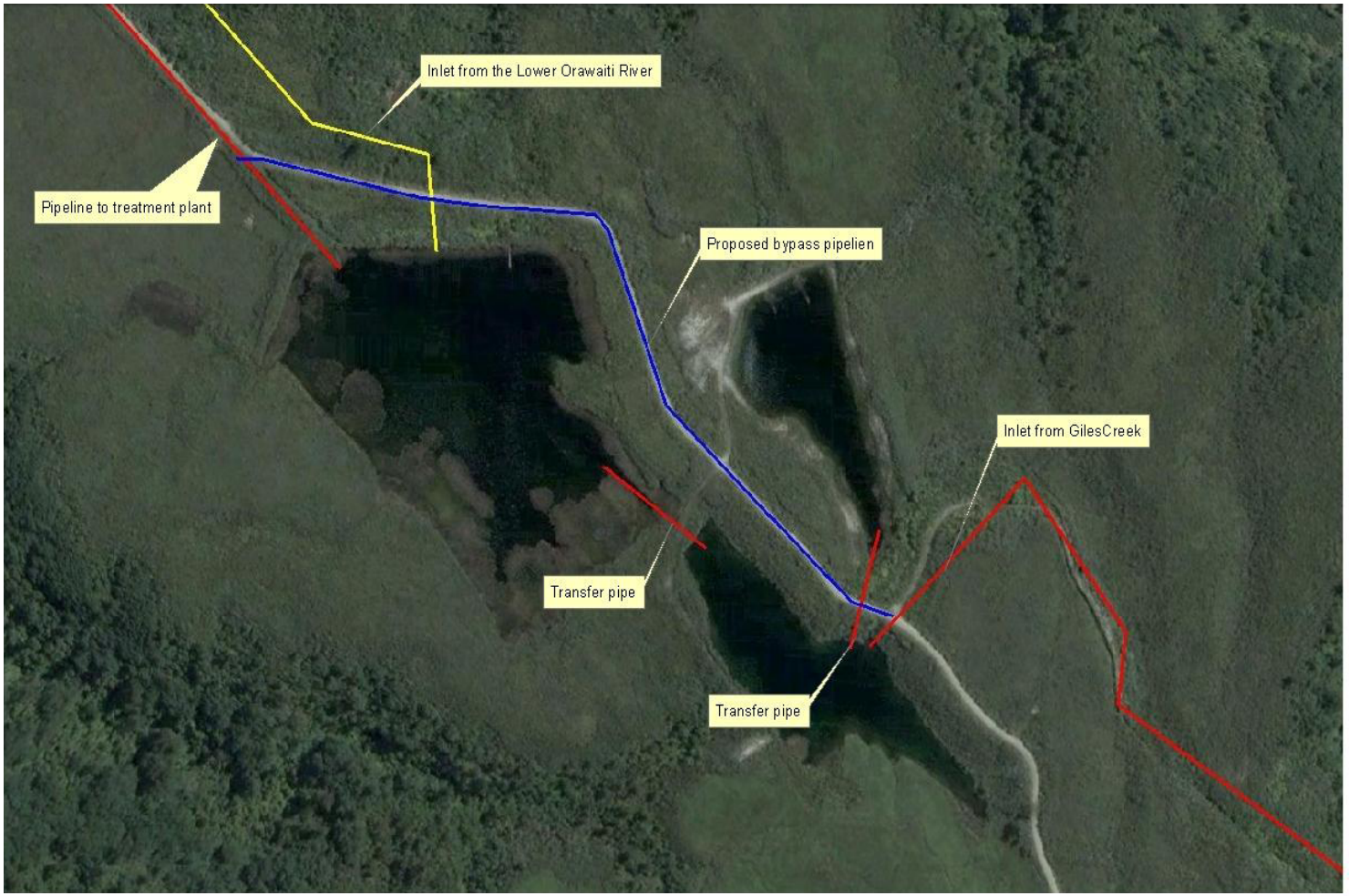
- There have been some problems with water quality from the treatment plant
- We know a lot more about water supply contaminants than we did in 1986
- Water treatment technology has improved considerably
- Legislation introduced in 2007
- Drinking water standards



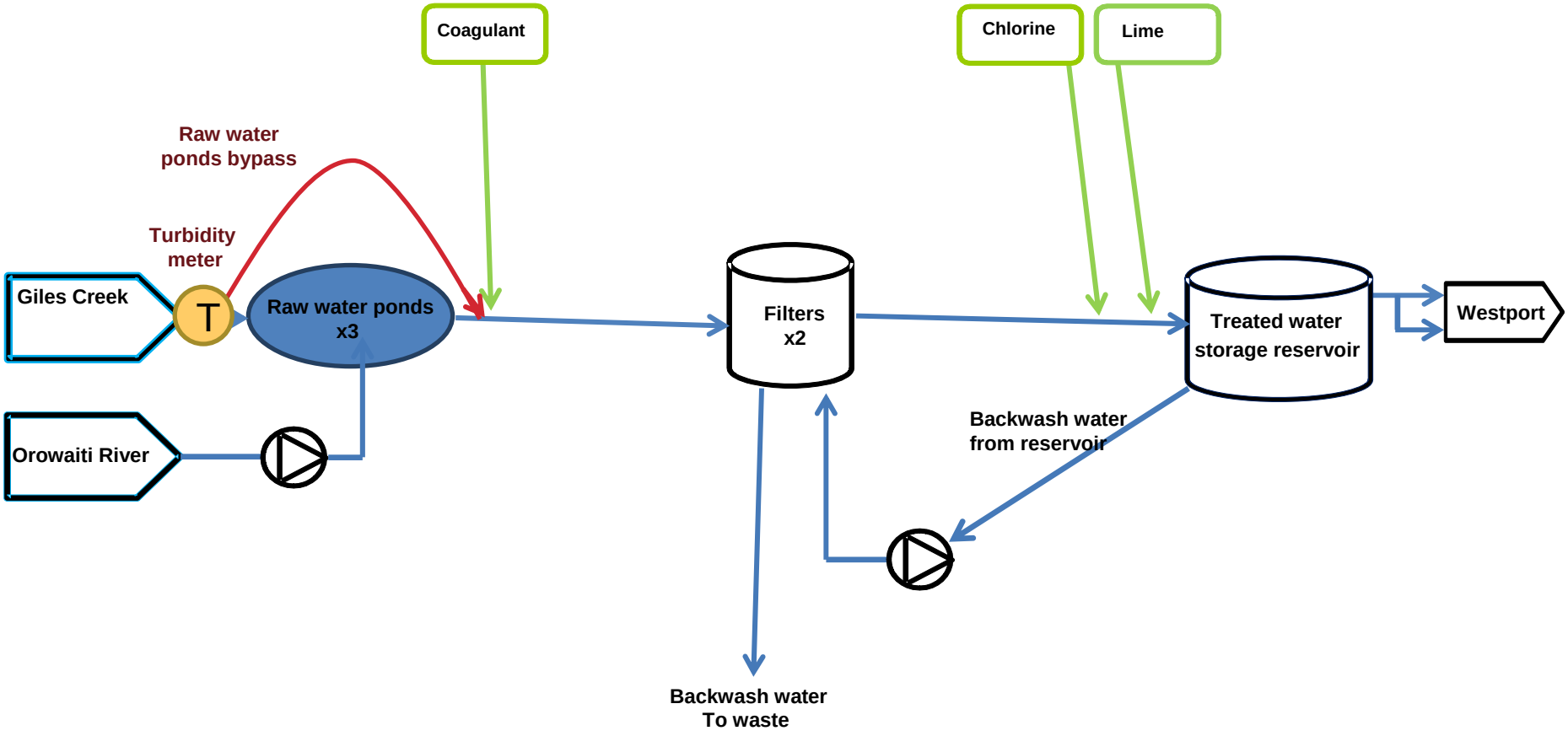
Raw water ponds bypass



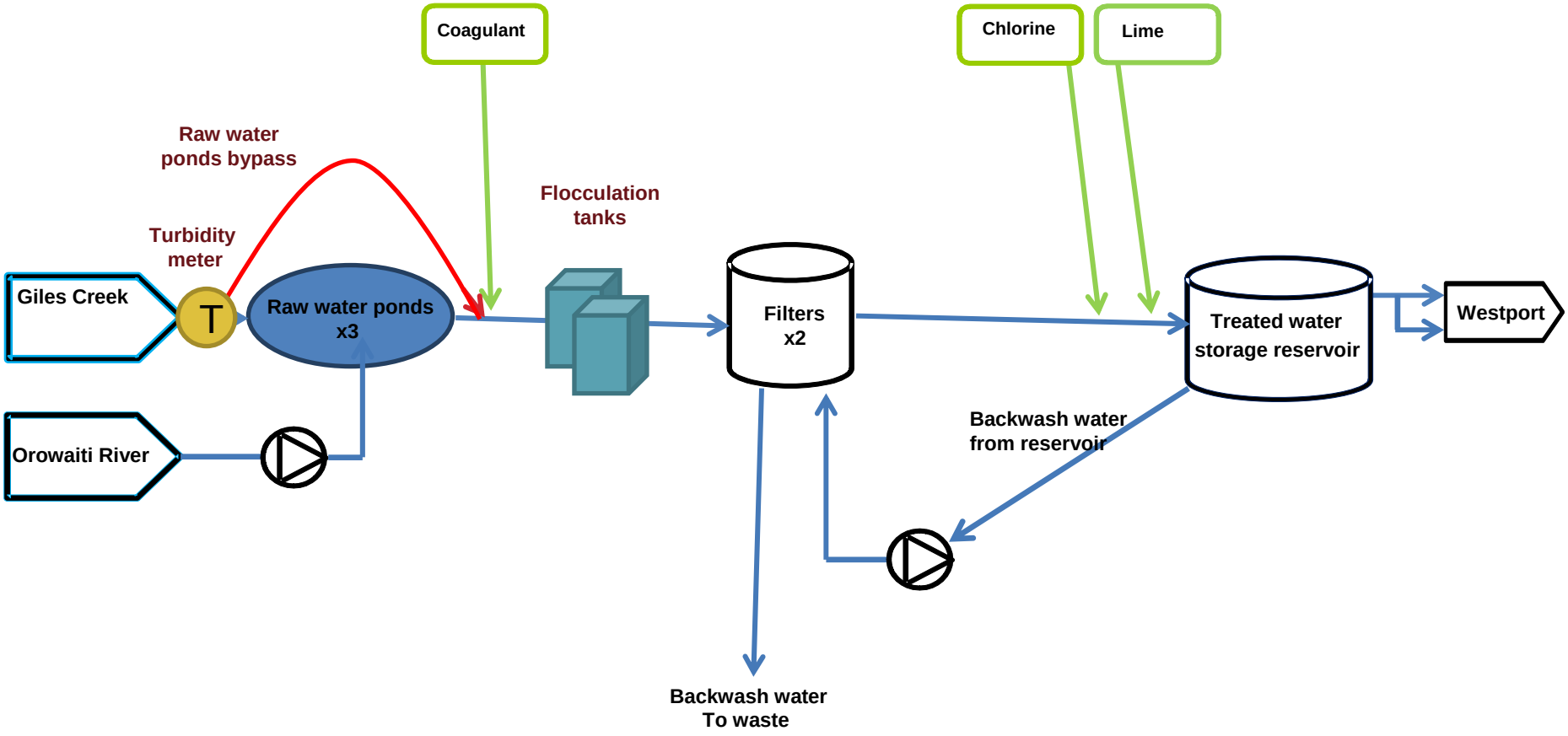
Raw water ponds by-pass



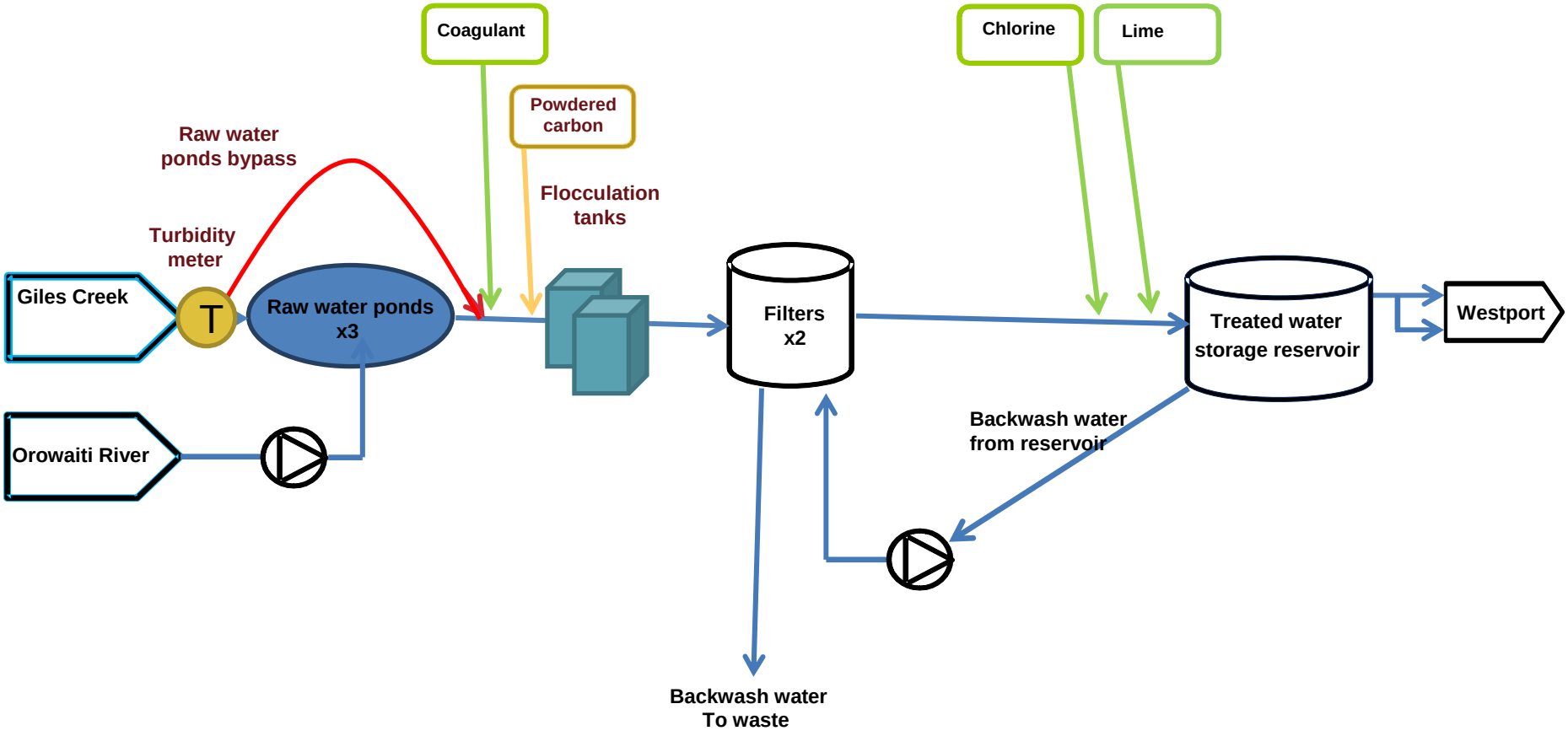
Turbidimeter



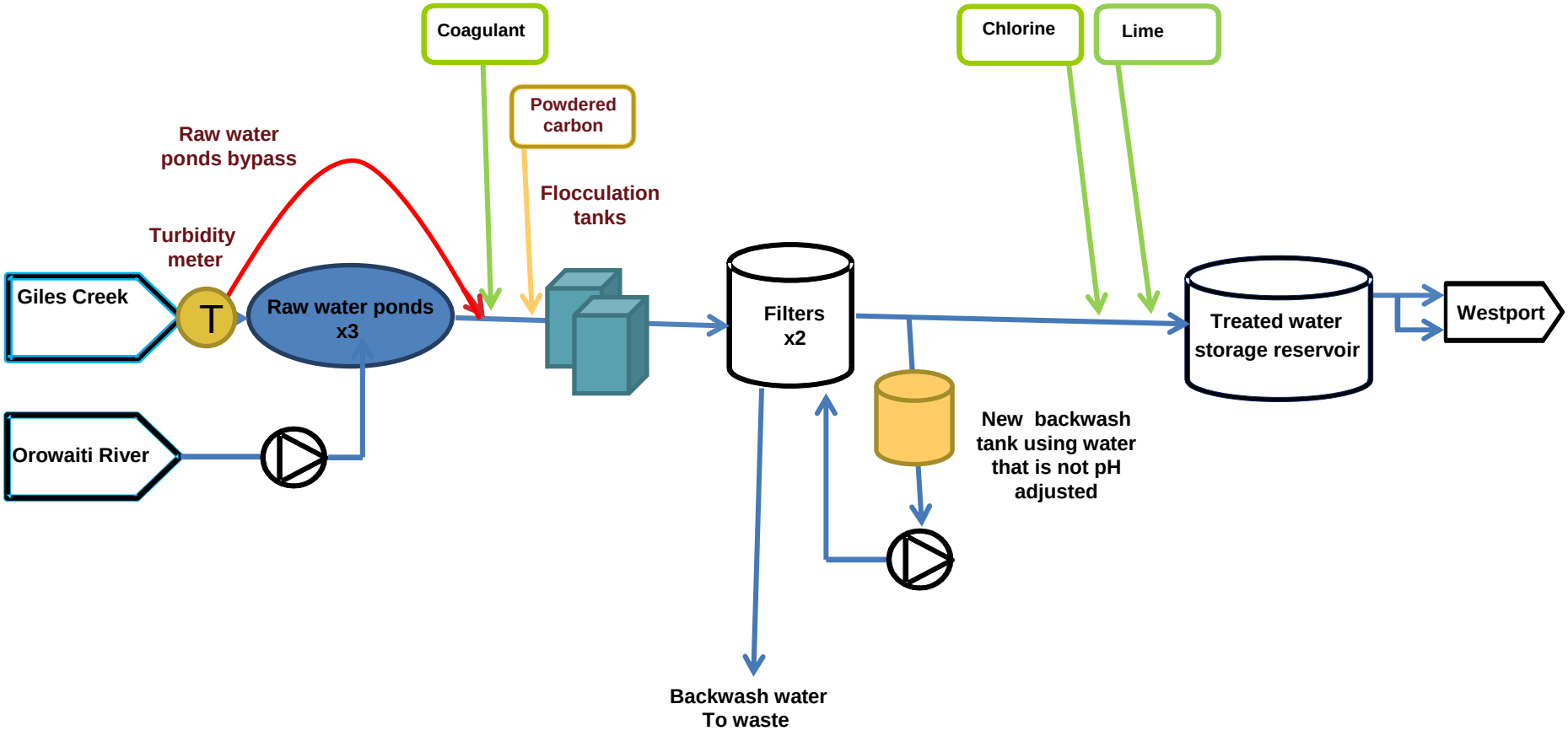
Flocculation tanks



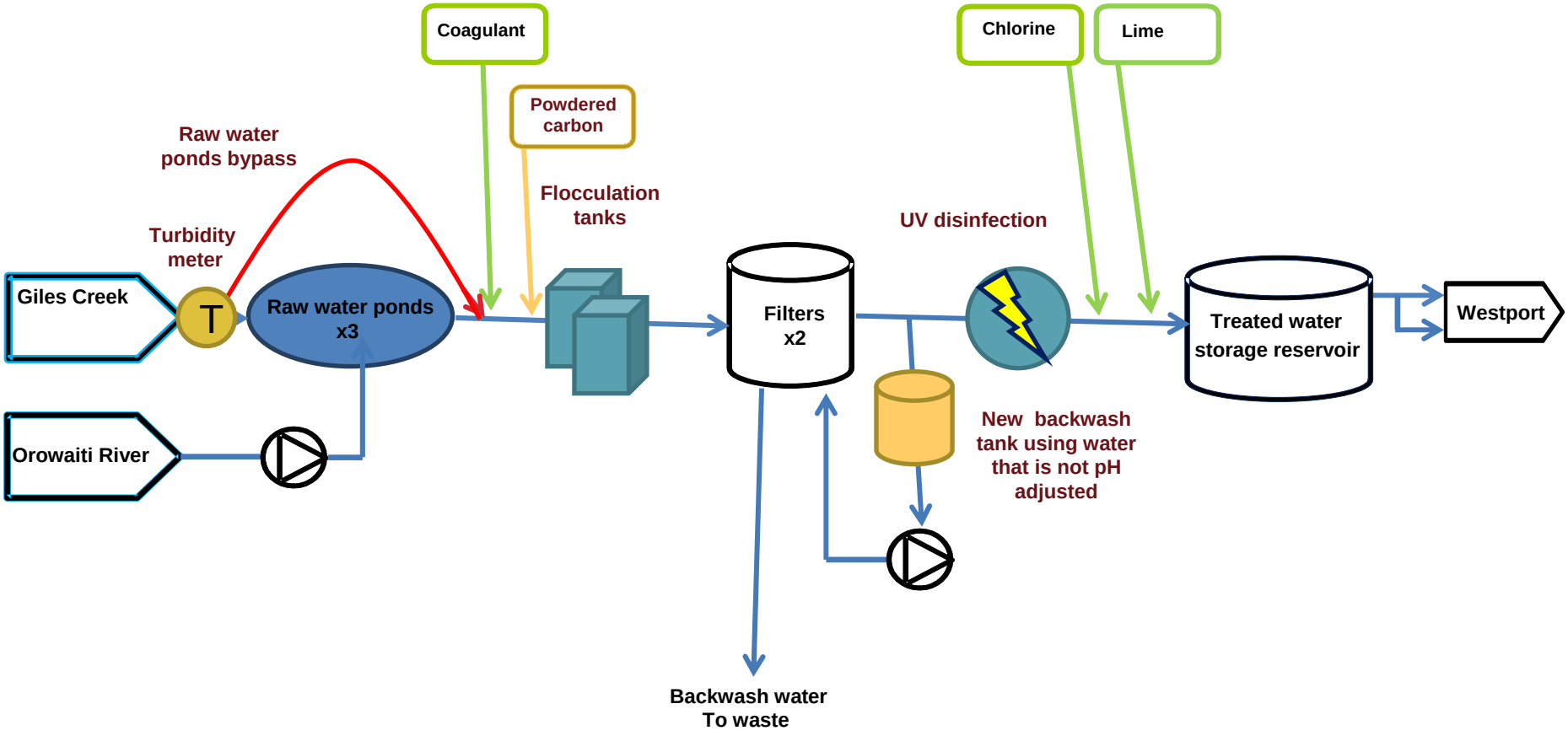
Powdered carbon



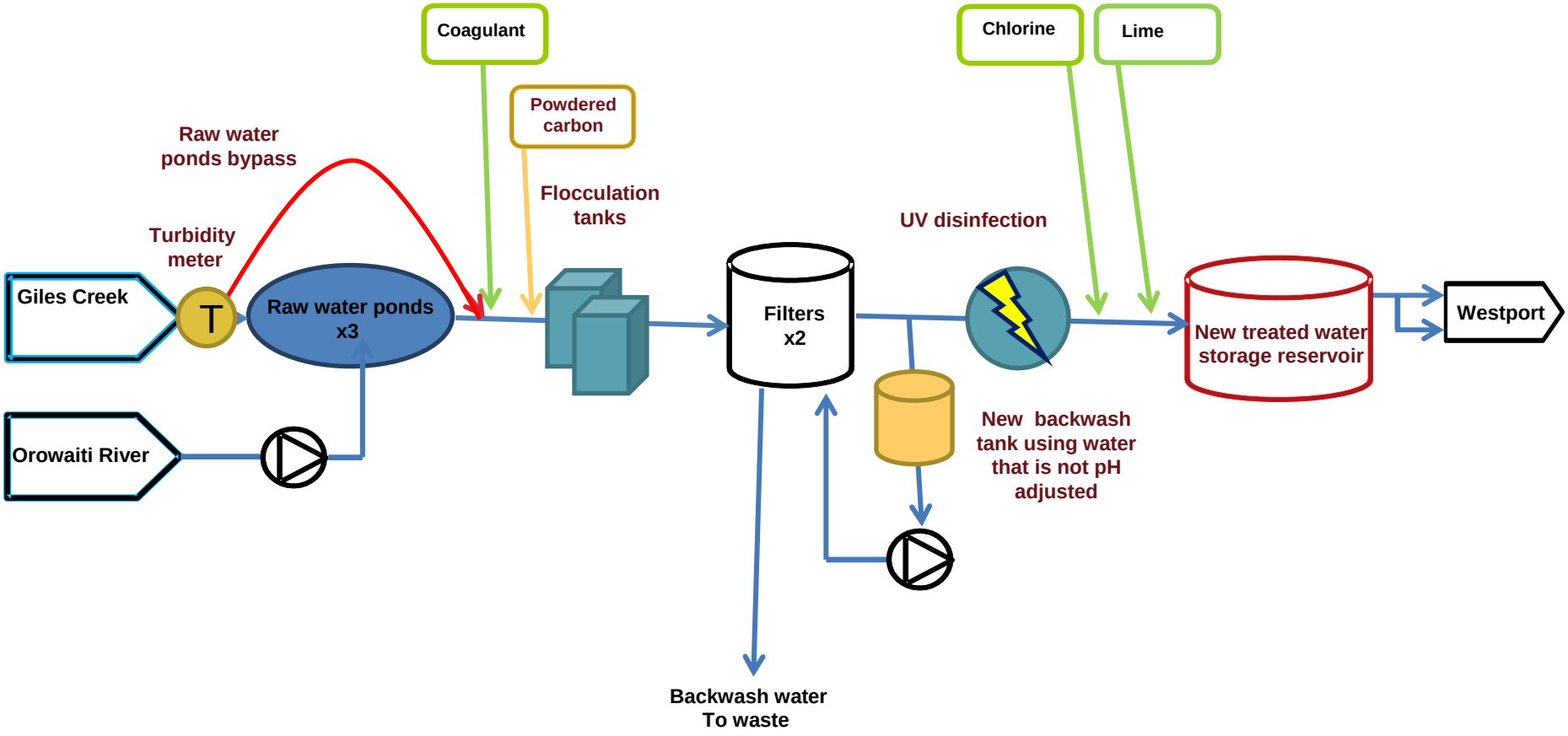
Filter backwash storage



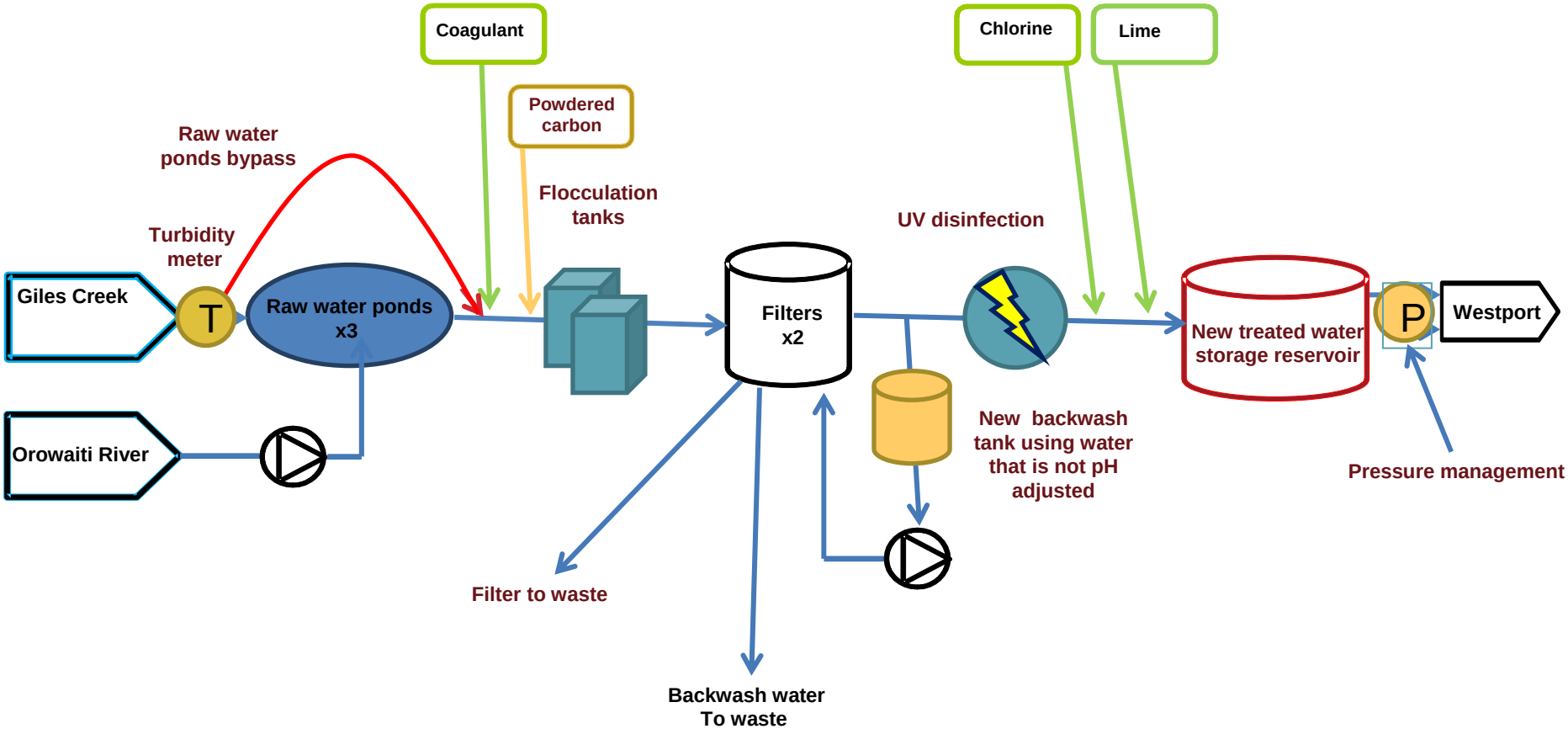
UV disinfection



New treated water storage reservoir



Filter to waste and pressure management



Upgrade consists of

- Raw water pond bypass
- Flocculation tanks
- Powdered carbon
- Backwash storage
- UV disinfection
- New treated water storage reservoir
- Filter to waste and pressure management

Timeframes

- Detailed design completed — April 2013
- Tenders evaluated — June 2013
- Construction begins — September 2013
- Bulk of works completed — September 2014

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Staged upgrade included in Long Term Plan

2012/13	$26,700	Planning, legal & property
	$130,000	Raw water quality management
	$700,000	Flocculation tanks
	$856,700	
2013/14	$521,000	Filter refurbishment Seismic strengthen
	$260,000	Filtered water back wash storage
	$170,000	Filter to waste system
	$951,000	
2014/15	$413,000	New plant building monitoring & control
	$393,500	UV disinfection & buildings
	$215,000	Alkalinity correction system
	$375,000	By Pass raw water ponds
	$1,396,500	

2016/17	$1,350,000	Enlarge raw water ponds
2018/19	$1,500,000	Pipe rest of tunnels
2020/21	$2,887,000	Replace trunk main
2022/23	$2,400,000	Construct treated water reservoirs
2023/24	$610,000	Line raw water reservoirs
	$11,951,200	Cost estimated in 2012 $
	$14,670,329	Cost in LTP adjusted for inflation (BERL Factors)
	$2,719,129	Inflation

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Financial Impact

Three options:

1. Full upgrade at a cost of $10.3 million defers tunnel piping & lining raw water reservoirs.
2. Part upgrade at a cost of $8.9 million as above but also defers cleaning ot raw water reservoirs
3. Minimum upgrade at a cost of $5.8 million as above but also defers replacing trunk main.

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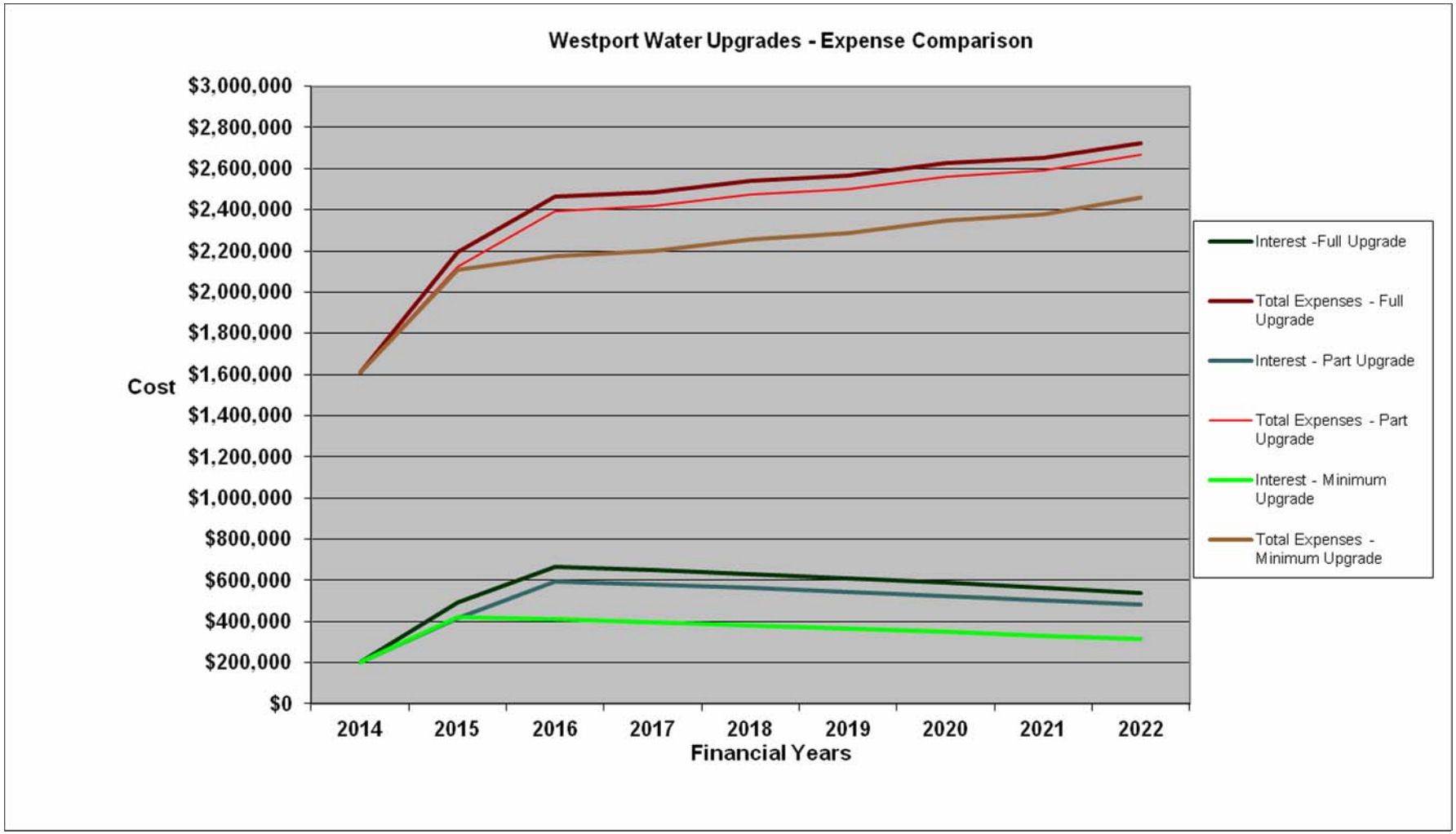
Upgrade Expense Comparison



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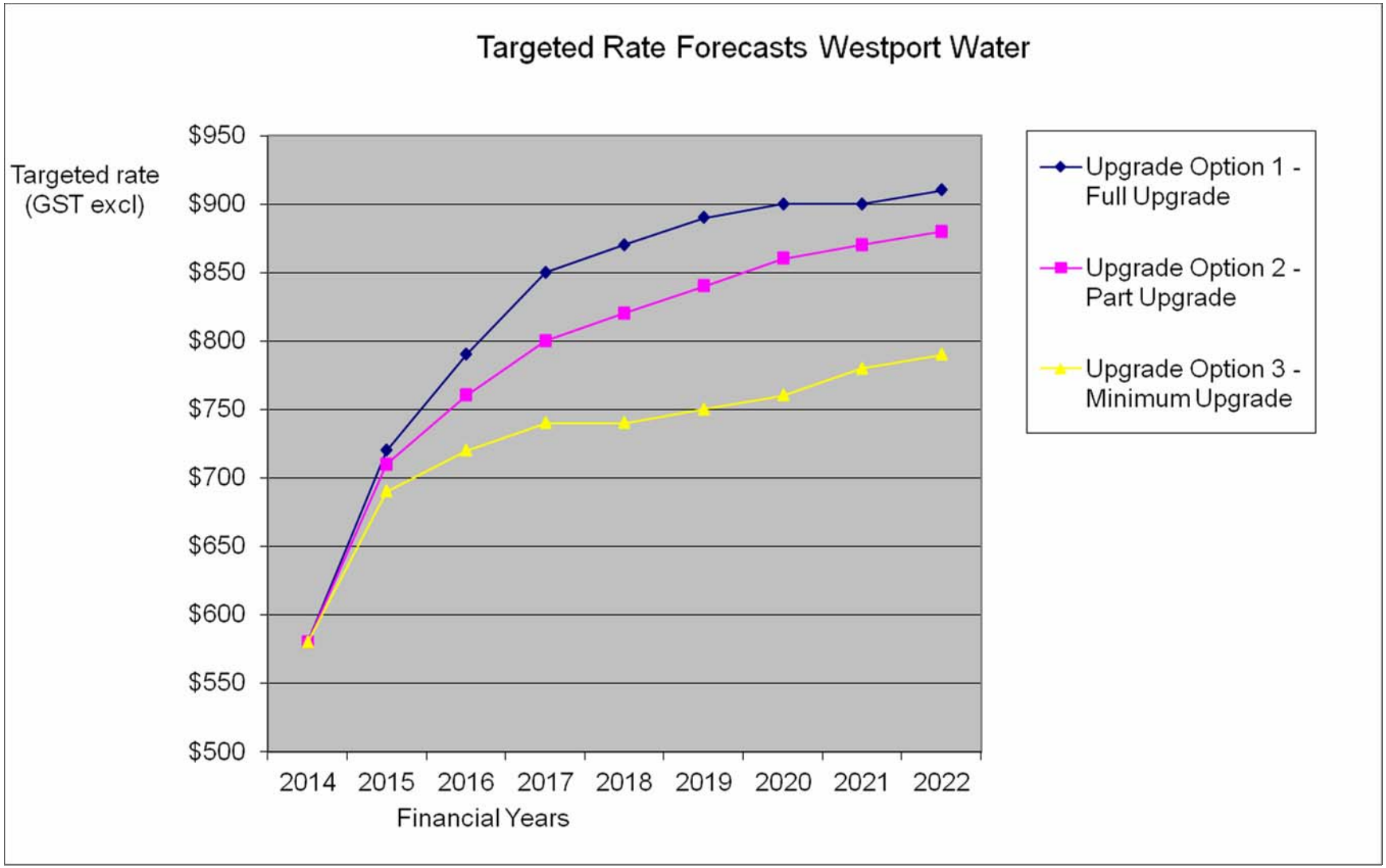
Effect on Westport Targeted Rates



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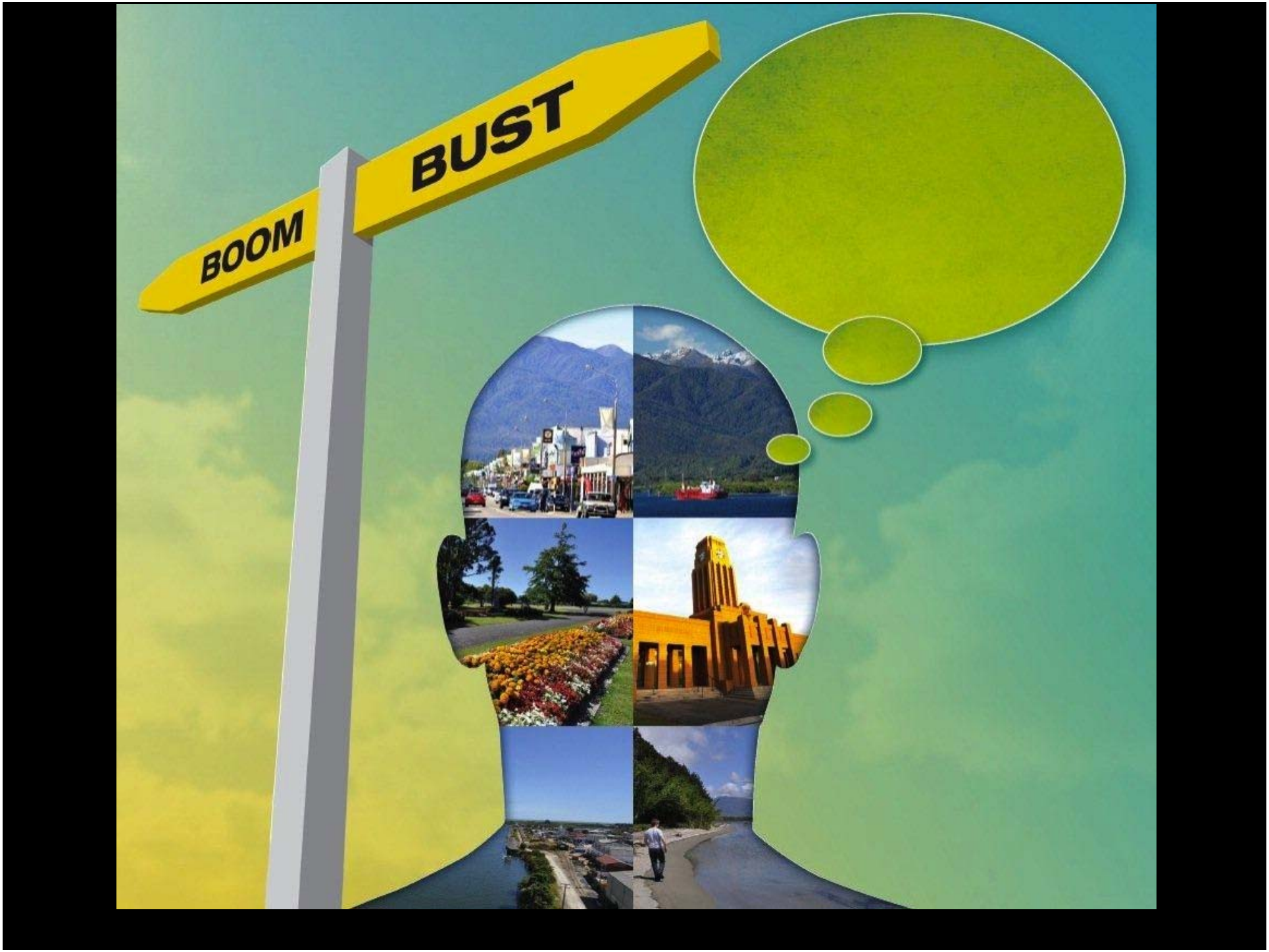
Effect on Westport Targeted Rates

Westport Targeted Rates (GST Exclusive)

	2014	2015	2016	2017	2018	2019	2020	2021	2022
Full Upgrade	$580	$720	$790	$850	$870	$890	$900	$900	$910
Part Upgrade	$580	$710	$760	$800	$820	$840	$860	$870	$880
Minimum Upgrade	$580	$690	$720	$740	$740	$750	$760	$780	$790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