



Infrastructure Strategy Workshop



Outline

- Introduction (~5 mins)
 - What is an Infrastructure Strategy?
 - Key Infrastructure Themes and Challenges
- Transport (~45 to 60 mins)
 - What we do/what infrastructure we have/condition/performance
 - How the challenges impact what we do
 - What we plan to do
 - Questions
- 3 Waters (~45 to 60 mins)
 - What we do/what infrastructure we have/condition/performance
 - How the challenges impact what we do
 - What we plan to do
 - Questions





What is an Infrastructure Strategy?

Per the Local Government Act 2002, an Infrastructure Strategy must:

- Include:
 - Water supply, wastewater and stormwater
 - Roads and footpaths
- Identify significant infrastructure issues over a period of at least 30 years
- Identify options for managing those issues and the implications of those options





What is an Infrastructure Strategy?

An Infrastructure Strategy must outline how it will manage its infrastructure, considering the need to:

- Renew or replace assets
- Respond to growth or demand for services
- Allow for planned increases or decreases in levels of service
- Maintain or improve public health and environmental outcome, or mitigate adverse effects on them
- Manage risks relating to natural hazards
- Respond to Council's zero carbon target





What is an Infrastructure Strategy?

Links with :

- Financial Strategy
- Asset Management Plans
- Capital budgets
- Future Development Strategy
- Significant forecasting assumptions
- Zero carbon targets
- Levels of Service





Key Infrastructure Themes and Challenges

Themes common to Transport and 3 Waters:

- Aging infrastructure
- Growth / changing demands
- Resilience
- Zero carbon
- DCCs successful infrastructure delivery programmes
- Strong emphasis on Asset Management

Transport specific challenges:

- Economic productivity
- Safety

3 Waters specific challenges:

- Regulatory, Services Delivery
- Public Health / Environmental





Transport



What we do

The roading and footpaths group includes activities and services related to transport.

The Transport team (and its contractors) plan, construct, maintain, and upgrade Dunedin's roads, footpaths, shared paths and associated infrastructure to support the transport corridor.

This includes street lighting, traffic signals (from Dunedin to Oamaru) and road markings.

The transport network is an important contributor to the lifestyle of every Dunedin resident as they move about the city and a contributor to the economic productivity of the region.

It is DCC's role to maintain and upgrade the transport network to meet all relevant legislative requirements.





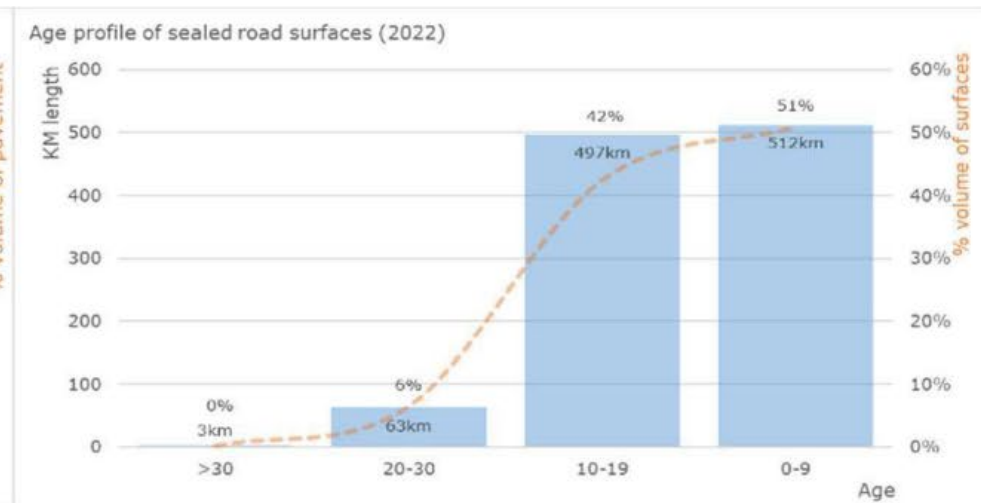
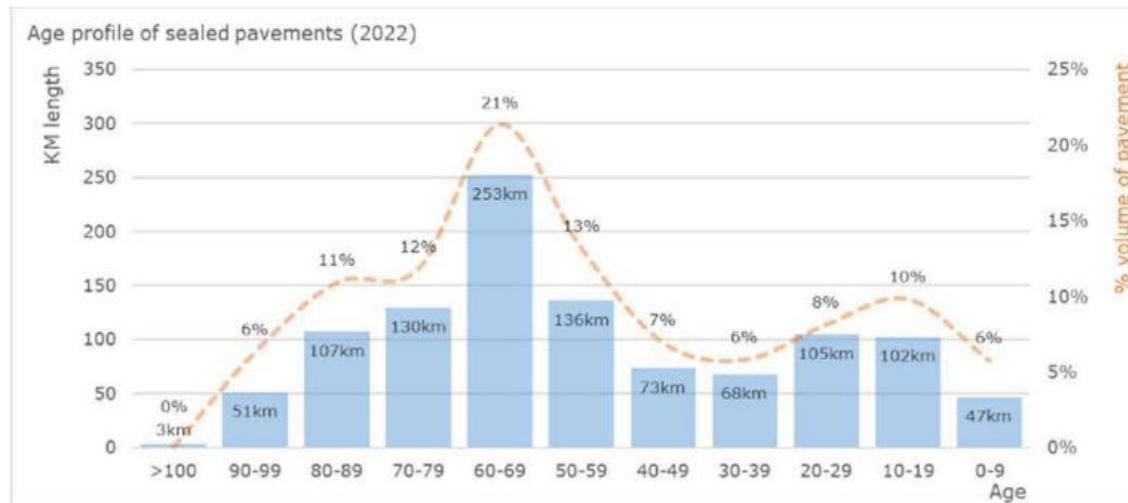
What we have





The condition of the assets

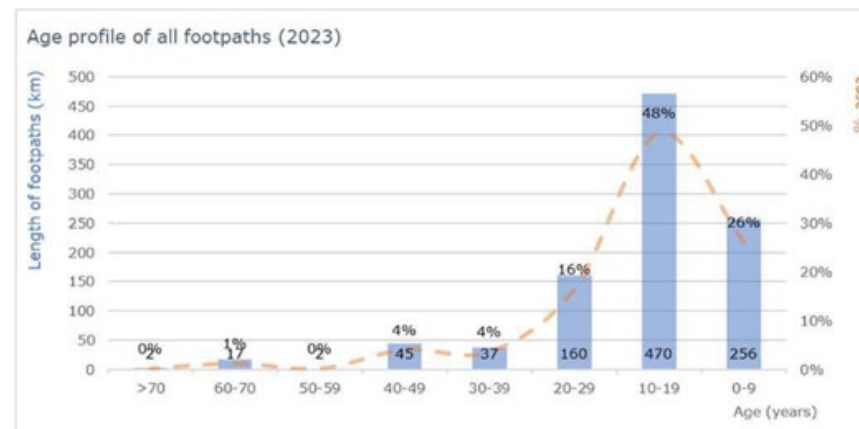
- 50% of Dunedin's sealed pavement is 60 years or over (life of 60-100 years)
- 42% of Dunedin's current road surfaces will reach the end of their life in 10-20 years (surfacing has a life of 10-20 years)
- Dunedin's roads have been built up over many years overlaying surfaces with new seal, this has resulted in the crown being higher than the kerb height in some locations reducing the capacity of the carriageway to hold water
- The maximum number of seals should be 6. 16.9% of the network is facing its last seal





The condition of the assets

- 31% of kerb and channel is over 60 years (life of between 60-100 years) and 12% of the network is in poor, to very poor condition
- 23% of Dunedin's asphalt footpaths are now at their end of their asset life (life of 25-30 years)
- 18% of footpaths are rated poor or very poor condition
- 43% of road culverts are over 70 years (asset life is 80 years)
- There is no major bridge/structure replacement planned in the next 10 years as long as these assets are suitably maintained





How the themes impact what we do

- Aging infrastructure: Retaining a consistent approach to replacing infrastructure meeting the expectations of the community and costs are managed for future generations
- Growth / changing demands: These changes need to be met with infrastructure solutions to support that growth. Increasingly communities are expecting transport choice across the city.
- Resilience: Building resilient transport networks often requires investment in alternative routes or investment in existing routes to ensure they are less susceptible to weather events, or sea level rise – both are costly.
- Zero carbon: Alternative forms of transport are an expectation of the community. Funding that expectation is a challenge, but so too is the space in the transport corridor and accommodating the expectations of different users.





How the challenges impact what we do

- Economic Productivity:
 - Economic productivity is a driver in the GPS 2024, and continuing to support a solid thriving export sector in the Otago/Southland area will be an ongoing focus in the next 10 years in a way that meets our Zero Carbon goals.
- Safety:
 - Crash numbers involving deaths and serious injury have not reduced significantly, and in NZTA's audit of DCC in 2023, it was noted DSI was the highest since 2019.
 - Vulnerable users are overrepresented in crash statistics (24% of Dunedin's DSI's involve pedestrians).
 - Co-funding for safety initiatives through the low-cost low risk work programme has been withdrawn by NZTA so the decision will need to be made as to whether this programme will continue or not. If it continues, it will need to be at 100% local share for at least the next 3 years.





What we plan to do

- Focuses on good asset management principles, stewardship of the existing asset and replacing it at the end of its life and condition to meet community expectations and to ensure future generations are not burdened with costs resulting from deferred capital renewals.
- The planned expenditure over the next 9 years focuses on taking opportunities to build new assets when the co-funding environment is more favorable.
- Planned expenditure over the next 30 years recognizes the growth south of Dunedin, the need to provide transport choices for the community, and the need to support freight growth particularly in the forestry sector.

Challenges Addressed	
Aging infrastructure	✓
Growth / changing demands	✓
Economic growth	✓
Zero carbon	✓
Public Health / Environmental	✓





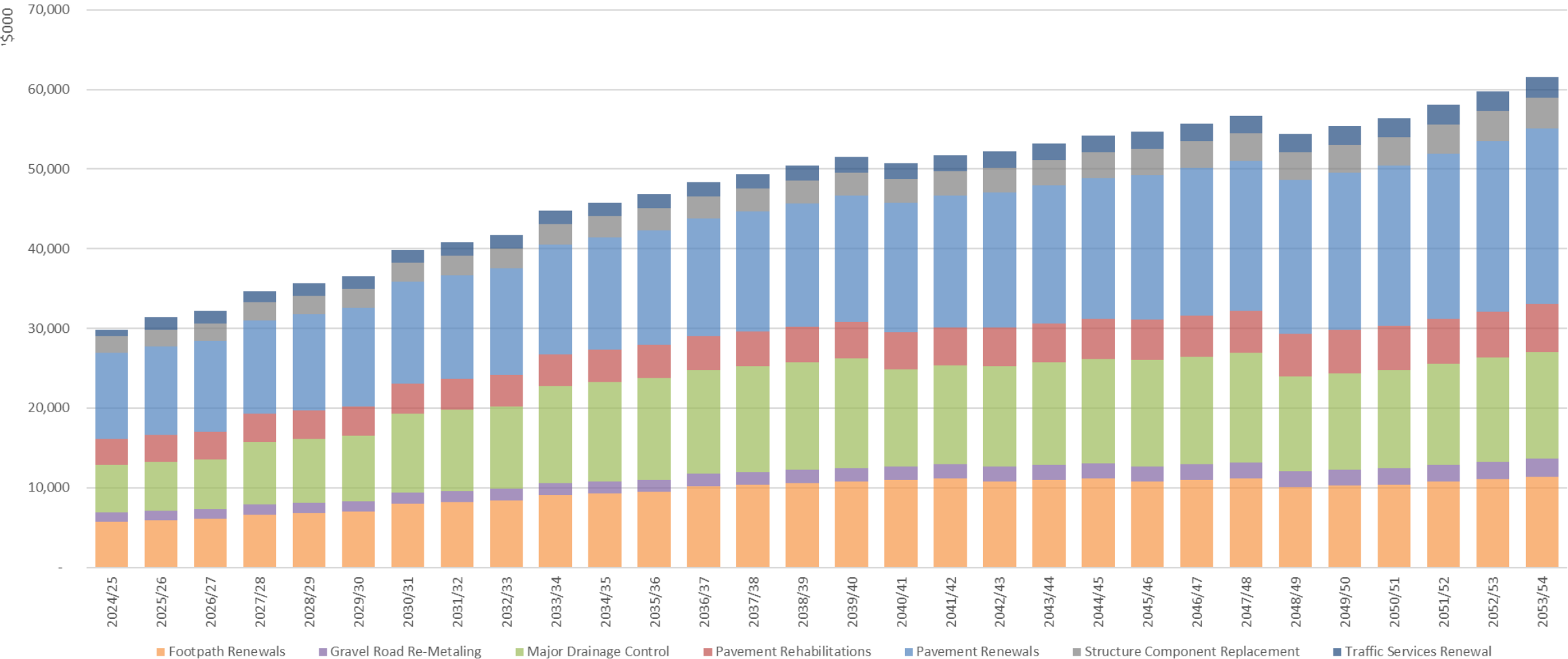
What we plan to do

- Investing in capital renewals will provide a fit for purpose network for our community and a reduced capital renewal backlog.
- Providing safety interventions through the low cost low risk programme will address some safety challenges and make active modes more attractive which will contribute to our Zero Carbon goals.
- A refresh of the Dunedin Urban Cycleways plan will reset the next tranche of investment for cycleways across the City contributing to our Zero carbon goals.
- Delivering the Mosgiel P&R will contribute to Public Transport patronage.
- Delivery the central city parking management strategy will contribute to the retail sector in the CBD
- Delivering the Harbor Arterial Stages 2&3 will provide more capacity in the system for the road freight industry, contributing to economic productivity.

Challenges Addressed	
Aging infrastructure	✓
Growth / changing demands	✓
Resilience	✓
Zero carbon	✓
Regulatory, Services Delivery	✓
Public Health / Environmental	✓



30 Renewal Budget





Questions?





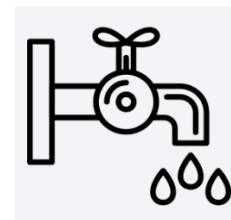
3 Waters



What we do

Water supply

- We collect, supply, treat and distribute water to customers in Dunedin, to maintain the health of the community and to support the local economy.



\$1.61 billion of assets

Wastewater

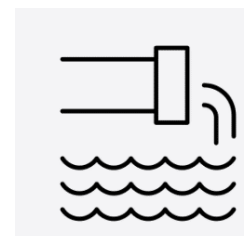
- We collect, treat, and dispose of wastewater from residential and commercial customers across Dunedin, to protect the health of the community and the environment.



\$1.57 billion of assets

Stormwater

- We collect rainwater from the roofs of houses and buildings, footpaths and roads and divert it to the ground, into waterways or the ocean, to prevent flooding of properties and businesses.



\$0.775 billion of assets





What we have





Water supply dams - 9
\$13.9M

WW treatment plants - 7
\$202.8M

WW pipes - 927 km
\$1,207.4M

Abstraction points - 21
\$7.1M

WW Pump stations - 78
\$27.9M

Water pump stations - 21
\$4.3M

Stormwater pipes - 393 km
\$688.2M

Water treatment plants - 7
\$119.6M

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CITY COUNCIL | a-rohe o
Otepoti

DUNEDIN 3 WATERS ASSETS

DCC assets are valued annually so that appropriate depreciation can be allowed for in budgets to replace assets at the end of their life.

Treated water tanks - 62
\$41.6M

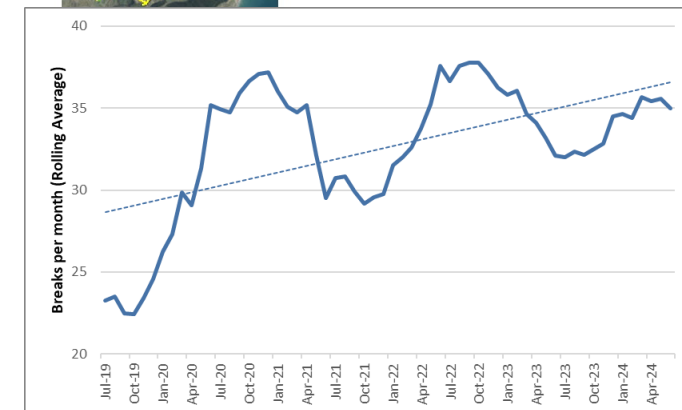
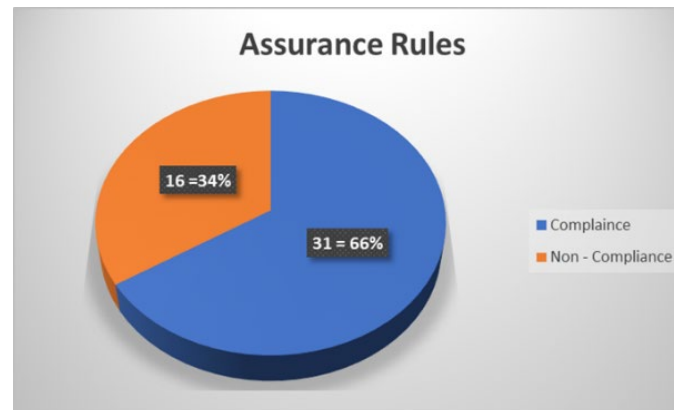
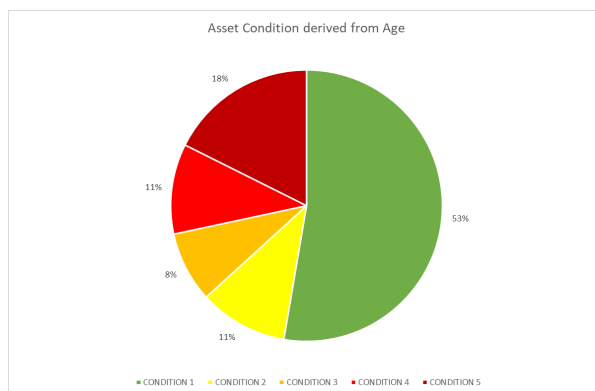
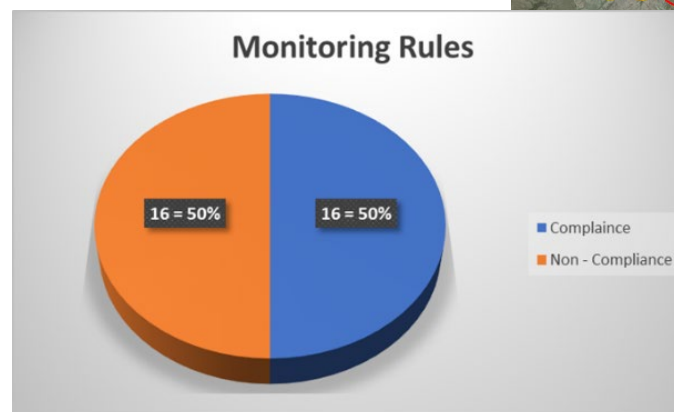
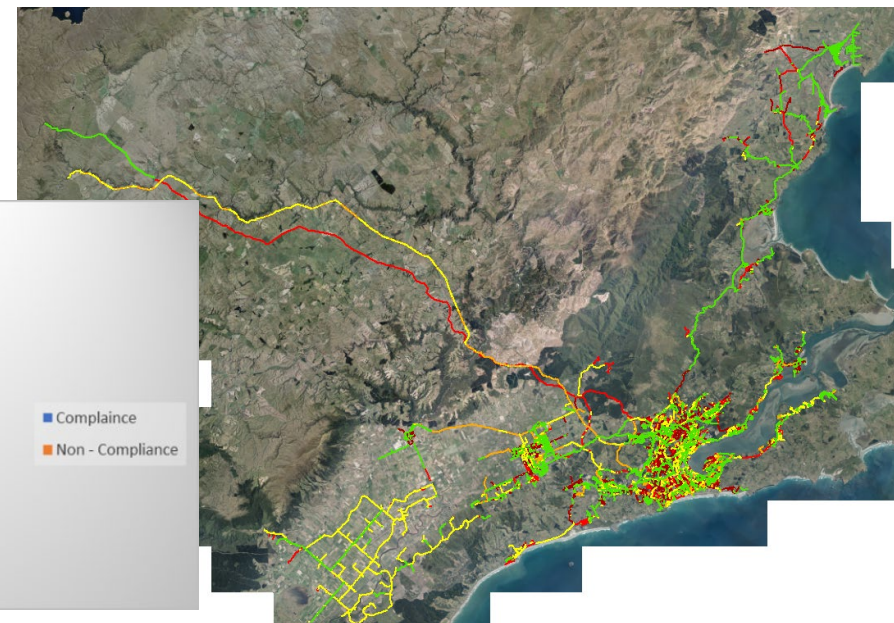
Water pipes - 1,742 km
\$1,192.0M

SW pump stations - 11
\$8.9M



Condition / performance - Water Supply

- 29% of assets rated Poor to Very Poor
- Approximately 12% of assets are at or beyond their theoretical useful life
- Trend of increasing pipe breaks
- Monitoring and Assurance Rules tougher, improvement needed to comply



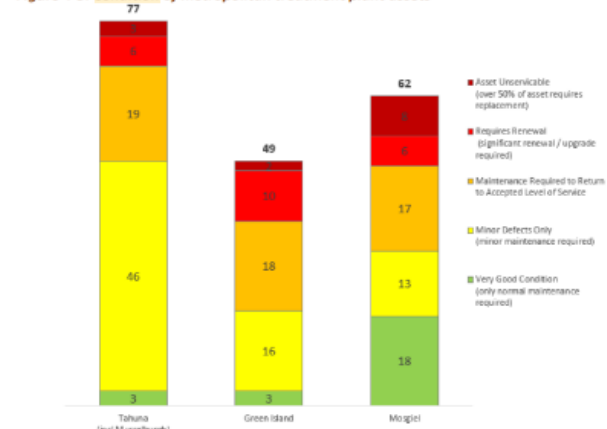


Condition / performance - Wastewater

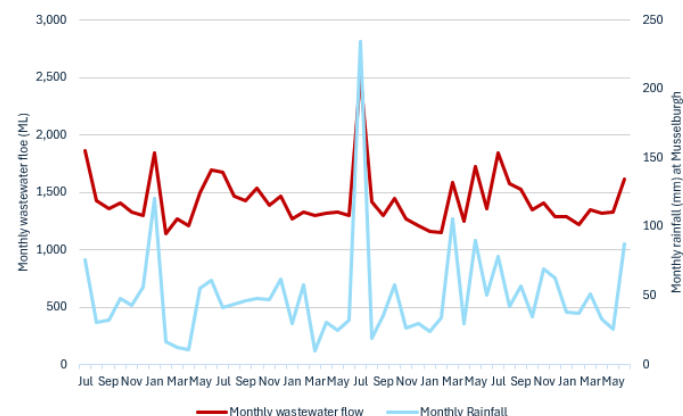
- 26% of assets rated Poor to Very Poor
- Approximately 22% of assets are at or beyond their theoretical useful life
- Network performs poorly in wet weather
- Investment in renewals and maintenance is having an impact
- More enforcement action from regulator



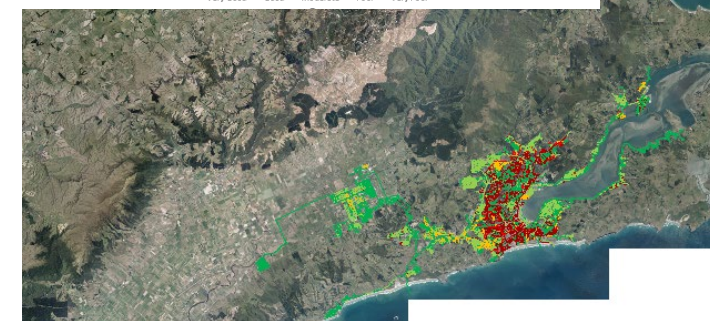
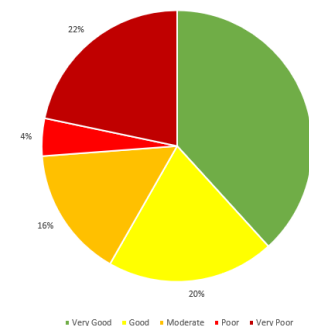
Figure 4-3: Condition of metropolitan treatment plant assets



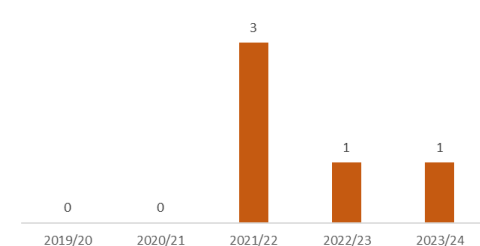
Overall, 35 of the 200 assets (18%) assessed across the four sites require renewal or are unserviceable. The following graphs summarise the condition of assets by WWTP plant for the metropolitan sites (figures 4-4 to 4-6).



Condition derived from age



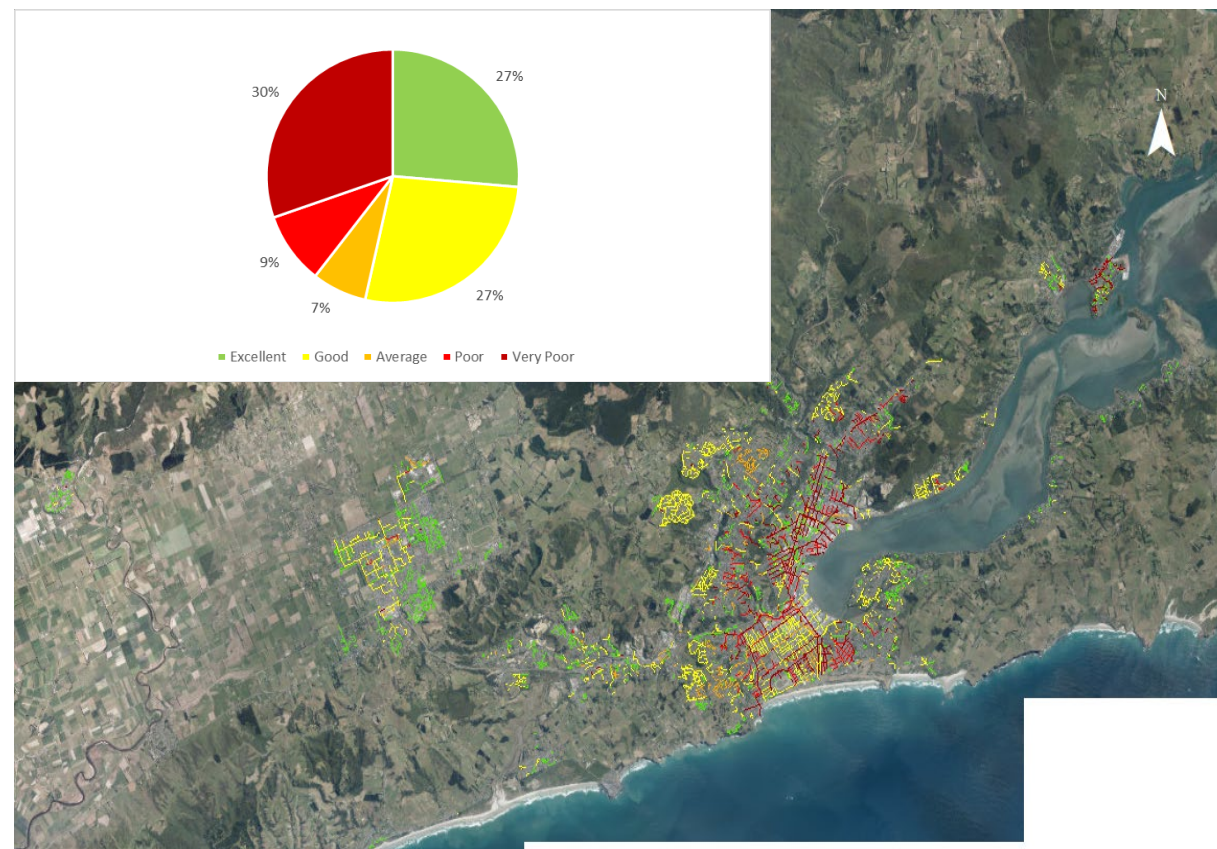
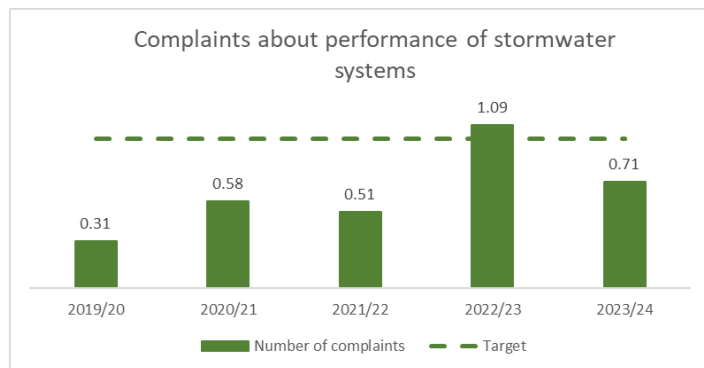
Number of abatement or infringement notices, enforcement orders and convictions





Condition / performance - Stormwater

- 39% of assets rated Poor to Very Poor
- Approximately 13% of assets are at or beyond their theoretical useful life
- Networks generally perform below target 1-in-10 year Level of Service
- Limited removal of contamination



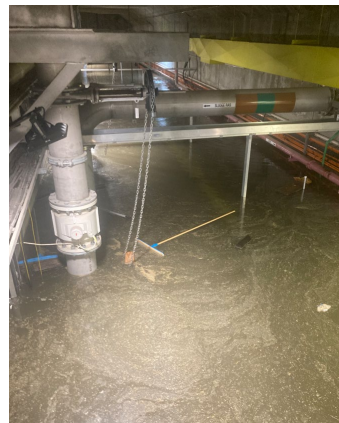


How the themes and challenges impact what we do

- Aging infrastructure
- Growth / changing demands
- Resilience
- Zero carbon
- Successful infrastructure delivery programmes
- Strong emphasis on Asset Management

3 Waters specific challenges:

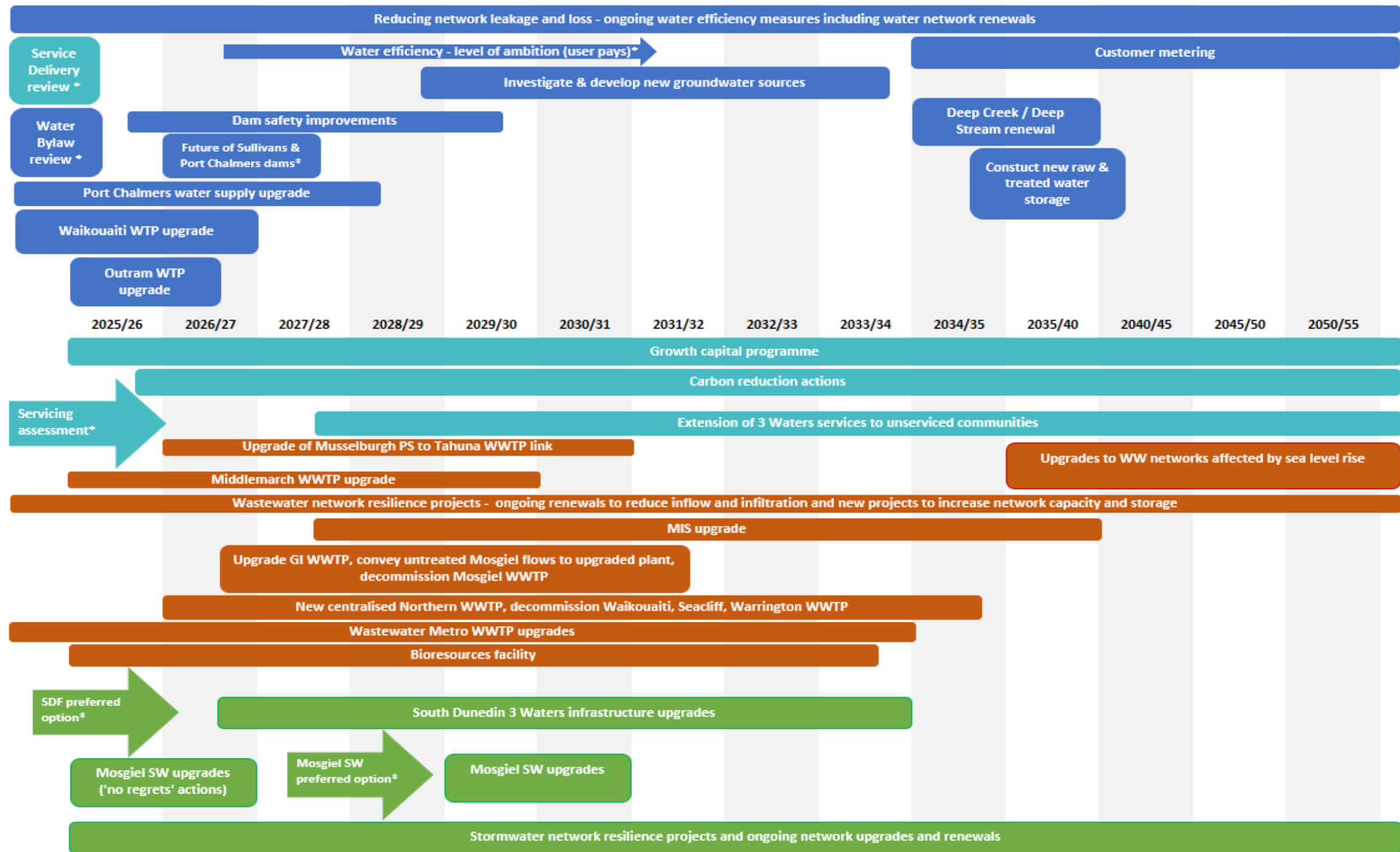
- Regulatory, Services Delivery
- Public Health / Environmental





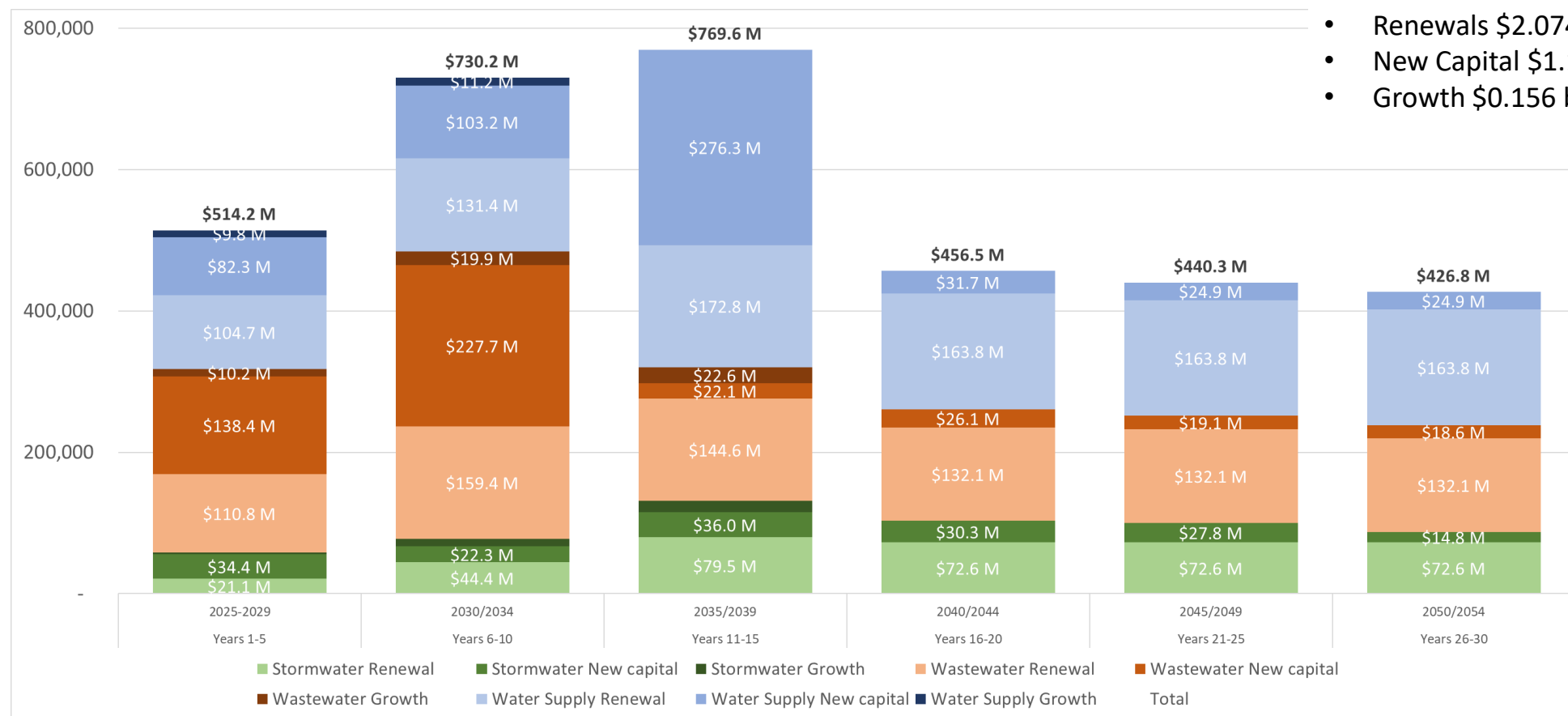
What we plan to do – Summary







What we plan to do – 30 Year Budget Summary



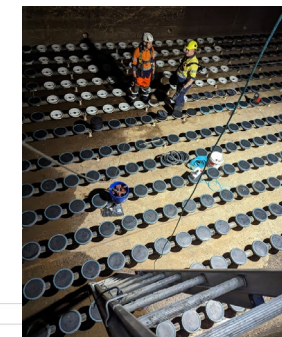
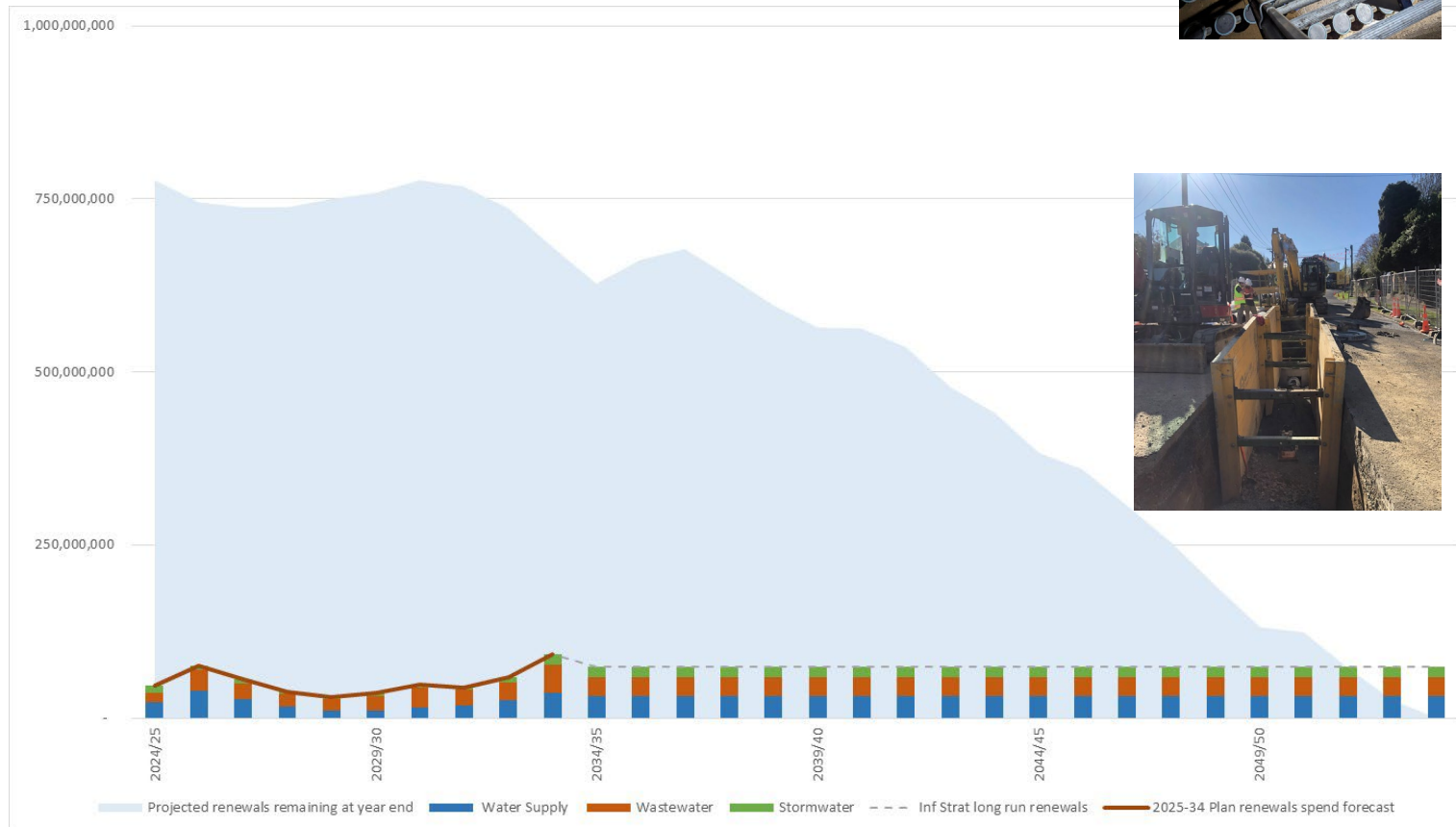
- Renewals \$2.074 billion
- New Capital \$1.160 billion
- Growth \$0.156 billion





What we plan to do – Aging infrastructure

- Prioritise rehabilitation over full replacement where possible
- Extending the useful life of our assets
- Extending renewals over next 30 years
- Benefits
 - Increased resilience
 - Improved regulatory compliance
 - Improve public and environmental health, safety
 - Reduce water supply leakage
 - Reduce wastewater overflows





What we plan to do – Growth

- New infrastructure and upgrades to 3 Waters networks (including pump stations and pipes) to service plan-enabled growth
- Extending services as per FDS
- Allowance:
 - Yr 1-9:
 - Plan-enabled growth - \$102.5M (mix new and renewals)
 - Service extensions - \$76.9M
 - Yr 10-30:
 - Plan-enabled growth - \$54.1M (mix new and renewals)
 - Service extensions - NIL





What we plan to do – Resilience

- New alternative water sources
 - Additional water storage
 - New mobile power generators
 - Maintain and improve the safety of our dams
-
- Allowance:
 - Yr 1-9: \$24.8M (mostly new capital)
 - Yr 10-30: \$259.5M (new capital)
-
- Benefits
 - Resilience for water supply constraints
 - Resilience against natural hazards
 - Maintain level of service
 - Replace ageing assets which require renewal





What we plan to do – Zero Carbon

- Identify and deliver a secure bioresources solution
- Allowance:
 - Yr 1-9: \$62M (new)
 - Yr 10-30: NIL
- Benefits
 - Beneficial use of resources
 - Contributes to DCC Zero Carbon targets
 - Reduced operational costs
 - Resilience of sludge disposal route (as a bioresource)



Challenges Addressed

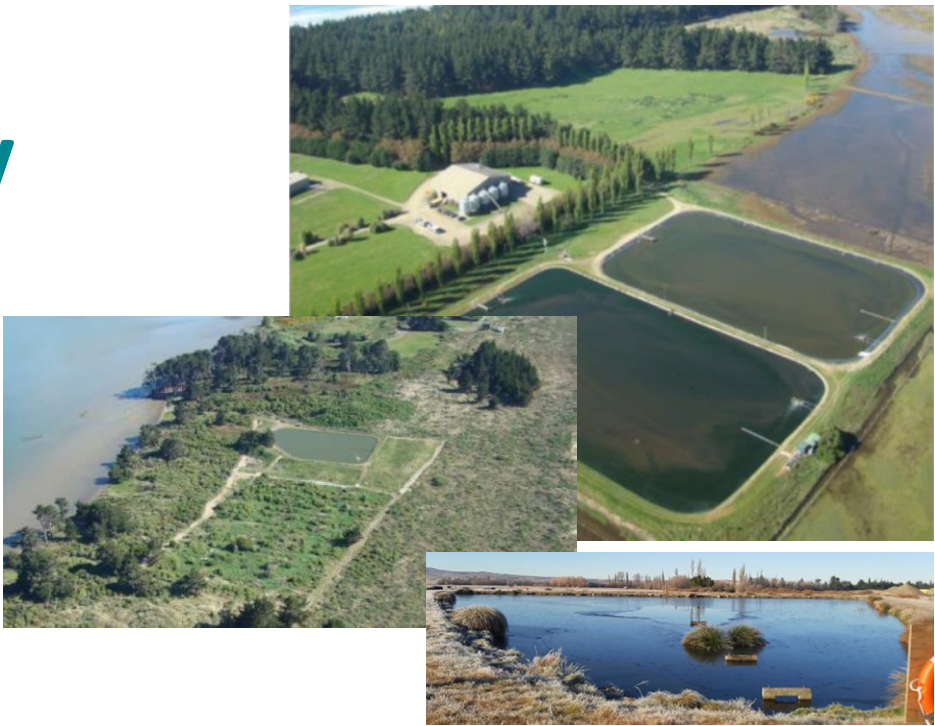
Aging infrastructure	✓
Growth / changing demands	
Resilience	✓
Zero carbon	✓
Regulatory, Services Delivery	✓
Public Health / Environmental	✓





What we plan to do – Regulatory

- New wastewater treatment plant(s) to service Warrington and Waikouaiti with potential future capacity for Waitati and Seacliff
- Upgrade Middlemarch wastewater treatment plant and network
- Allowance:
 - Yr 1-9: \$75.3M (mix new and renewals)
 - Yr 10-30: \$33.2M
- Benefits
 - Maintain level of service
 - Replace ageing assets which require renewal
 - Resilience for future sea level rise
 - Meeting Te Tiriti obligations



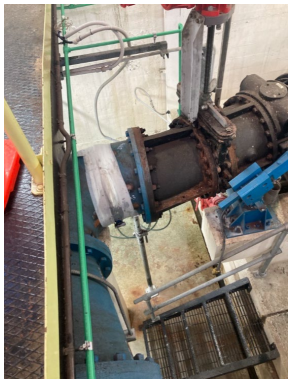
Challenges Addressed	
Aging infrastructure	✓
Growth / changing demands	✓
Resilience	✓
Zero carbon	
Regulatory, Services Delivery	✓
Public Health / Environmental	✓





What we plan to do – Musselburgh to Tahuna

- New pump station and tunnel to convey wastewater to Tahuna
- Allowance:
 - Yr 1-9: \$55M (mix new and renewals)
 - Yr 10-30: \$NIL
- Benefits
 - Replace vulnerable assets (some over 100 years old)
 - Reduce HSW risks associated with current pump station
 - Reduce risk of failure of MPS/transfer
 - Reduce potential for environmental/public health hazard



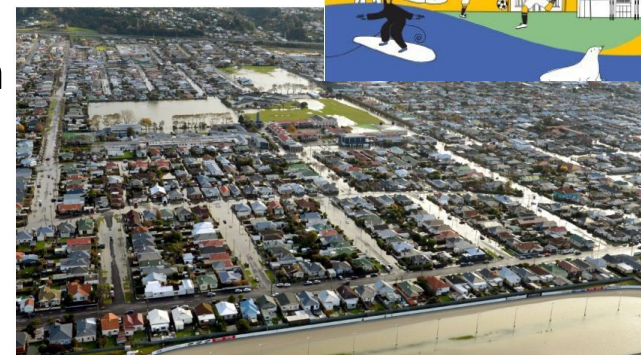
Challenges Addressed	
Aging infrastructure	✓
Growth / changing demands	✓
Resilience	✓
Zero carbon	
Regulatory, Services Delivery	✓
Public Health / Environmental	✓





What we plan to do – SDF and Mosgiel stormwater

- Implementation of South Dunedin Future (SDF) adaptation plan
- Upgrades to Mosgiel stormwater network
- Allowance:
 - Yr 1-9: \$40.6M (renewals and new capital)
 - Yr 10-30: NIL
- Benefits
 - Replace aging assets
 - Reduce risk of flooding
 - Reduce risks to public, property and environment



Challenges Addressed

Aging infrastructure	✓
Growth / changing demands	
Resilience	✓
Zero carbon	
Regulatory, Services Delivery	
Public Health / Environmental	✓





What we plan to do – SCADA / AMIS

- Replace or upgrade SCADA (Supervisory Control and Data Acquisition) and AMIS (Asset Management Information Systems) with fit for purpose infrastructure.

- Allowance:

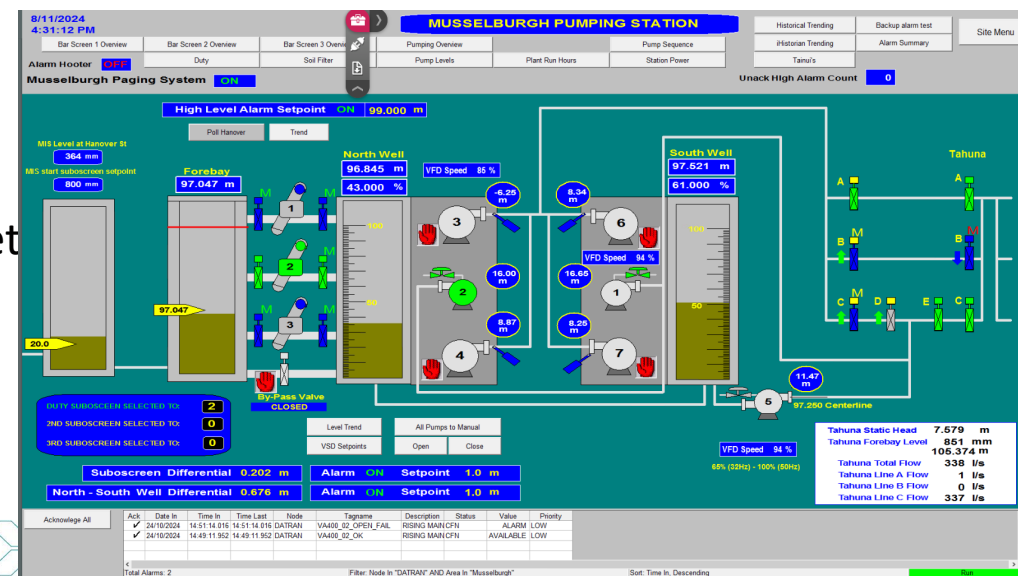
- Yr 1-9: \$2.7M (renewals and new capital)
- Yr 10-30: NIL

- Benefits

- Replace aging assets
- Reduce cyber security and business risks
- Improve data management including for compliance and asset management
- Improve operational efficiency

Challenges Addressed

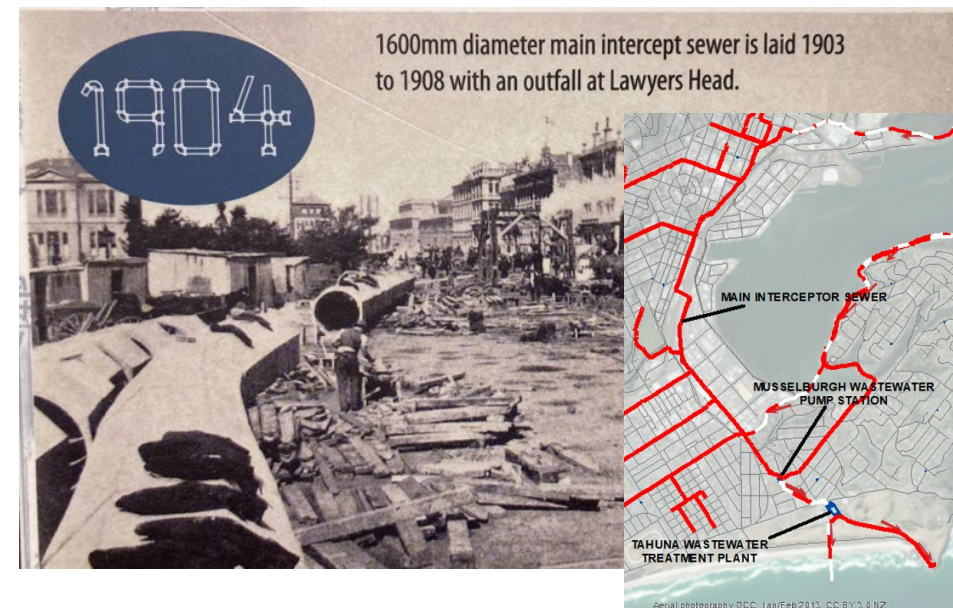
Aging infrastructure	✓
Growth / changing demands	
Resilience	✓
Zero carbon	
Regulatory, Services Delivery	✓
Public Health / Environmental	✓





What we plan to do – MIS

- Asset renewal or rehabilitation of approx 4km gravity main up to 1.65m diameter
- Allowance:
 - Yr 1-9: \$19.5M (mix new and renewals)
 - Yr 10-30: \$19.5M (mix new and renewals)
- Benefits:
 - Rehabilitate or renew critical assets
 - Reduce potential for environmental/public health hazard
 - Resolve constraints on growth in CBD and North Dunedin (FDS)



Challenges Addressed

Aging infrastructure	✓
Growth / changing demands	✓
Resilience	✓
Zero carbon	
Regulatory, Services Delivery	✓
Public Health / Environmental	✓





What we plan to do – Decommission Mosgiel WWTP

- Decommission Mosgiel WWTP and convey wastewater to Green Island WWTP for full treatment
- Upgrade Green Island WWTP to treat Mosgiel WW and potentially other flows
- Allowance:
 - Yr 1-9: \$40M (mix new and renewals)
 - Yr 10-30: \$NIL
- Benefits
 - Replace ageing assets which require renewal
 - Reduce risk of wastewater overflows
 - Reduce operational costs (less WWTP)



Challenges Addressed	
Aging infrastructure	✓
Growth / changing demands	✓
Resilience	
Zero carbon	
Regulatory, Services Delivery	✓
Public Health / Environmental	✓





What we plan to do – Wet weather network performance wastewater

- Reducing inflow & infiltration from laterals, removing cross-connections, sealing manholes in low-lying areas, pipe upgrades, network storage, raising and relocating assets in flood-prone areas
- Increased monitoring / smart networks to identify issues and respond to events



- Allowance:
 - Yr 1-9: \$78.4M (renewals and new capital)
 - Yr 10-30: \$53.5M (renewals and new capital)
- Benefits
 - Reduce risk of wastewater overflows
 - Improved freshwater and coastal water quality
 - Reduce operational impacts and costs



Challenges Addressed

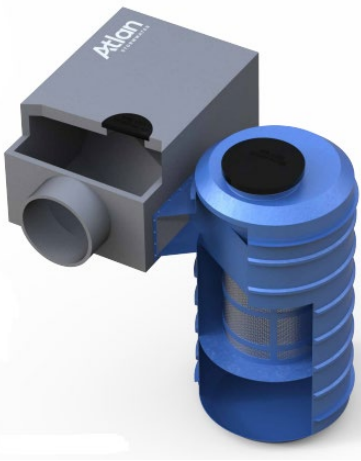
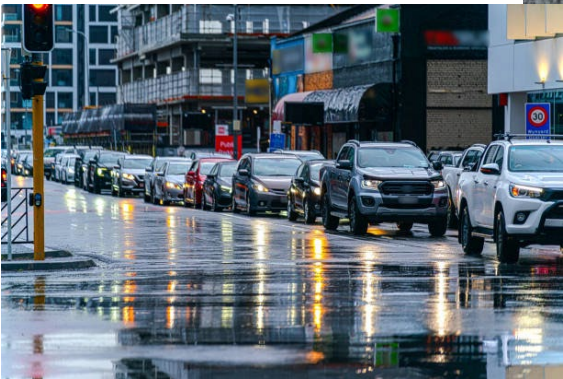
Aging infrastructure	✓
Growth / changing demands	✓
Resilience	✓
Zero carbon	
Regulatory, Services Delivery	✓
Public Health / Environmental	✓





What we plan to do – Storm treatment in high traffic areas

- Retrofitting of stormwater treatment devices for high traffic areas
- Allowance:
 - Yr 1-9: \$14.3M (new capital)
 - Yr 10-30: \$14.7M (new capital)
- Benefits
 - Reduces heavy metal pollution of stormwater
 - Improved freshwater and coastal water quality
 - Improves environment and the safety of recreational activities



Challenges Addressed	
Aging infrastructure	
Growth / changing demands	
Resilience	
Zero carbon	
Regulatory, Services Delivery	
Public Health / Environmental	✓



What we plan to do – Mosgiel, Port Chalmers and Rotary Park water supply

- Alternative water supply route to Mosgiel
- Upgrading water supply to Port Chalmers and decommissioning the water treatment plant
- Upgrading water supply to at Rotary Park
- Allowance:
 - Yr 1-9: \$38.2M (renewals and new capital)
 - Yr 10-30: NIL
- Benefits
 - Replace aging assets
 - Allow for growth
 - Improve operational efficiency
 - Reduce operational costs and carbon

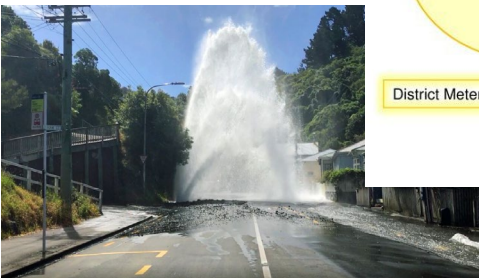
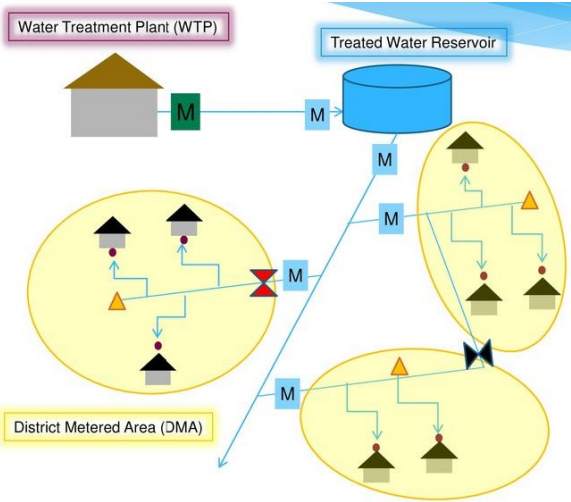


Challenges Addressed	
Aging infrastructure	✓
Growth / changing demands	✓
Resilience	✓
Zero carbon	✓
Regulatory, Services Delivery	
Public Health / Environmental	





What we plan to do – Water efficiency



- District Metered Area (DMA) creation to improve ability to target leakage
- Improved pressure management to reduce pipes breaks and water loss
- Methods to identify leaks on customers pipes
- Allowance:
 - Yr 1-9: \$82.5M (renewals and new capital)
 - Yr 10-30: \$84M (new capital)
- Benefits
 - Replace aging assets
 - Improve operational efficiency
 - Reduce operational costs and carbon
 - Allow for growth while reducing capacity upgrades
 - Improved health of source waters



Challenges Addressed	
Aging infrastructure	✓
Growth / changing demands	✓
Resilience	✓
Zero carbon	✓
Regulatory, Services Delivery	✓
Public Health / Environmental	✓





Questions?

