Western Isthmus Water Quality Improvement Programme

Delivering water quality outcomes in an increasingly challenging economic environment

September 2022

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Te Kaunihera o Tāmaki Makaurau

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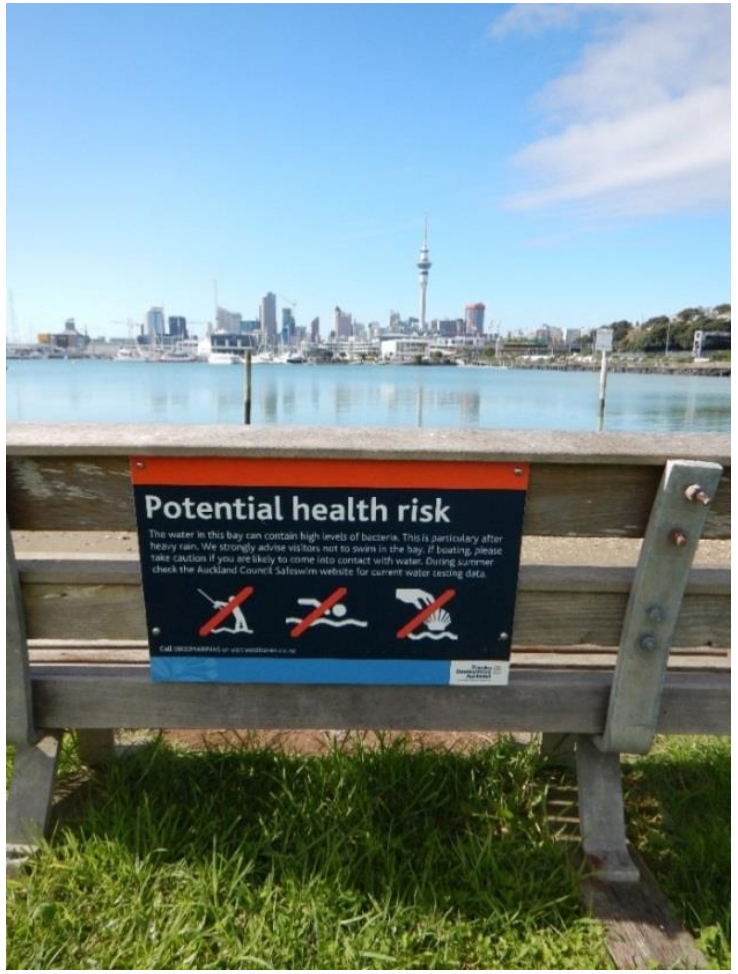
Western Isthmus Water Quality Improvement Programme (WIWQIP)

A joint Watercare and Auckland Council integrated water quality improvement programme for the western isthmus:

- established in 2017
- aim to reduce wet weather overflows and improve water quality at local beaches
- enables growth
- demonstrates commitment to improving water quality in the city with the oldest combined networks
- optimises existing infrastructure
- complies with resource consents including the Māngere Wastewater Treatment Plant discharge consent



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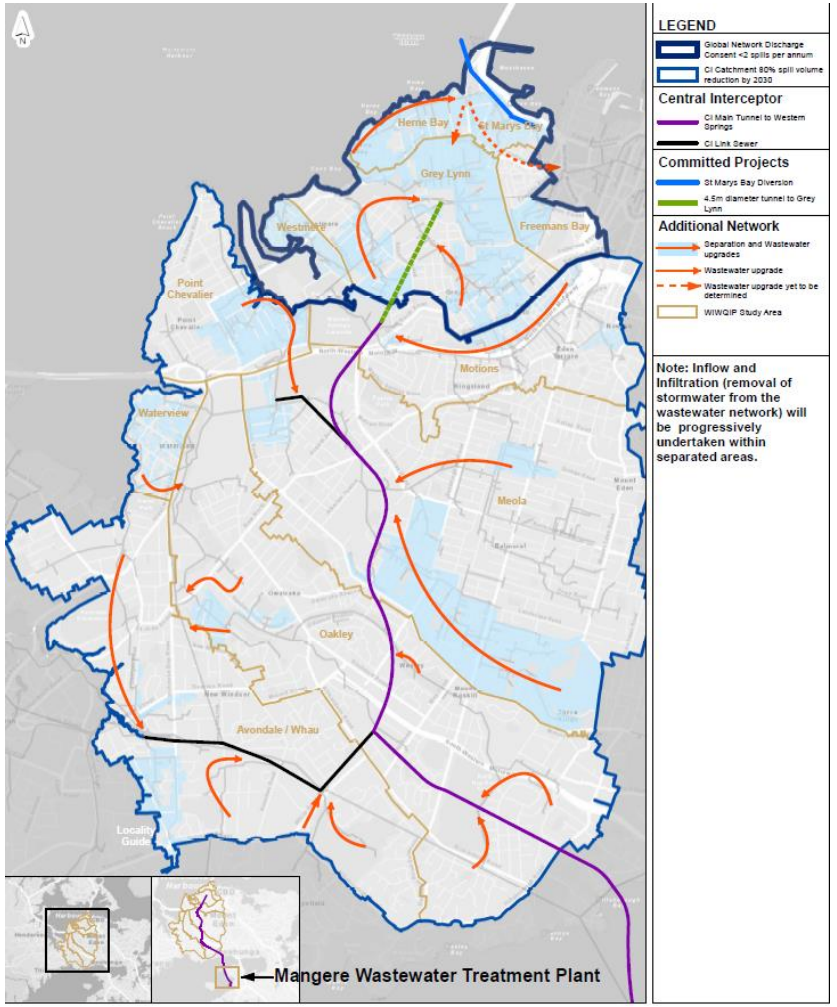
WIWQIP – Programme of work

- Central Interceptor extension from Western Springs through to Grey Lynn (completion expected 2027)
- New local wastewater infrastructure to enable growth
- New stormwater enhancements to enable separation as required in combined drainage areas
- In areas where stormwater networks exist, separation of properties that have combined drainage to gain early benefits
- A catchment-by-catchment business case approach
- Funding in Long-Term Plan and forecast in Watercare Asset Management Plan
- Total cost $1.825 billion (2017 dollars)
  - Watercare cost $1.5 billion (includes CI)
  - Auckland Council $325 million



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What has changed?

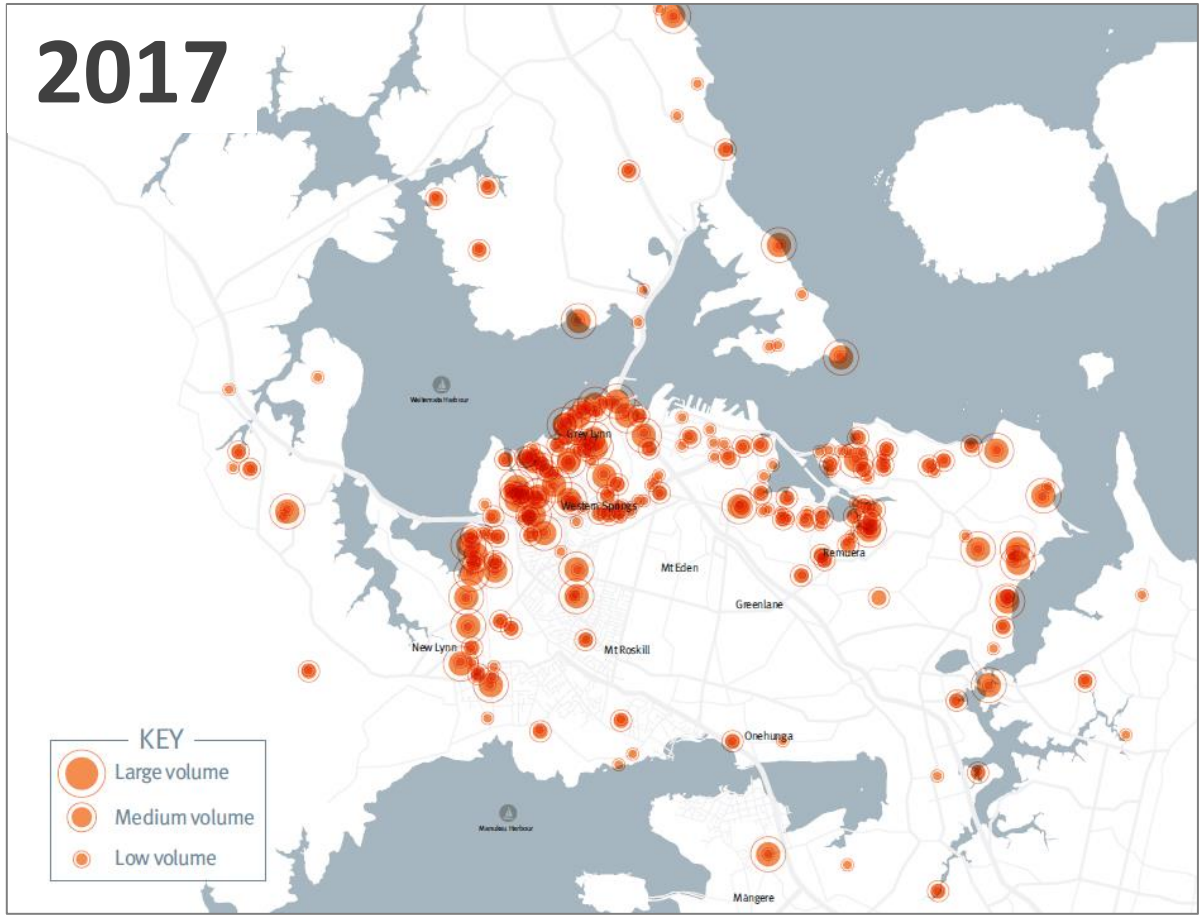
- Covid 19 delays
- Supply chain issues
- Inflationary pressure on commodities
- Construction labour costs increasing and shortage of specialists
- Design development – more detail and have greater understanding
- Significant funding deficit across the programme.

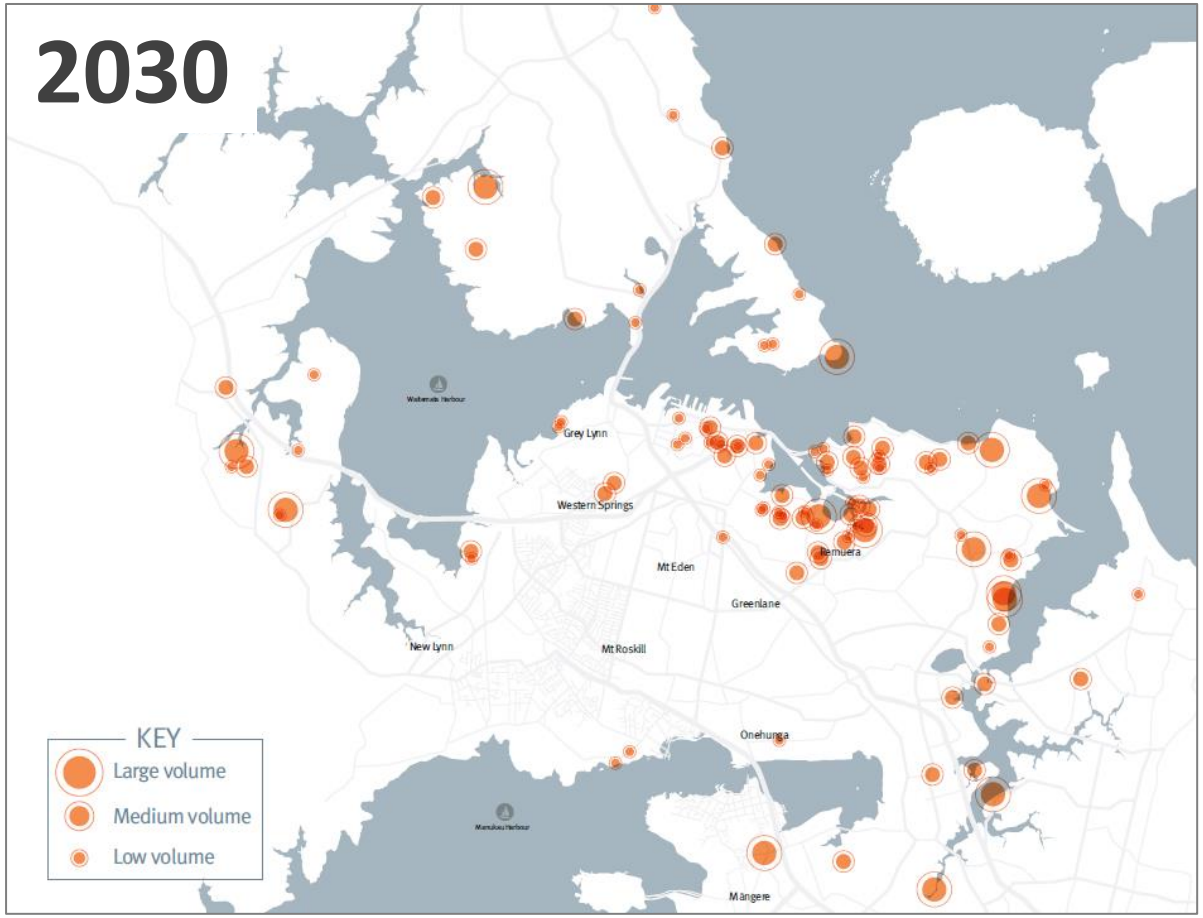
Between August 2020 and February 2022, cost of …	Why?
Supply steel reinforcing bar has increased by **74%**	Due to increase in steel and transport prices.
Concrete including pipes has increased by **19%**	Due to increases in shipping and road transport costs.
HDPE pipe has increased by **38%**	Due to increase in crude oil and transport prices.
Concrete lined steel pipes has increased by **75%**	Due to increases in steel (HRC) and most other inputs.
Electrical equipment has increased by **24%**	Due to a 33% increase in copper and aluminium prices from Aug 2020 to July 2021.

The challenge

- How do we deliver the same or better water quality outcomes within budget and within reasonable timeframes?

Wastewater Network Performance





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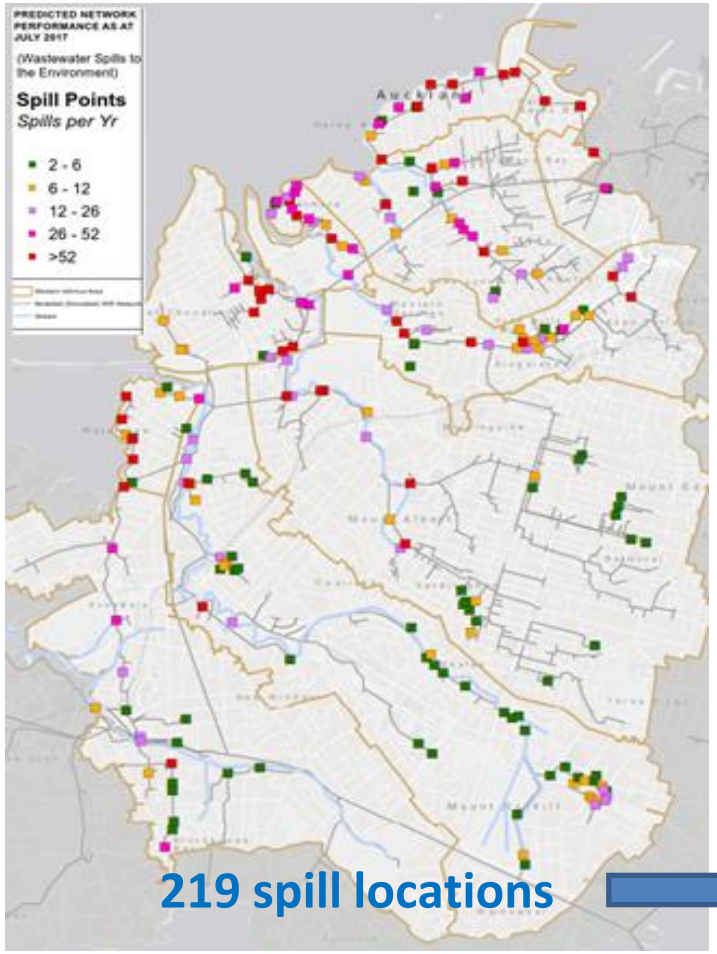
Western Isthmus: 10-year Programme Objectives to 2028

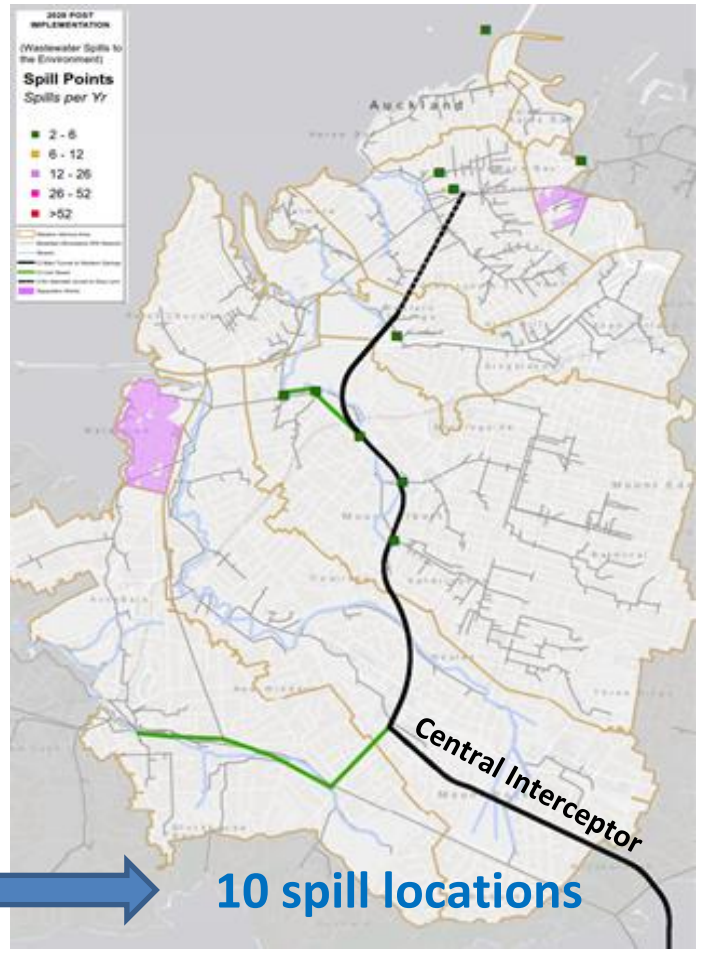
- Committed separation works
- Separation projects before 2028
- Separation projects after 2028
- Catchments under review

Network Overflow Performance (2018)



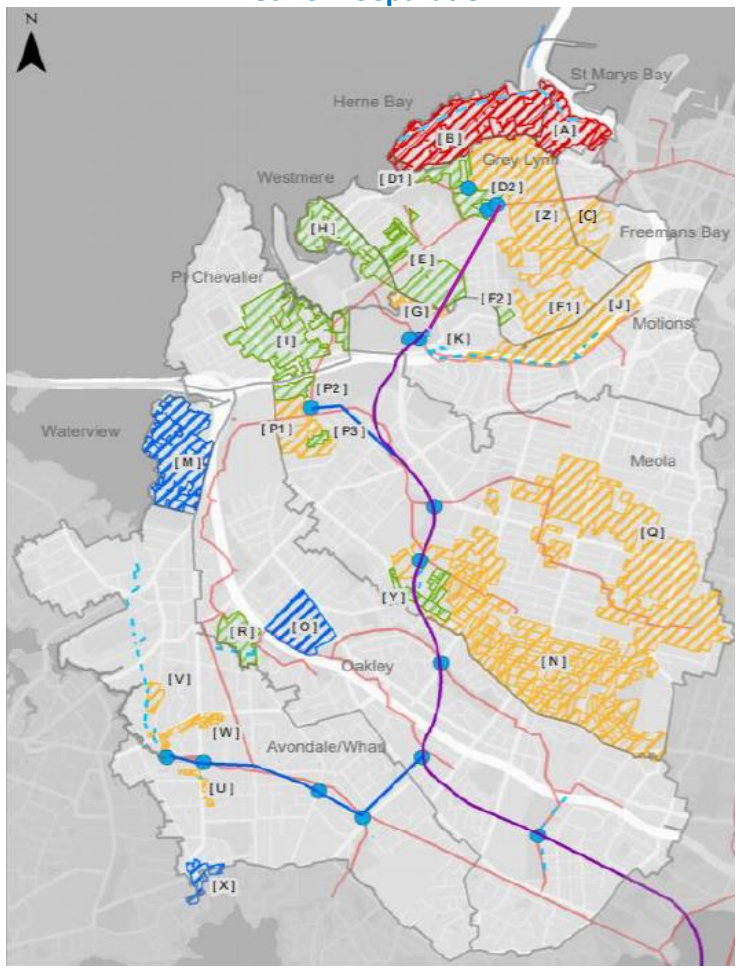
219 spill locations

Network Overflow Performance (2028)



10 spill locations

Network Separation



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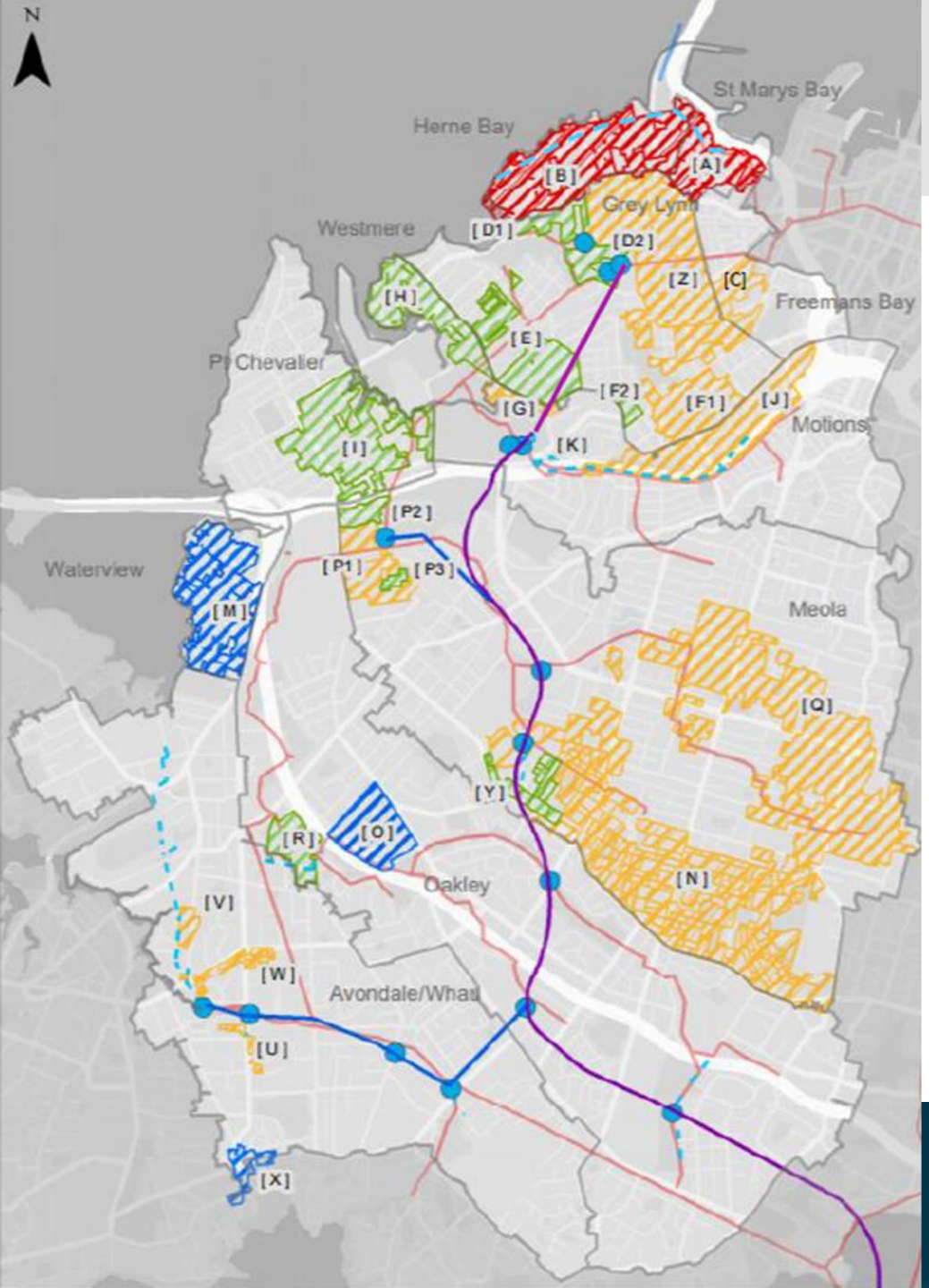
Early Strategy



- 4911 properties to be separated across WIWQIP
- 2017 Design peak flow into the Central Interceptor was 56m³/s

Committed separation works
Separation projects before 2028
Separation projects after 2028
Catchments under review

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Learning from separation so far

- Investigations require lots of detail.
- Construction is very disruptive.
- Needs revalidation and ongoing monitoring.
- We are still fixing areas separated in the 1990s.
- Wastewater upgrades cannot be confirmed until sometime after separation is completed.
- It can take longer than you think.

Best Practical Strategy

- What's different?
- Separate up to 3841 properties where connection to the Central Interceptor will not address local spill performance.
- We will still need to upgrade the Wastewater network.

Central Interceptor
Developed options
Conceptual options

- The peak flows to the Central Interceptor are still 11% less than initially designed.
- Infrastructure prepares the isthmus better for growth.
- Will achieve the outcomes within the WIWQIP timeframe.

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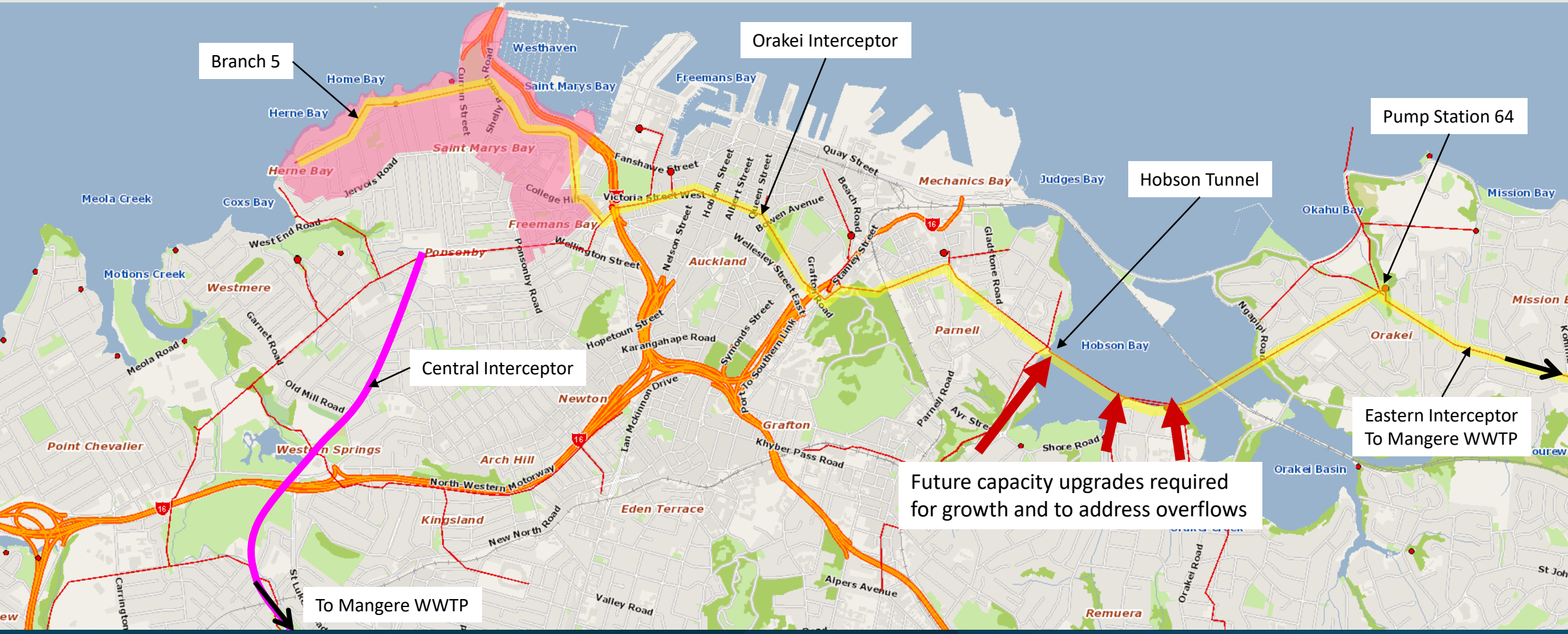
St Marys and Herne Bay - Overview of Existing Network and Issues

Network Capacity Constraints



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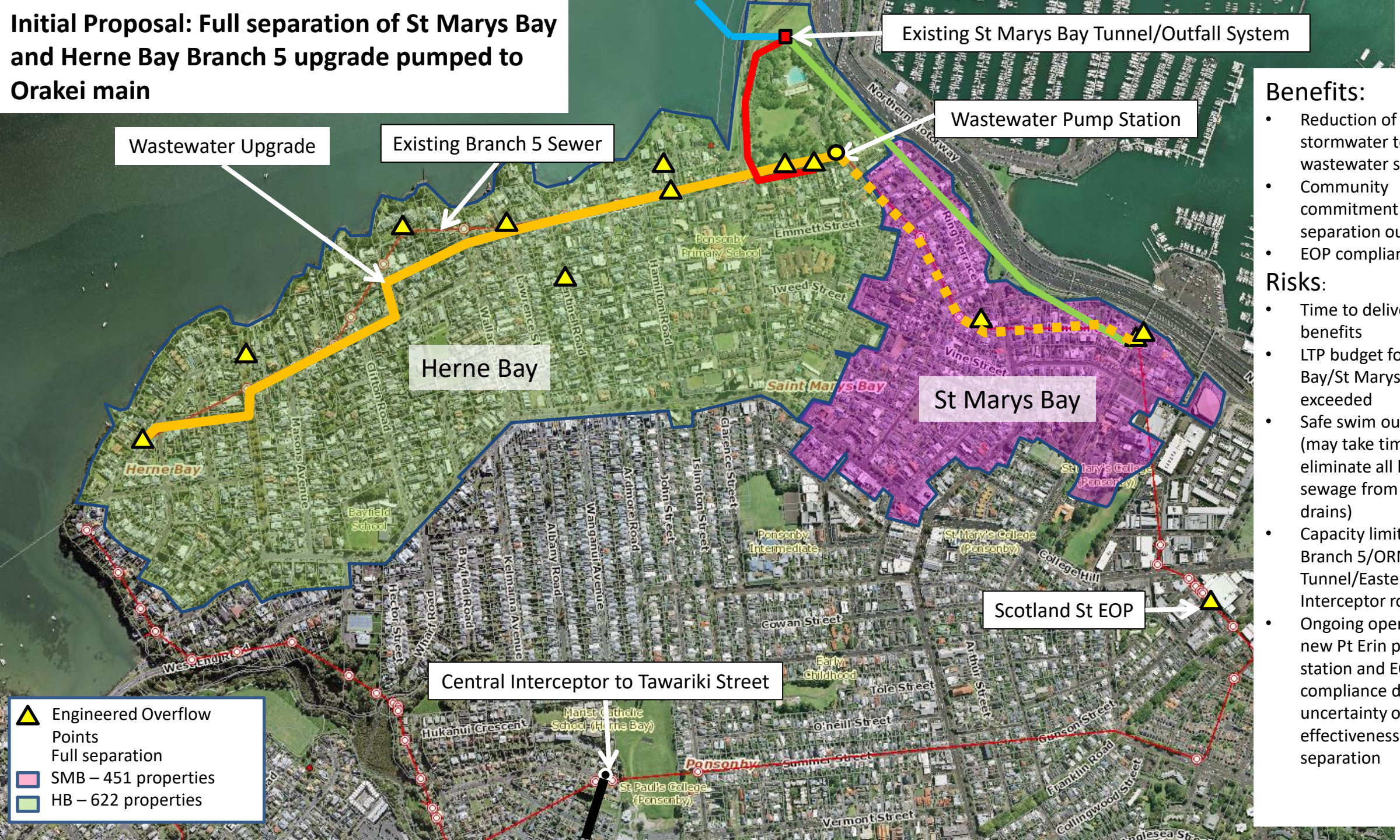
Initial Proposal: Full separation of St Marys Bay and Herne Bay Branch 5 upgrade pumped to Orakei main



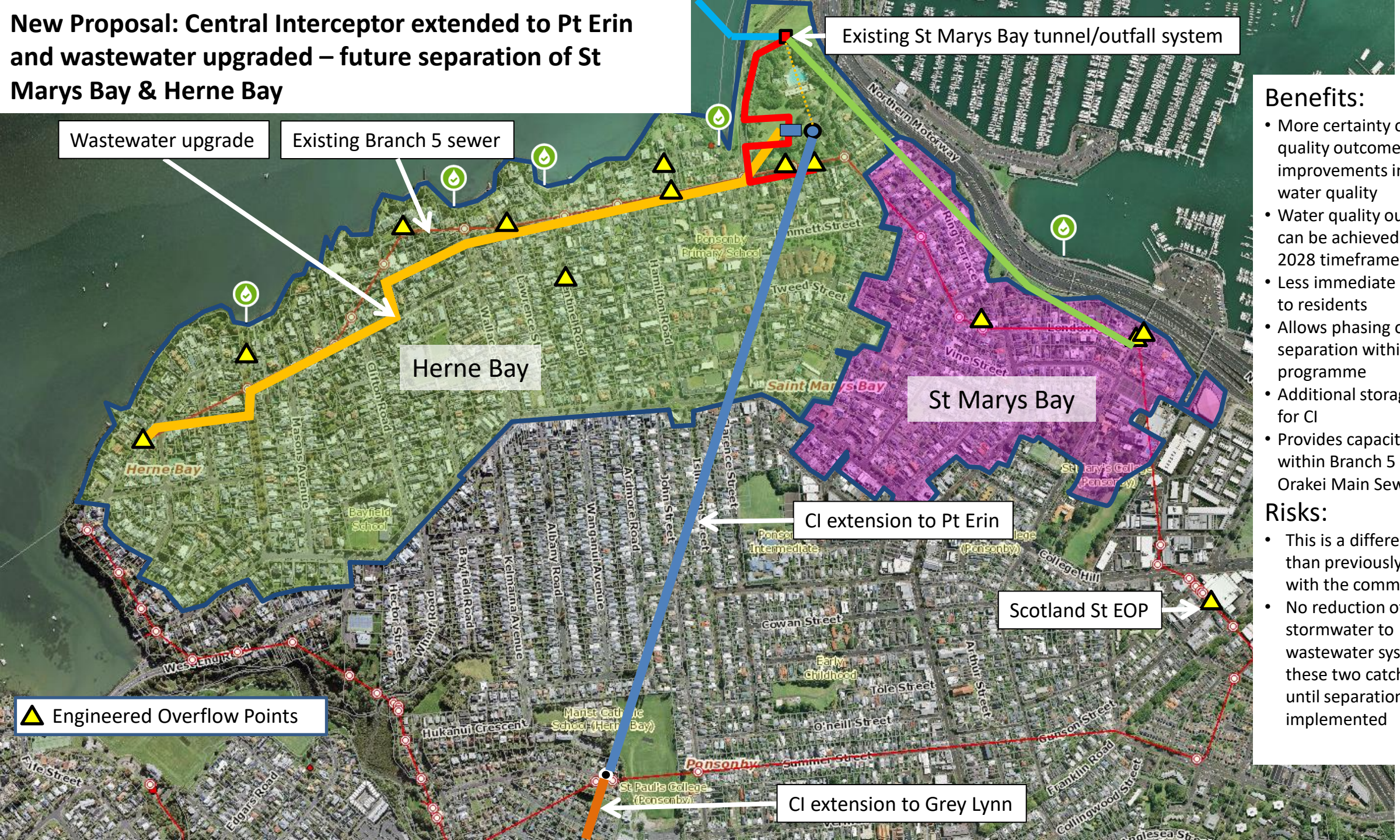
Benefits:

- Reduction of stormwater to wastewater systems
- Community commitment of separation outcomes
- EOP compliance

Risks:

- Time to deliver full benefits
- LTP budget for Herne Bay/St Marys Bay exceeded
- Safe swim outcomes (may take time to eliminate all human sewage from storm drains)
- Capacity limits along Branch 5/ORM/Hobson Tunnel/Eastern Interceptor route
- Ongoing operation of new Pt Erin pump station and EOP compliance due to uncertainty of effectiveness of separation

New Proposal: Central Interceptor extended to Pt Erin and wastewater upgraded – future separation of St Marys Bay & Herne Bay



Benefits:

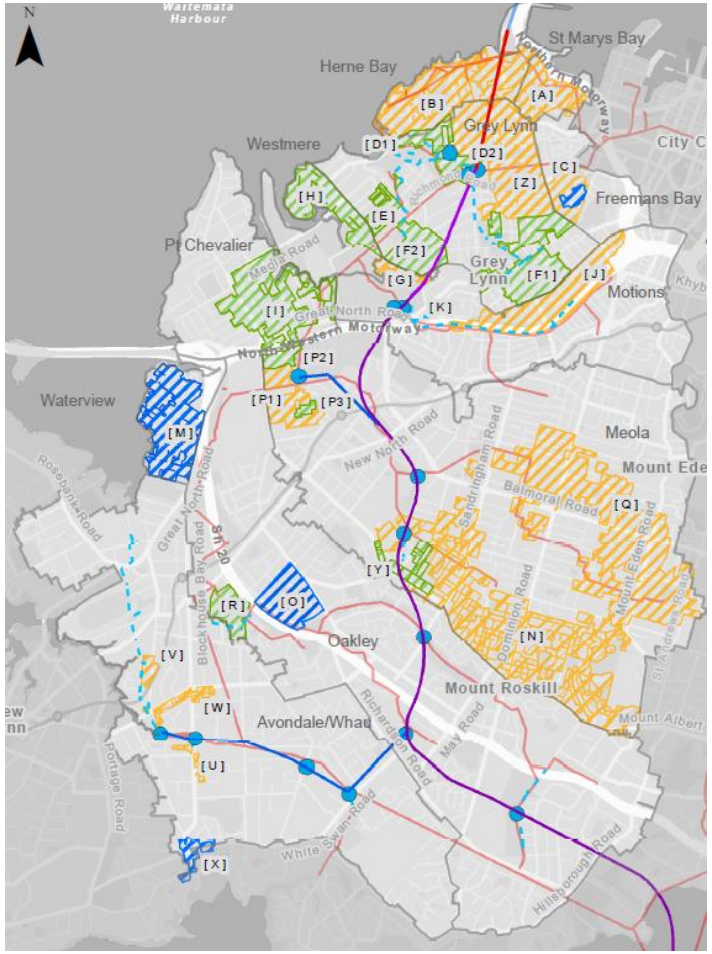
- More certainty of water quality outcomes and improvements in beach water quality
- Water quality outcomes can be achieved within 2028 timeframe.
- Less immediate disruption to residents
- Allows phasing of separation within the programme
- Additional storage capacity for CI
- Provides capacity recovery within Branch 5 and the Orakei Main Sewer

Risks:

- This is a different solution than previously agreed with the community
- No reduction of stormwater to wastewater systems from these two catchments until separation implemented

Future separation – Post 2028

- Pre-2028: separation of areas **not** connected to the Central Interceptor
  - 100% separation, including all private drainage, is required to meet NDC targets
- Post-2028:
  - Under the revised proposal NDC compliance is achieved by connection to the Central Interceptor
  - Ongoing separation programme will be necessary to meet operational volume reduction targets
  - 100% separation of any one area is no longer required
  - This allows for **phased** separation
  - Select sub-catchments for separation based on:
    - Best volume reduction for the investment
    - Provision of network to service growth
  - Provide public **stormwater** network initially, connecting all private properties separated to boundary.
  - Works on private property, only as required to meet operational or NDC targets
  - Works programme likely to take place across multiple suburbs within the Central Interceptor catchment



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Thank you

Any feedback?

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