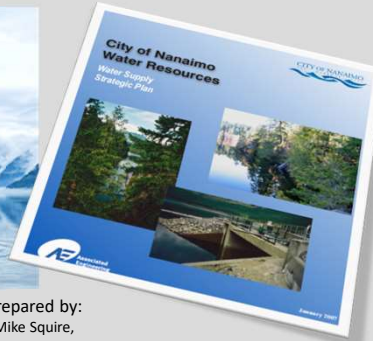


Water Supply Strategy

As part of REIMAGINE NANAIMO, the City of Nanaimo is updating the Water Supply Strategic Plan to ensure we continue to have a supply of clean, safe, and affordable drinking water.



Prepared by:
Mike Squire,
Manager, Water Resources
May 12, 2021

Strategic Importance

Clean, safe, affordable drinking water is essential to sustain vibrant and healthy communities. Together, the Water Supply Strategy and REIMAGINE NANAIMO will define how our communities grow and thrive.

The previous Water Supply Strategic Plan main focus was on health and water quality improvements.

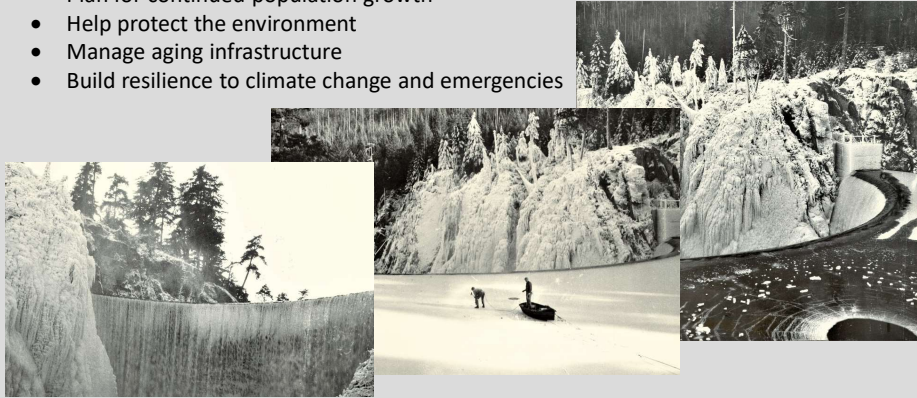
We are updating the Water Supply Strategy to ensure we continue to have a supply of clean, safe, and affordable drinking water



Strategic Importance

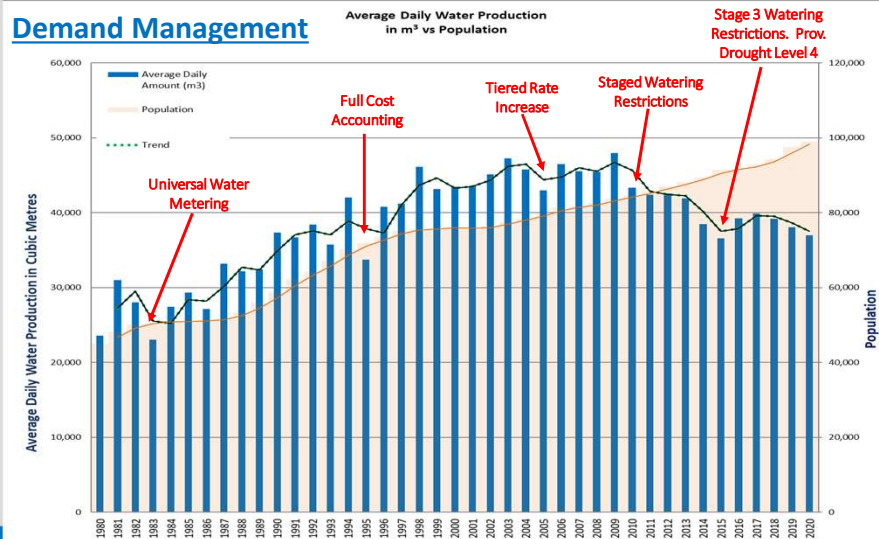
The City of Nanaimo Water Supply Strategy sets the 50-year vision for the City's drinking water. The updated plan will provide guidance the City will follow to:

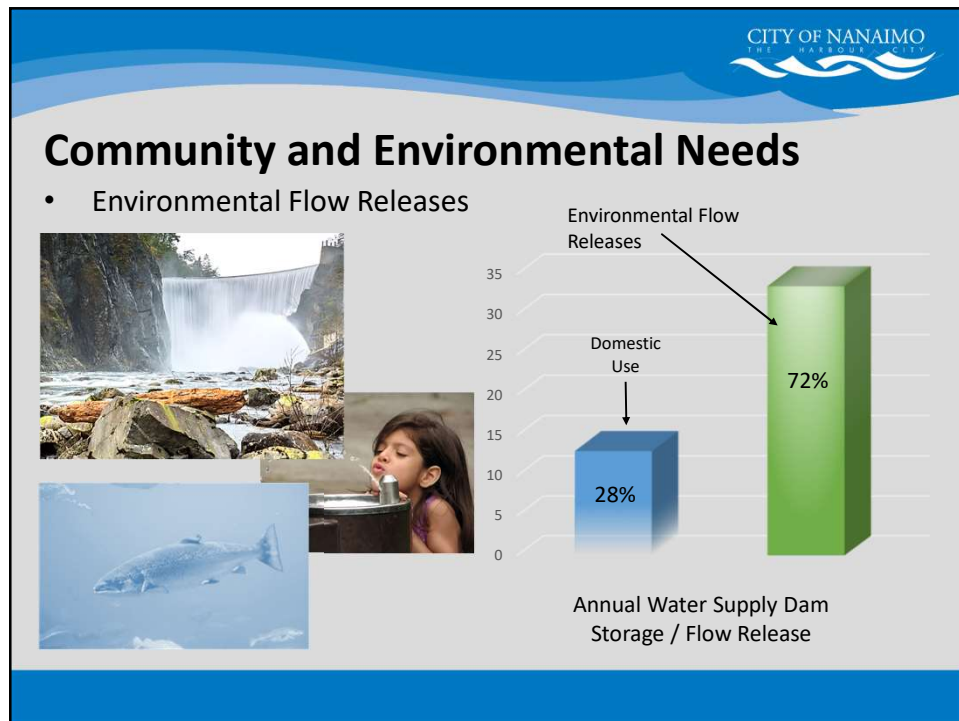
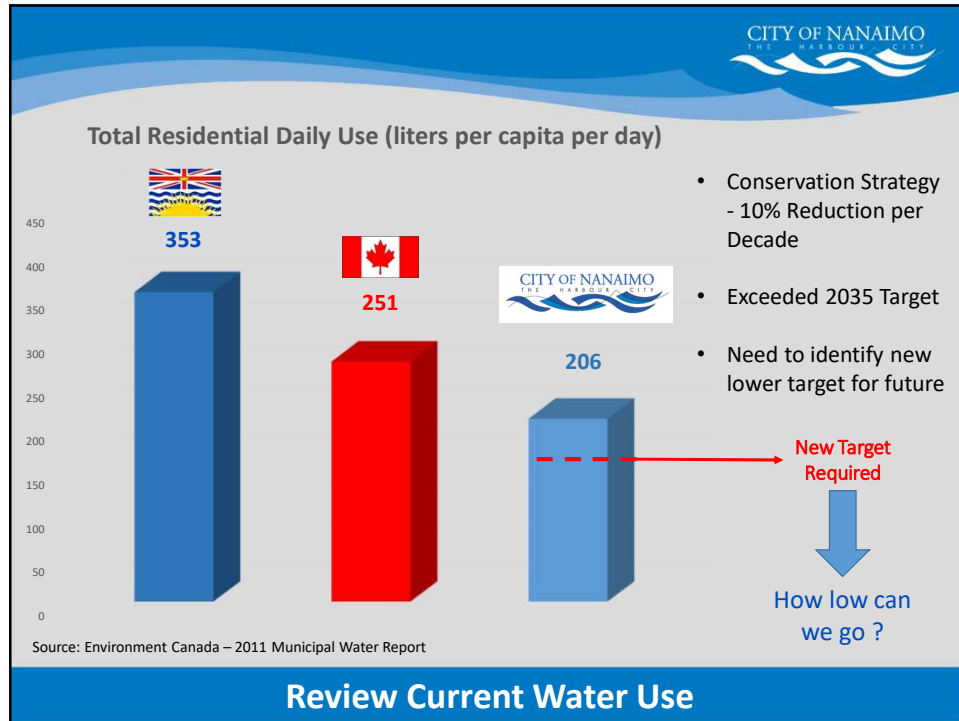
- Plan for continued population growth
- Help protect the environment
- Manage aging infrastructure
- Build resilience to climate change and emergencies



Review Current Water Use

Demand Management







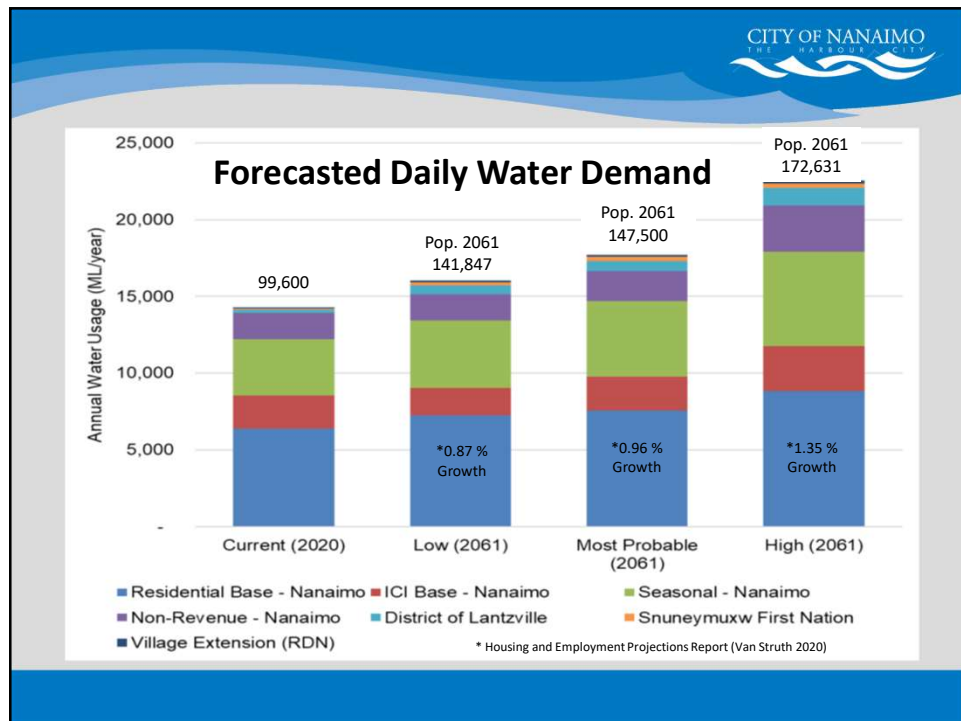
Community Safety

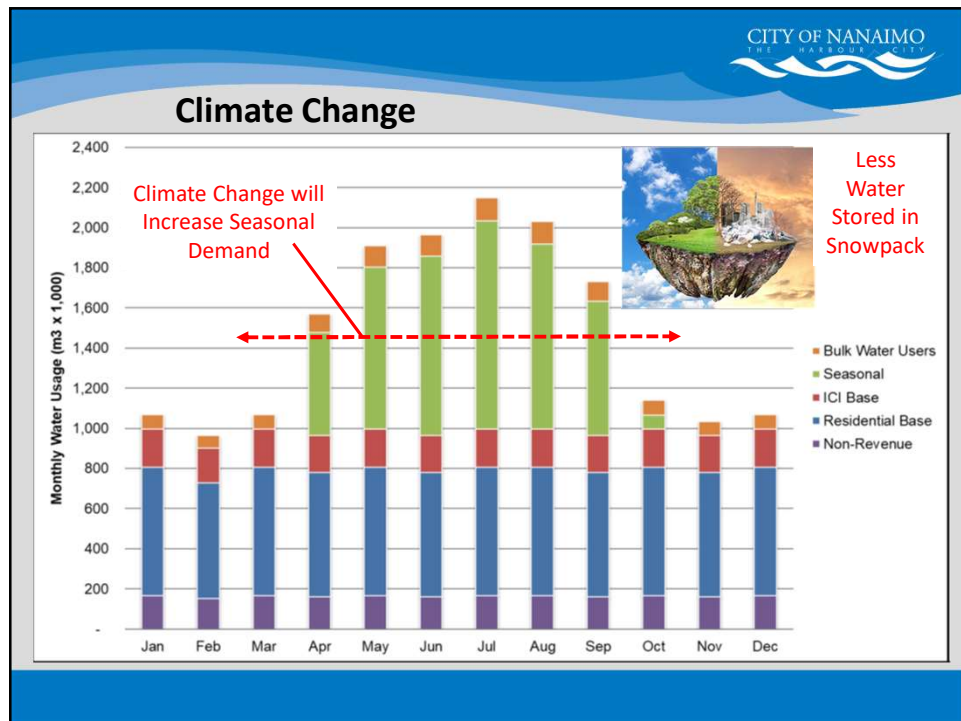
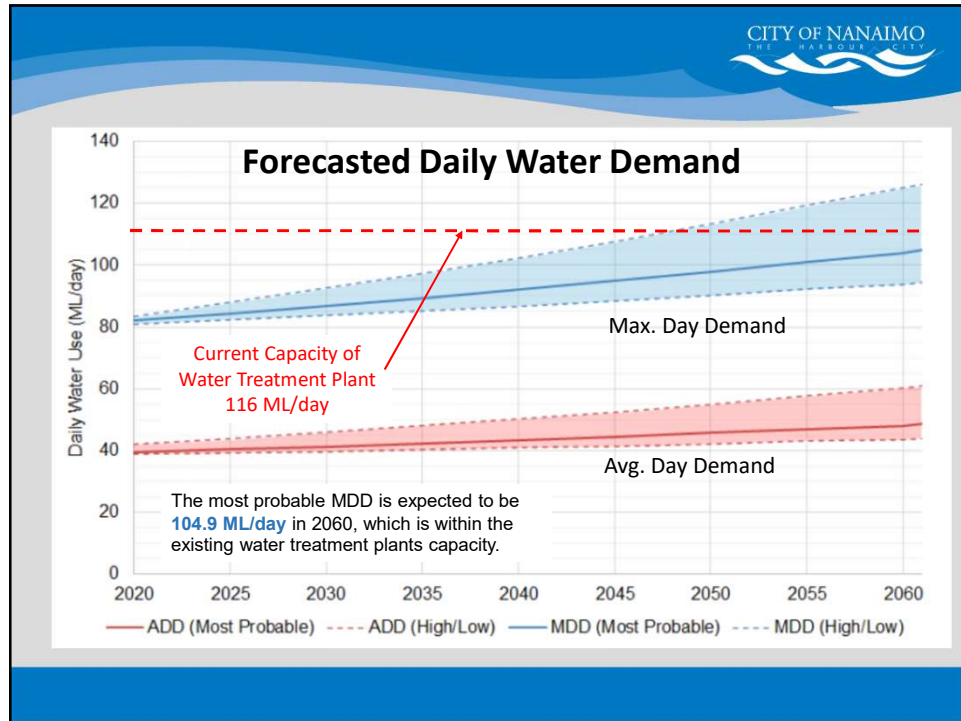
- Emergency Services – Fire Protection

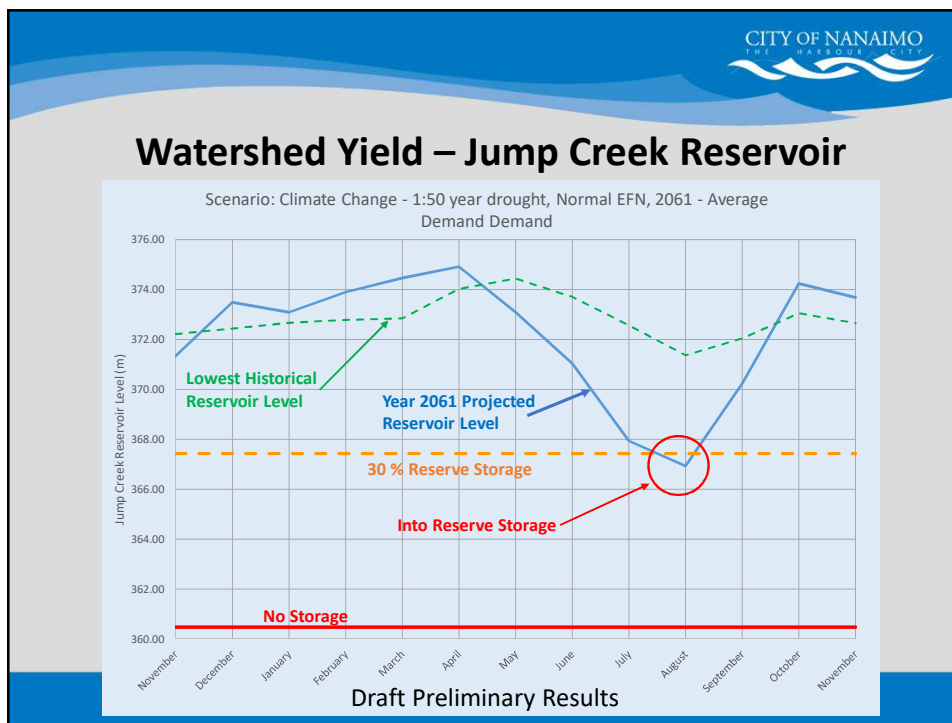
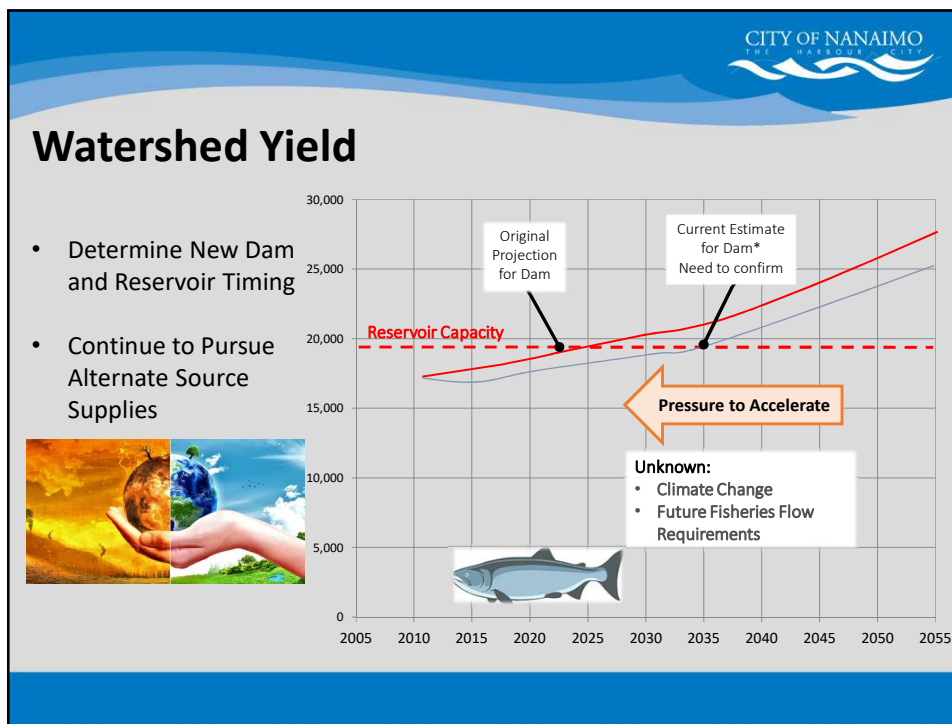


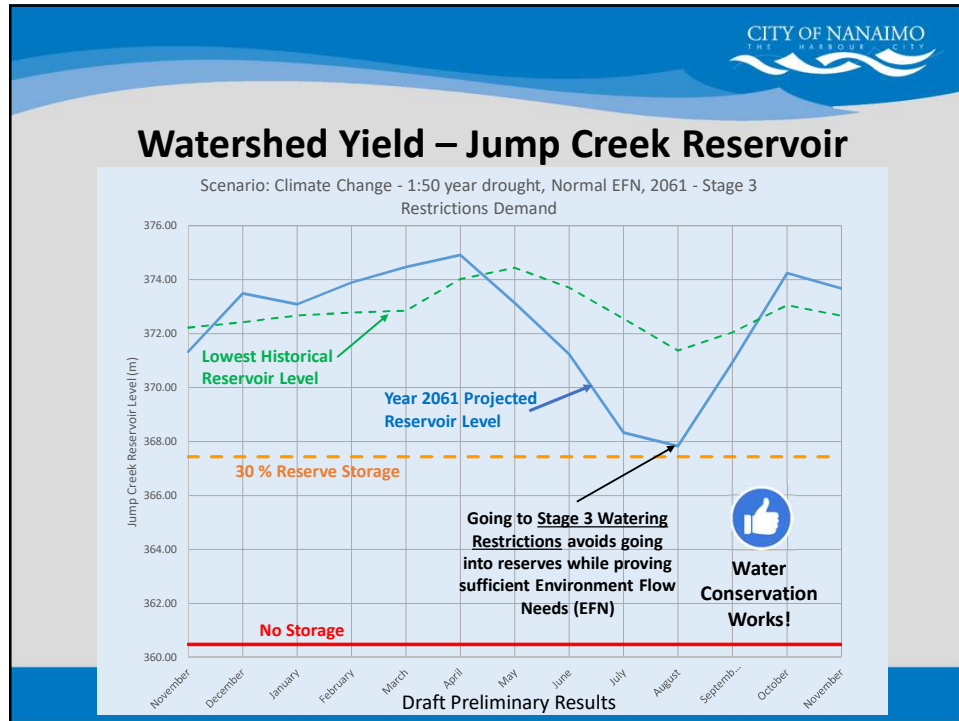



Approx. **70 %** of Above Ground Reservoir Storage and Watermain Capacity is Reserved for Community Fire Storage / Protection









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Preliminary Findings

- Possibility that with increased reservoir storage, it may not fill to max. storage during certain drought return events.
- There is sufficient storage in Jump Creek Reservoir storage to sustain extreme drought conditions with climate change, while providing Environmental Flow Releases for the next 20 years providing demand management practices are in place.

**Knowing this now
allows focus on:
BUILDING RESILIENCE**

CITY OF NANAIMO
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MID-TOWN WATER SUPPLY UPGRADES

First Significant Failure of a Primary Essential Service:

- April 3, 2020 - 22 million liters of water lost
- Three reservoirs drained, Hospital + 1000's without water
- \$ 250K in repair costs and damage
- Circumstances could have been considerably worse
- Condition of the pipe revealed other leaks and structural failure
- Consequence of future failures - extreme risk to water supply

Strategy:



- Emergency water supply shut-down procedure in-place
- 2021 – 2025 Capital Plan reprioritized and projects accelerated
- Towers Reservoir replacement deferred to 2024

2021 – 2023 \$28.8 Million

Preliminary Design Underway

Phase 1: A new water supply main from College Drive to Labieux Road. Upgrade and install a larger diameter water supply main to establish a new primary that can manage the demand of the system when Bowen WS is replaced.

Phase 2: Replace Bowen WS with smaller main (600dia) in existing alignment with slip lining and/or twin with Phase I works.

EXAMPLE of BUILDING RESILIENCE

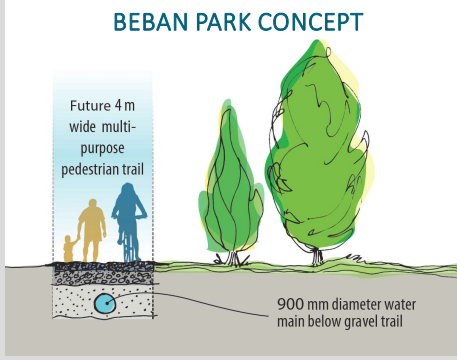
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MID-TOWN WATER SUPPLY PROJECT

Turning Tragedy into Triumph

The transmission mains will deliver treated water from the College Heights Reservoir to the Labieux Pump Station. With the proposed construction of the transmission main along the Parkway, opportunity exists to build a trail over top of the water main which will further enhance the community's walkable pedestrian network and provide a strong connection from the E&N Trail to the Parkway Trail. This will further strengthen trail way network connections to VIU, Westwood, Colliery Park, Buttertubs Marsh, Millstone, West Land Marsh and beyond.

BEBAN PARK CONCEPT



Benefits


- Multi-purpose pedestrian trail aligned with water main
- Increased supply and improved firefighting capabilities
- Improved water quality
- Enhanced operation and ability to efficiently deliver water demands

BUILDING RESILIENCE

CITY OF NANAIMO
THE HARBOUR CITY

MID-TOWN WATER SUPPLY PROJECT

Millstone River Crossing Concept



**Reviewing Options:
Over or
Under ?**

BUILDING RESILIENCE

CITY OF NANAIMO
THE HARBOUR CITY

MID-TOWN WATER SUPPLY PROJECT

Parkway Crossing Concept



**Reviewing Options:
Over or
Under ?**

BUILDING RESILIENCE

