

**Water Supply Capital Improvements & Operational Resiliency Efforts**

Governance and Priorities Committee

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**Strategic Importance & Governance**

Clean, safe, affordable drinking water is essential to sustain vibrant and healthy communities. The Water Supply Strategy defines how our communities grow and thrive.

The previous 2007 Water Supply Strategic Plan - main focus was on health and water quality improvements.





Old Reservoir No. 1 - 2014

South Fork Water Treatment Plant:  
Commissioned 2015

**Previous Direction**


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# Strategy Outcomes

- There is sufficient storage in Jump Lake Reservoir storage to sustain extreme drought conditions with climate change.

**Moved 25 + years**  
**> \$ 125 Million deferred**



South Fork Dam – Water Intake



**Recommendations:**

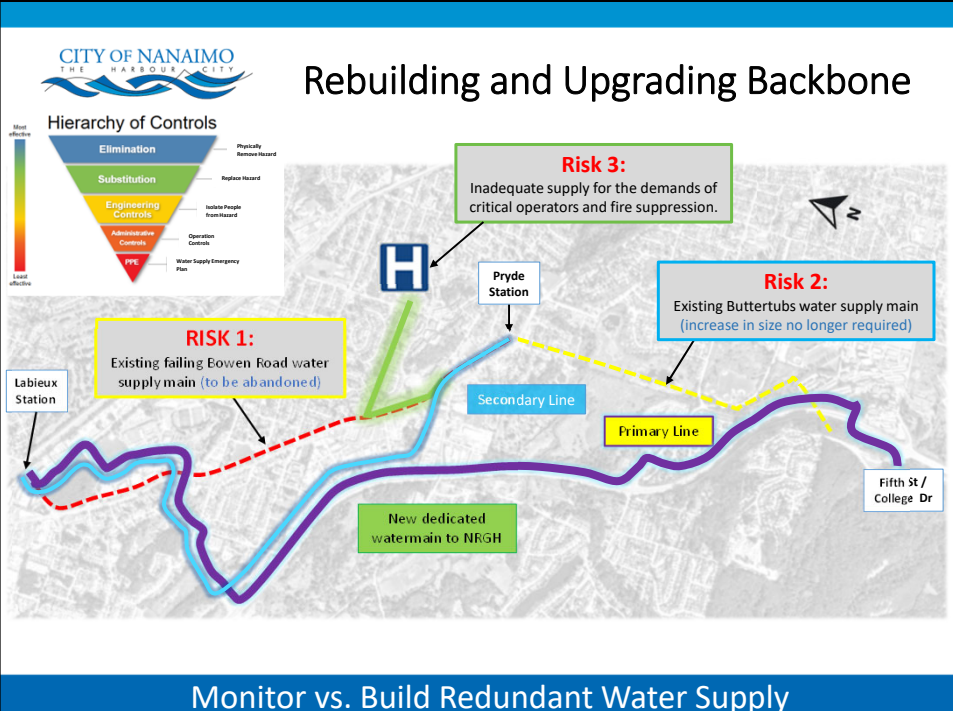
- Add secondary intake at South Fork Dam / Seismic Upgrade.
- Build redundancy into the Water Supply network.
- Treatment at emergency pump station.
- Support the growth projection priorities of the City Plan: Nanaimo Reimagined.
- Update Emergency Response Plan.

**Building a Resilient Water Supply**

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# Rebuilding and Upgrading Backbone



**Hierarchy of Controls**

- Elimination (Physically Remove Hazard)
- Substitution (Replace Hazard)
- Engineering Controls (Isolate People from Hazard)
- Administrative Controls (Operation Controls)
- PPE (Water Supply Emergency Plan)

**RISK 1:** Existing failing Bowen Road water supply main (to be abandoned)

**RISK 2:** Existing Buttertubs water supply main (increase in size no longer required)

**RISK 3:** Inadequate supply for the demands of critical operators and fire suppression.

Labieux Station

Pryde Station

Secondary Line

Primary Line

New dedicated watermain to NRGH

Fifth St / College Dr

**Monitor vs. Build Redundant Water Supply**

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**Positive Outlook:**


- 1) Midtown Water Supply Improvements completed 
- 2) Updated modelling shows strong supply capacity:
  - Major north end projects can be deferred:
    - Vandernuek Reservoir / Pump Station
    - Rutherford Road Supply Main 

**Projects can be moved 10 + years**



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**North End - Why Deferral Is Possible:** 


- System performance remains strong
- Future development needs supported
- Service levels maintained
- Improved resilience due to conservation + infrastructure upgrades

**Water Supply Projects Differed**

**> \$ 40 Million**

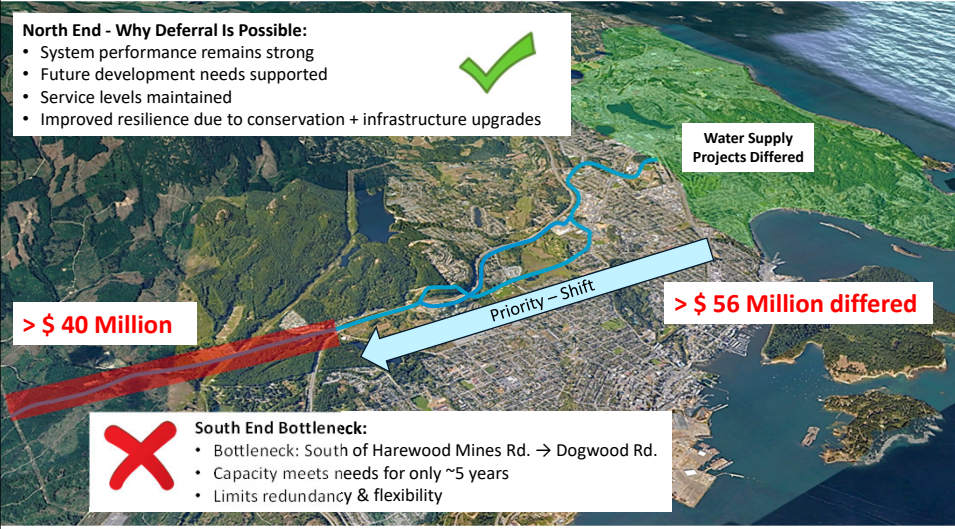
**Priority - Shift**

**> \$ 56 Million differed**

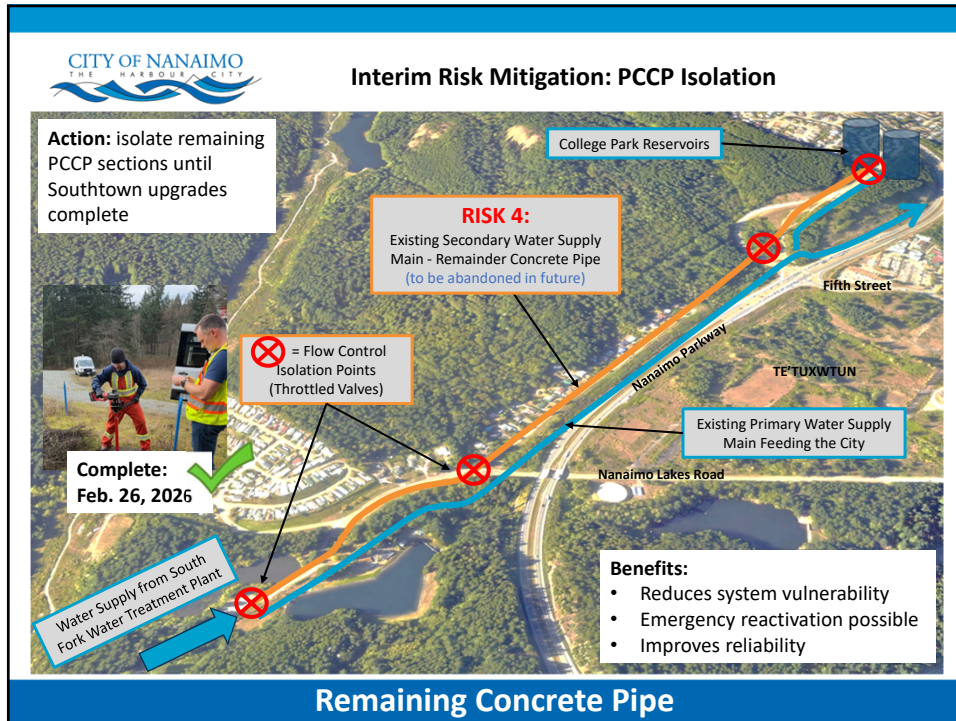
**South End Bottleneck:** 

- Bottleneck: South of Harewood Mines Rd. → Dogwood Rd.
- Capacity meets needs for only ~5 years
- Limits redundancy & flexibility

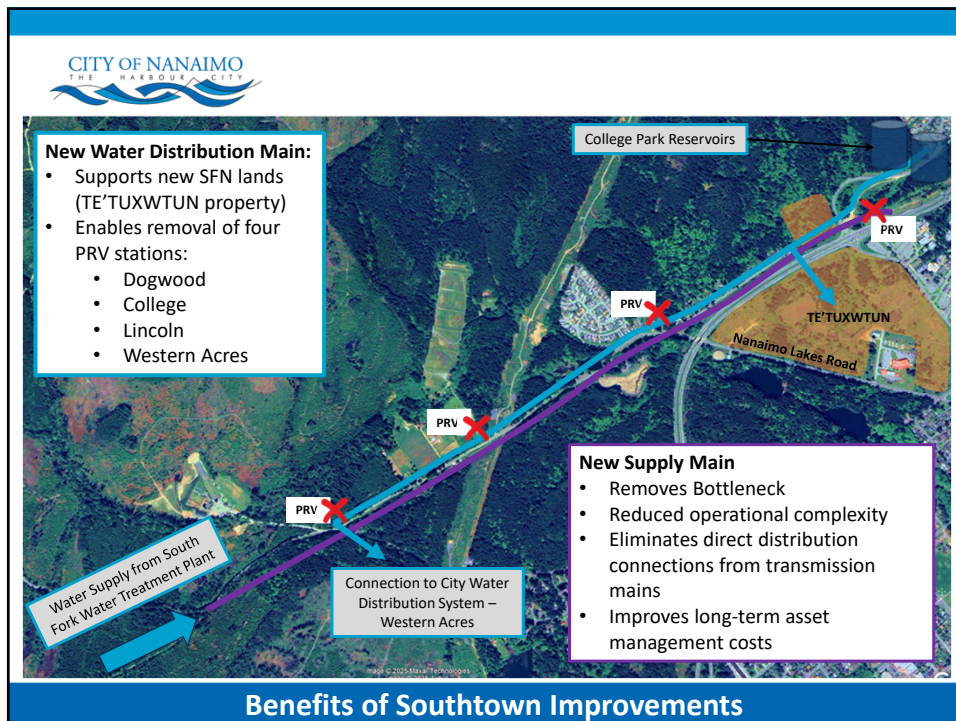
**South End - Priority**



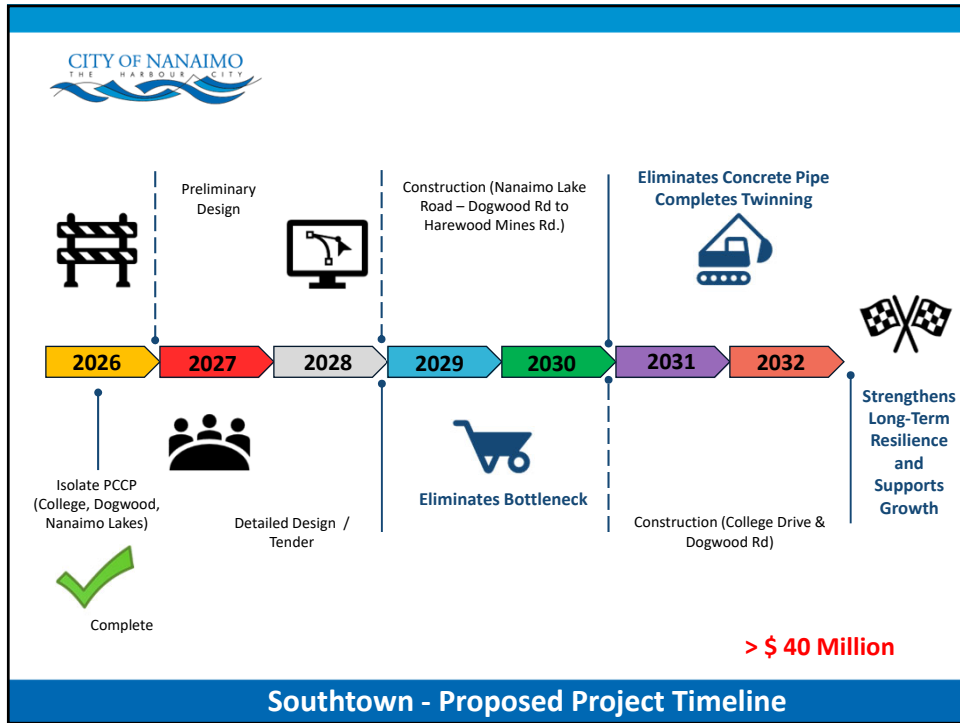
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**South Fork Dam Seismic Assessment:** ✓

- Initial seismic analysis results are favourable
- Dam marginally meets - CDA 1:5,000 event guidelines (2% probability – next 100 years)
- Major dam seismic upgrade can be deferred 15 + Years.

**Interim Measures:**

- Monitor and Install Seismic Gauges / Alarming
- Phase 2 - seismic modelling on foundation required

**However:**

- Three 24" holes.....

**South Fork Dam Intake**

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**However:** oldest 24" pipe infrastructure beneath the dam requires:

- Formal Condition Assessment or Mitigation Strategy Required

24" STEEL WATER SUPPLY MAIN.

**South Fork Dam Intake**

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**Risk Matrix**

	MEDIUM	HIGH	CRITICAL
↑ Probability	LOW	MEDIUM	HIGH
	LOW	LOW	MEDIUM
	→ Community Impact		

- All decisions aligned with formal risk registry
- Mitigation strategies address top-ranked risks
- Full 20-year Water Supply Capital Improvement Plan established
- Integrates modelling, deferrals, Southtown upgrades, and servicing needs

- Towers Reservoir
- Southtown Project
- Raw Watermain Upgrades
- Second Intake – South Fork
- Raw Watermain Upgrades
- Northtown Project
- South Fork Dam Seismic
- Second Clearwell
- Tanya Reservoir
- Treated Water Supply Upgrades

2026-2027 > \$ 47 Million

2028-2029

2030-2031

2032-2033 > \$ 35 Million

2034-2035

2036-2037

2038-2039 > \$ 70 Million

2040-2041

2042-2043 > \$ 50 Million

2044

**Balanced** SUSTAINABILITY (ENVIRONMENTAL, SOCIAL, ECONOMIC)


**Unbalanced** SUSTAINABILITY (ENVIRONMENTAL, SOCIAL, ECONOMIC)

Risk - Increase

**Risk Registry – 20 + Year Plan**

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- DFO reviewing Nanaimo River Environmental Flow Needs (EFN)
- Focus on supporting Spring/Summer Chinook
- City's share of flow = **25%**
- Remaining **75%** controlled by Harmac Pacific at Fourth Lake Dam

Environmental Flow Releases for Fisheries Rearing Flows

49%

Water Consumption - Domestic Use

51%


Annual Water Supply Dam Storage / Flow Release

- Follow the Nanaimo River Water Management Plan Guideline – for Operation

**Community and Environmental Needs**

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Managing  
*Tap into it !*  
Your Water

**Questions ?**

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