Western Isthmus Water Quality Improvement Programme

Delivering water quality outcomes in an increasingly challenging economic environment

June 2022

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Te Kaunihera o Tāmaki Makaurau

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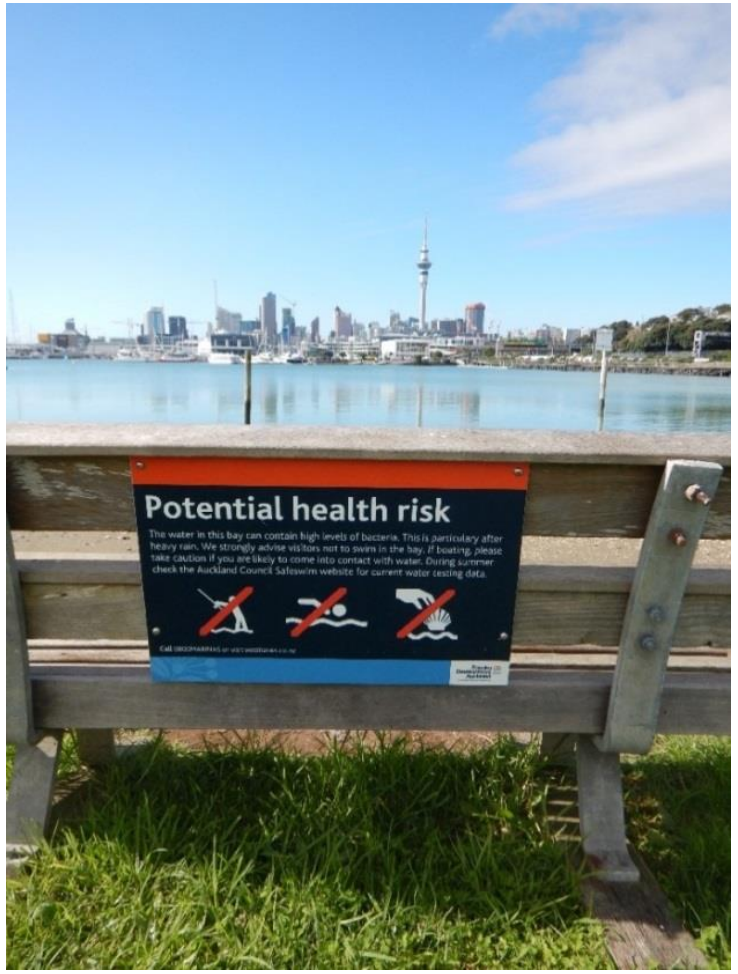
Western Isthmus Water Quality Improvement Programme (WIWQIP)

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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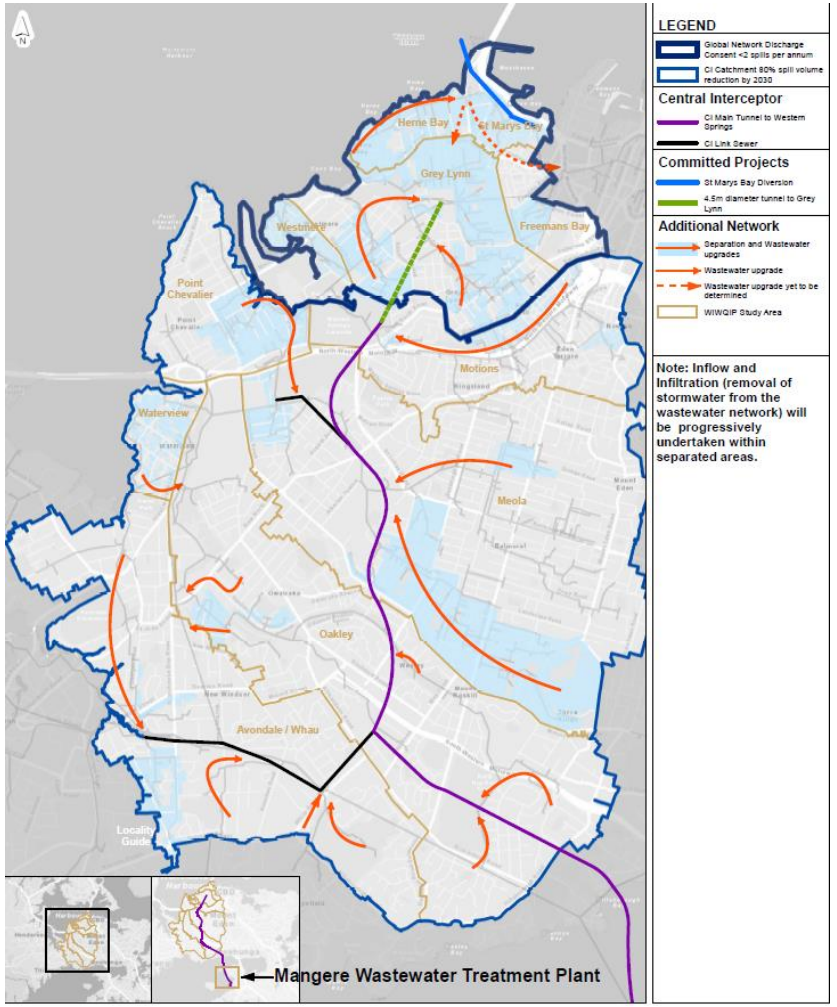
WIWQIP – Programme of work

- 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?

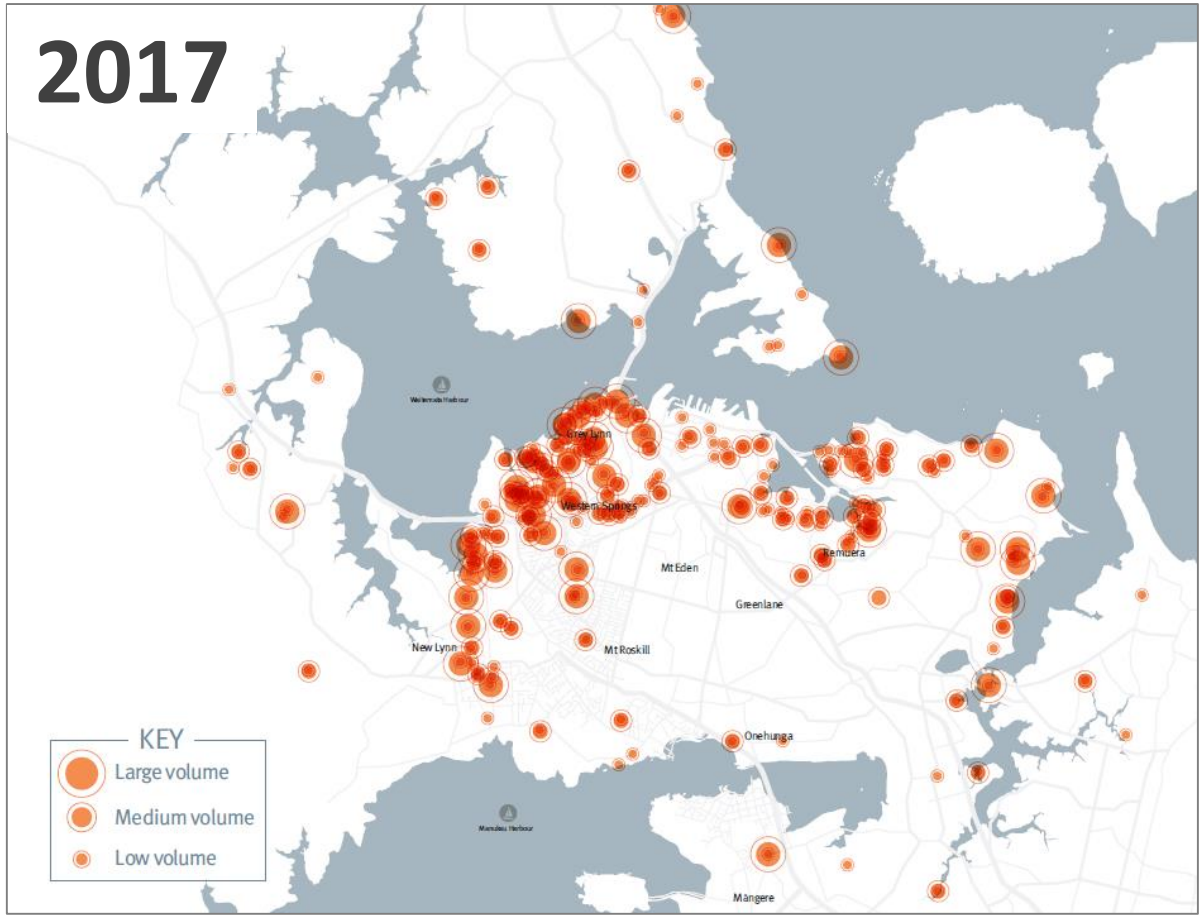
- Covid 19 delays
- Supply chain issues
- Inflationary pressure on commodities
- Construction labour costs increasing and shortage of specialists
- Design development – more detail and have greater understanding
- Significant funding deficit across the programme.

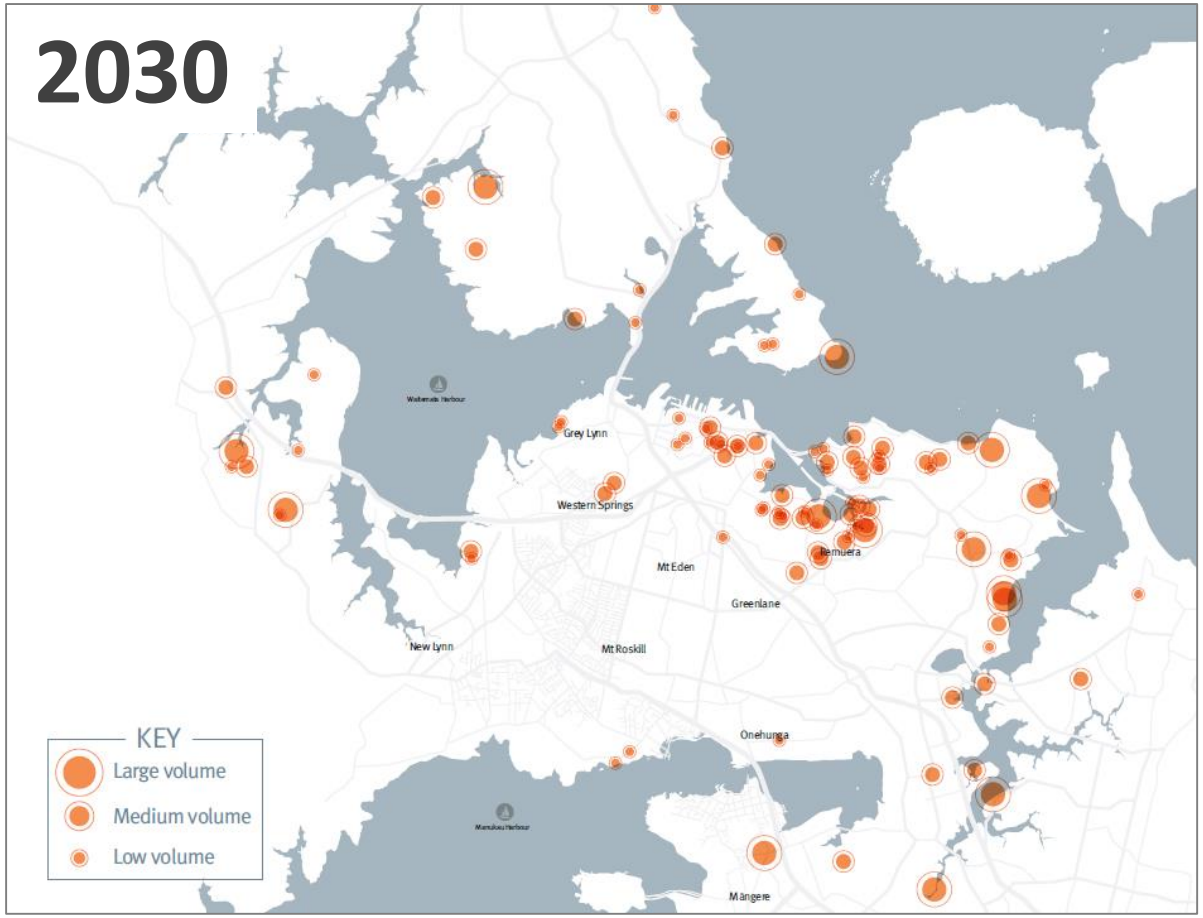
Between August 2020 and February 2022, cost of …	Why?
Supply steel reinforcing bar has increased by **74%**	Due to increase in steel and transport prices.
Concrete including pipes has increased by **19%**	Due to increases in shipping and road transport costs.
HDPE pipe has increased by **38%**	Due to 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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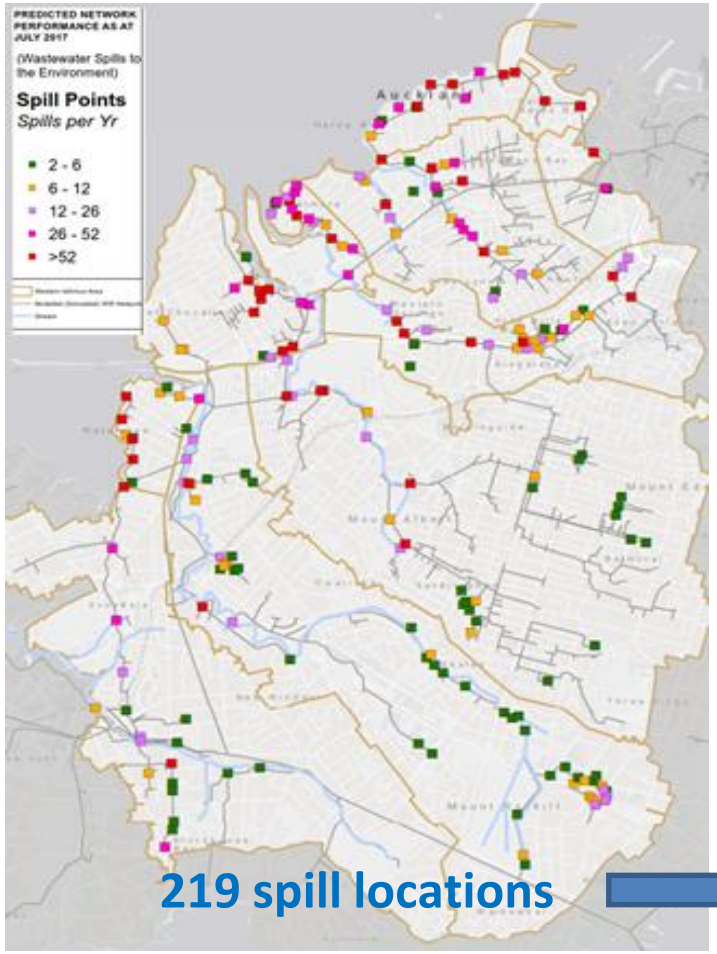
Western Isthmus: 10-year Programme Objectives to 2028

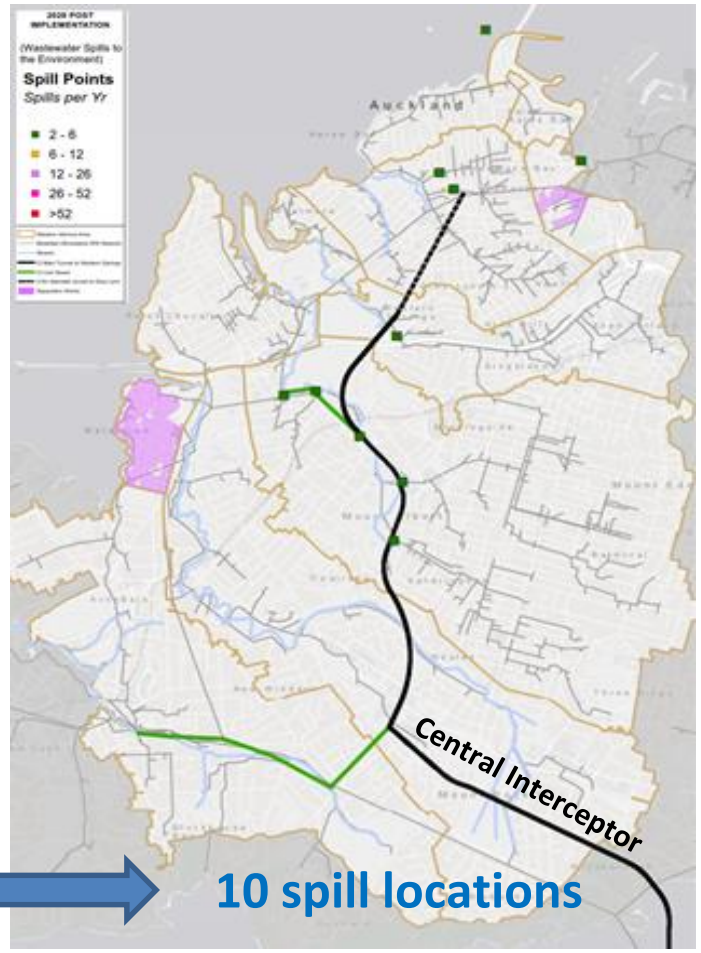
Committed separation works
Separation projects before 2028
Separation projects after 2028
Catchments under review

Network Overflow Performance (2018)



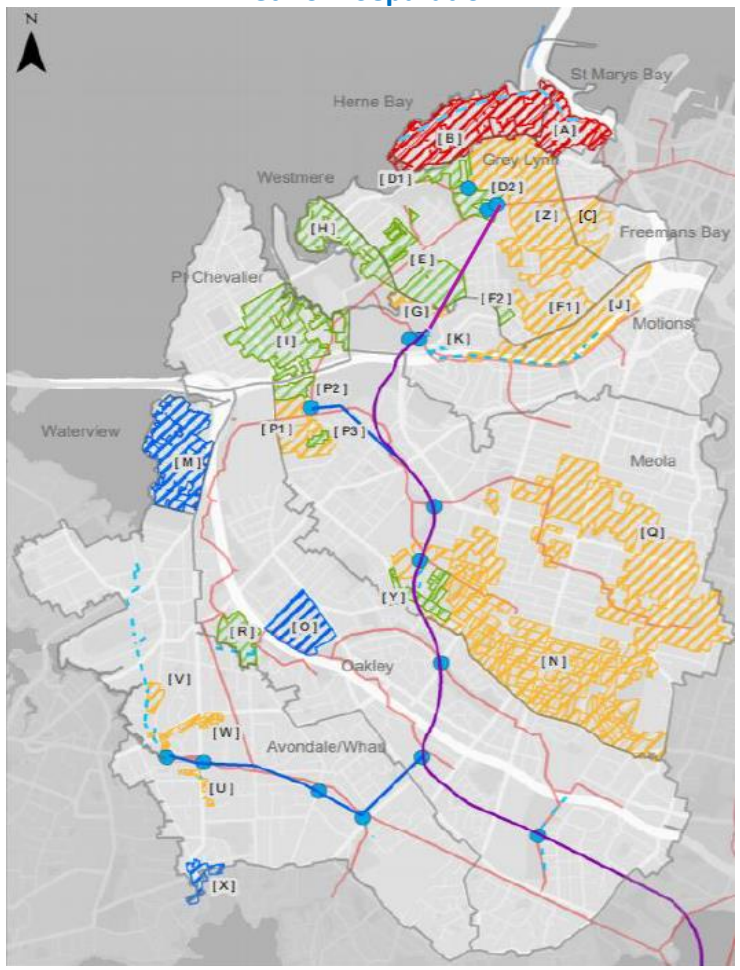
219 spill locations

Network Overflow Performance (2028)



10 spill locations

Network Separation



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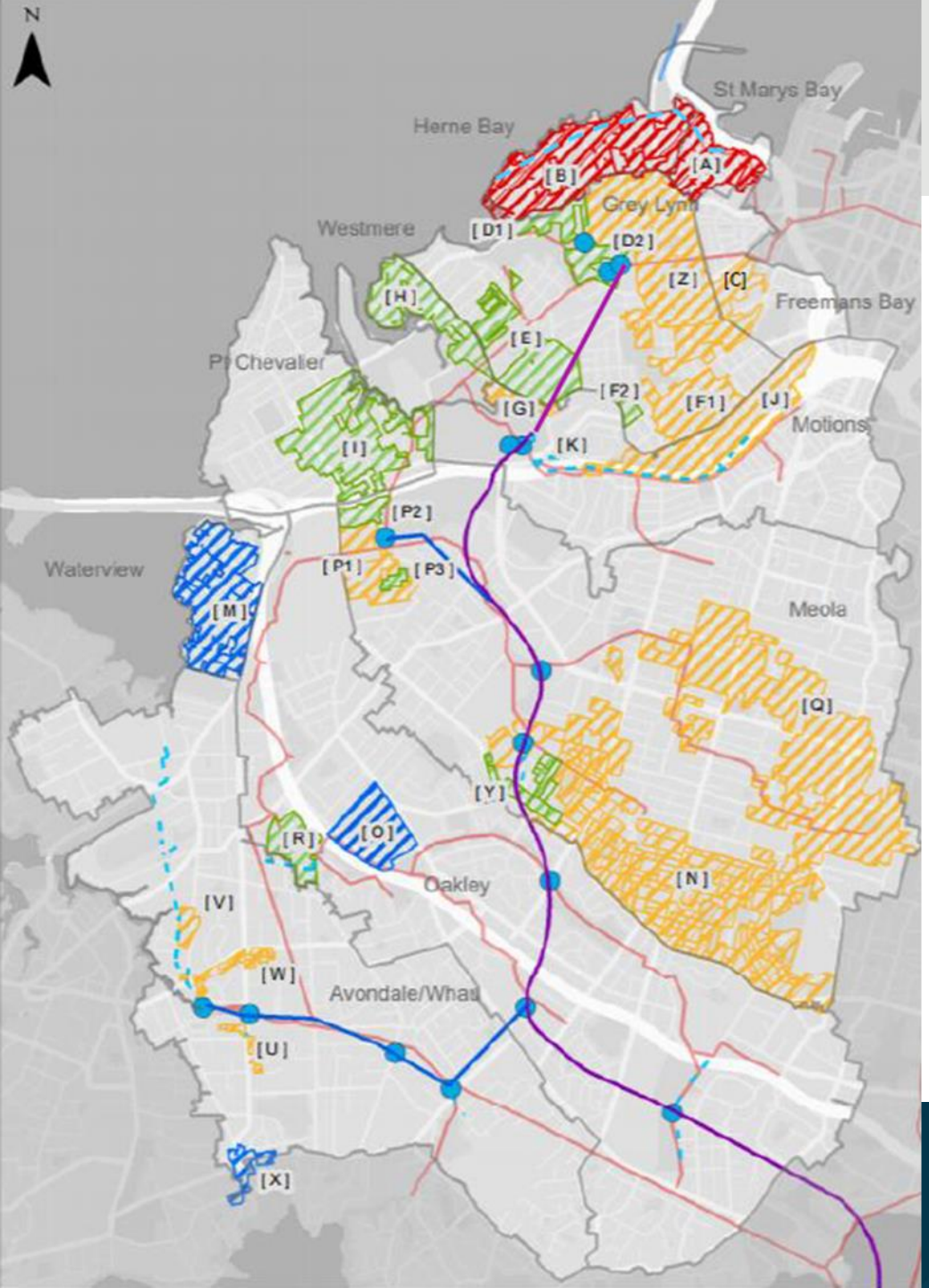
Early Strategy



- 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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Learnings from other separation projects

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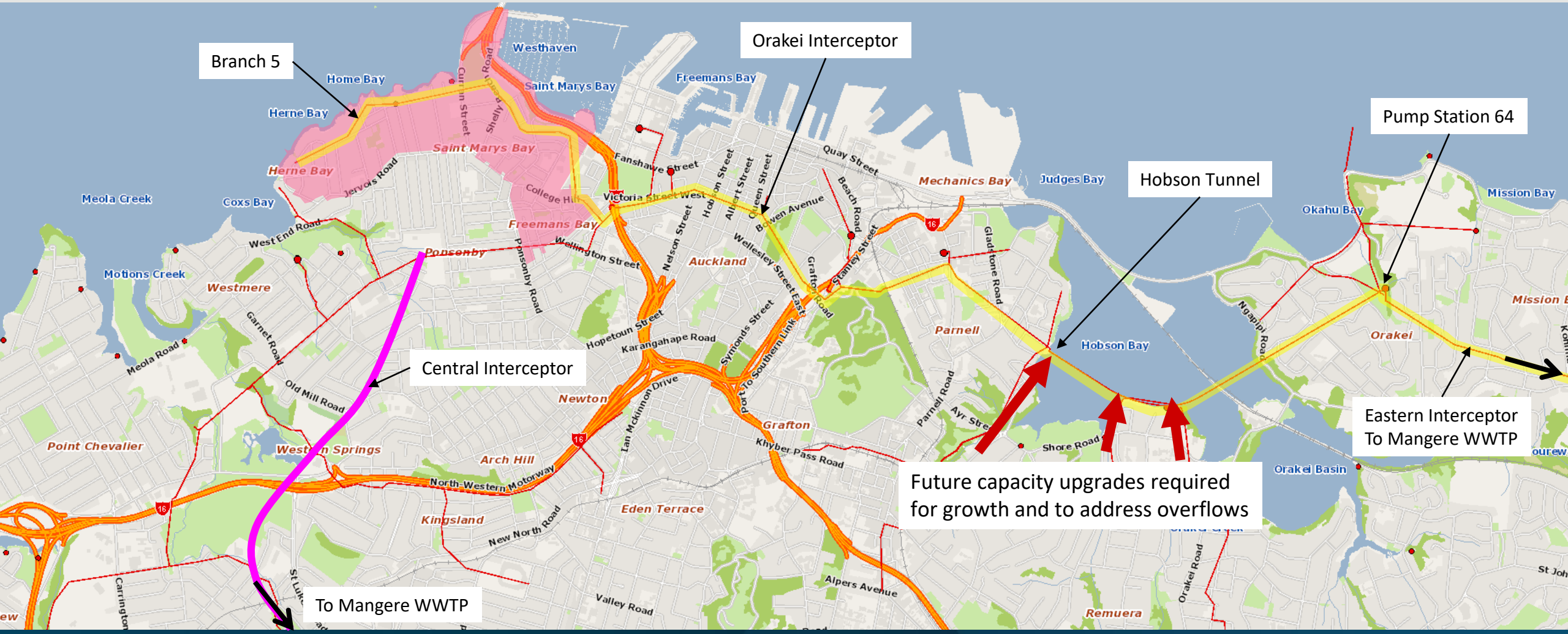
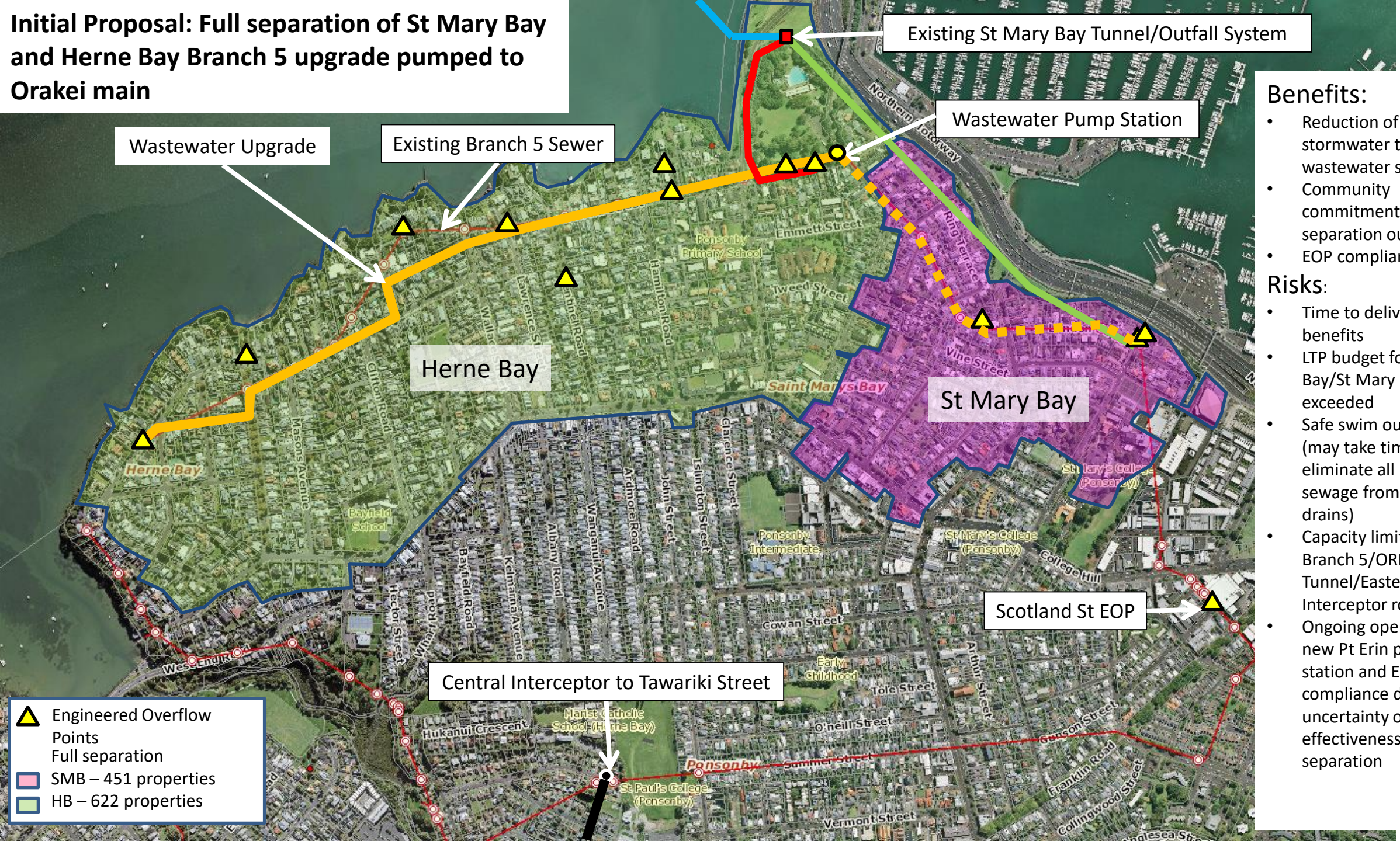
St Mary and Herne Bay - Overview of Existing Network and Issues

Network Capacity Constraints



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



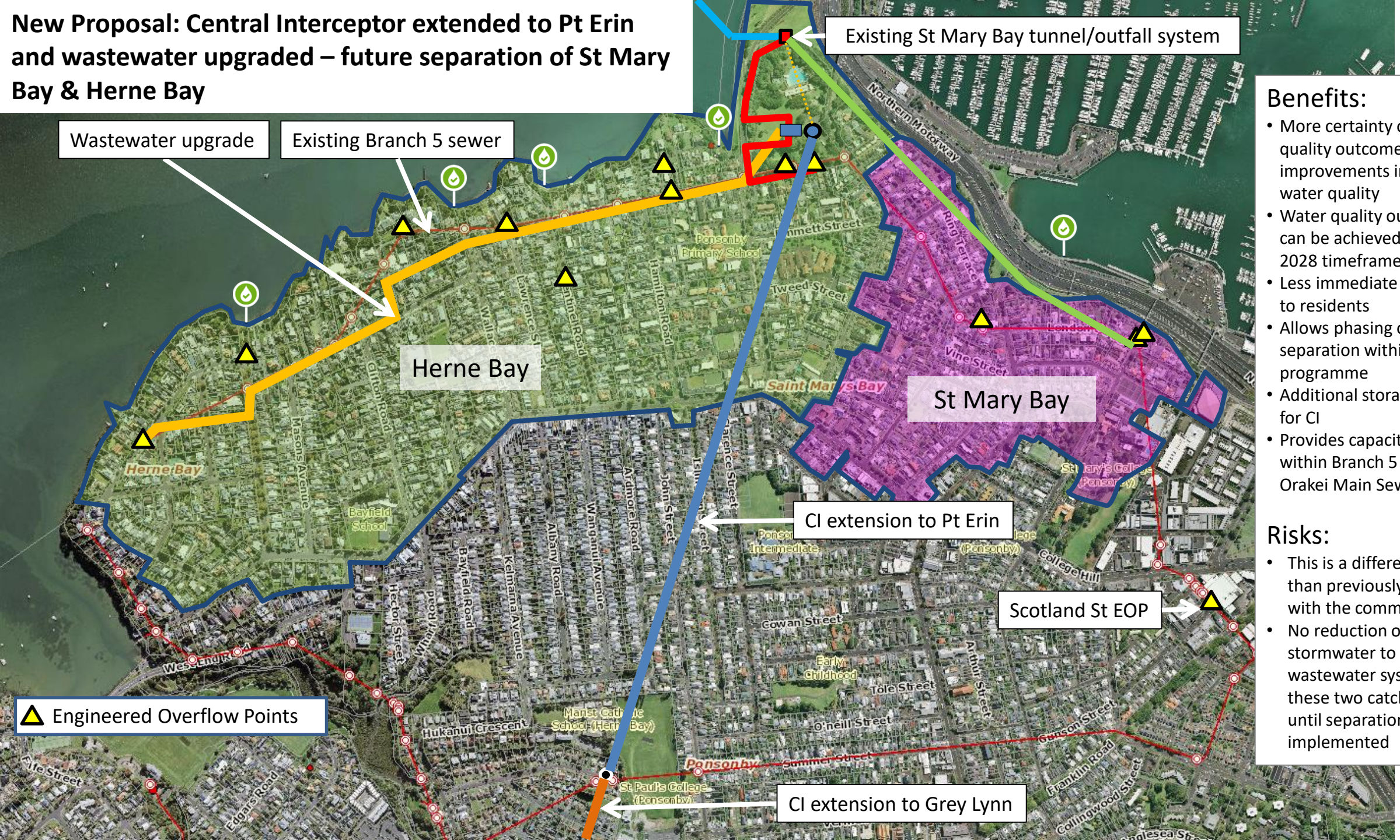
Benefits:

- 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 Mary 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 Mary 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

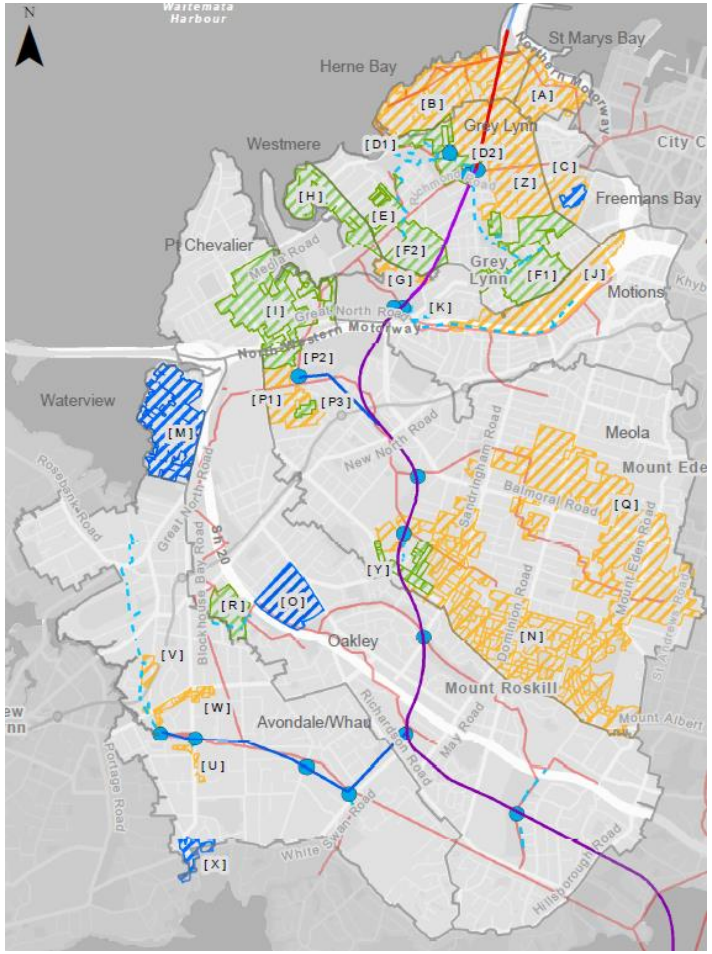
Risks:

- 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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