Joint Water Master Plan

Stage 2 and 3 Presentation

Joint Shared Services Committee
March 22, 2018
Process Review

- Define the planning scenarios
- Set levels of service
- Identify issues and opportunities
- Analyze, discuss, decide and report

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**Stage 1**
BACKGROUND REVIEW AND DATA ASSESSMENT
APRIL 2017

**Stage 2**
ANALYSIS AND EVALUATION
FALL / WINTER 2017

**Stage 3**
DRAFT PLAN
SPRING 2018

**Stage 4**
FINAL PLAN
MAY / JUNE 2018
Presentation Overview

- Reflect on Drivers and Principles
- Identify Core Investment Areas
- Review Engagement Activities
- Discuss Next Steps
Regional Water Supply Links with Each OCP

MAKE IT YOUR MISSION

- Green Infrastructure
- Plan to 200,000
- Strategic densification
- Commercial intensification
- Conserve + Meters
- Rural Enhancements
- Evolve Urban Areas
- 1.5% to 2.0% Growth in All Demands
- AgRefresh
- Low Impact Development

OUR WATER SYSTEM
Abbotsford & Mission

- 2 reservoirs
- 1 soda ash facility
- 19 wells (+ 2 mitigation wells)
- 1 Cannell Lake UV system
- 1 water treatment plant
- 95 km of water main
- 5 bulk water meters
The Joint Water System currently provides Potable water to approximately 164,000 residents in both the City of Abbotsford and District of Mission.

Water Source / Supply Study looked at:
- Water Conservation
- Optimization and
- Source Expansion
AMWSC Master Plan

- Set levels of service
- Define projects to address issues and opportunities
- Schedule projects and investments
- Recommendations to support implementation

AFFORDABLE  ADAPTABLE  SUSTAINABLE
Key Issues and Opportunities

- New Source for Supply Resiliency
- Enhance Security at Major Assets
- Prepare for Evolving Regulations (ie: WSA)
- Optimize Water Supply, Demands and Water Quality
- Prepare for Major Vulnerabilities
- Enhance Maintenance for Better Life Cycle Results
Key Issues and Opportunities

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New Collector Well Source:

- From the Water Source/Supply Study
- Phased/incrementable
- Affordable/sustainable
- Resilient
- Flexible Approach

RECOMMENDATION:

- Proceed with investigations for new source development.
- Budget:
  - $59M (2020-2023)
  - $17M (2041)
Key Issues and Opportunities

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Security

- **Watersheds**: enhance governance e.g. shared use, access control
- **Aquifer**: enhance governance e.g. land use and activities
- **Structures**: prevent unauthorized access

**RECOMMENDATION:**

- Establish joint-use agreements, protection plans, control access points and consider acquisition in select areas
- **Budget:**
  - Study's: $250k
  - Security Systems Upgrades: $200k (TBD)
Key Issues and Opportunities

1. New Source for Supply Resiliency
2. Enhance Security at Major Assets
3. Prepare for Evolving Regulations (ie: WSA)
4. Optimize Water Supply, Demands and Water Quality
5. Prepare for Major Vulnerabilities
6. Enhance Maintenance for Better Life Cycle Results
New Regulations and Guidelines

- Water Sustainability Act
- BC Drinking Water Protection Act and Regulation
- Guidelines for Canadian Drinking Water Quality

RECOMMENDATIONS:

- Filtration of Cannell Lake: plan to preserve “avoidance” classification
- Groundwater Licensing: note: applications underway
- Groundwater at Risk of Containing Pathogens: monitor and complete GARP screening
- Manganese: prepare for new guidelines and adapt as needed
- pH: continue to monitor for water quality and corrosion risks;

- Study’s: $500k
- pH Upgrade: $15M (if deemed necessary)
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Optimization

- Update water conservation program blueprint
- Adding Zone 4 Reservoir for reliable supply conditions to Mission
- Review operations of Best Ave. Pump Station
- Optimize Dickson Lake storage e.g. fish and climate

Conservation Target

0.35% annual reduction
RECOMMENDATION:

- Proceed with Zone 4 Reservoir, upgrade Dickson Lake Storage and Best Ave. Booster Station.
  - Zone 4 Reservoir: $15M
  - Dickson Lake Expansion: $10M
  - Best Ave Booster Station: $2.0M
- Updated water conservation blueprint and increase annual conservation budget: $250K/year
Key Issues and Opportunities

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Vulnerability

• System can be compromised when Norrish Creek unavailable (water quality or pipeline)
• Majority of supply is located on opposite side of Fraser River from demand
• Adapt to drought with more supply

RECOMMENDATIONS:

• Add Collector Well on South Side of Fraser River
• Update Seismic Vulnerability Assessment and update design guidelines. – $250k
• Upgrade costs for seismic $5.0M (if deemed necessary)
• Review fuel storage requirements
• Update SCADA communications in remote areas – $250k (TBD)
• Update Emergency Response Plans – $100k
Key Issues and Opportunities

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Preventative Maintenance and Asset Management

- Maintain financial resources
- Prioritize renewal based on risk, need and knowledge
- Create performance review templates
- Consider long-term investment policy

RECOMMENDATION:
- Adopt new evaluation policy for inspecting and responding to asset deterioration including repairs, renewal and funding – $250K study.
- Annual average investment level of $2M- $2.5M
Proposed Annual Capital Expenditures

ANNUAL EXPENDITURE (MILLIONS)

MILLIONS

2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041

New Source Expansion

$59M

Dickson Lake Optimization

$10M

New Source Expansion

$17M

Optimization Projects

$17M

Water Quality PH

$15M

Potential grant (2/3 proj. costs)
Proposed Annual Capital Expenditures - Highlights

- Long term affordable plan
- Similar expenditure levels as previous plan
- AMWSC major projects are expected to be funded 2/3 by grants
- Future master plans (every 5 years) to review and update

Funding Sources

- Grants
- Community Works Fund
- DCC
- Reserves
- Debt *

* Only if required
Engagement

COUNCIL
- UMC (April 26)
- JSSC (May 18)
- Abbotsford Council Workshop (May 25)
- Mission Council Workshop (July 10)
  - Stage 1:
    - UMC (October 26)
    - JSSC (November 9)
  - Stage 2 & 3:
    - UMC (Feb 21)
    - JSSC (March 22)

PUBLIC EVENTS & ONLINE ENGAGEMENT
- Farmers Market (Stage 1)
- Canada Day (Stage 1)
- Abbotsford Seven Oaks Mall (Stage 2)
- Mission Leisure Centre (Stage 2)
- Website presence and updates (Stage 1 & 2)
- Social Media updates via Twitter, Facebook and Instagram (Stage 1 & 2)
Next Steps

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ENGAGE PUBLIC
Recommendation

To receive and approve to proceed to public engagement on Stage 4 of the Draft Joint Water Master Plan.
QUESTIONS / COMMENTS ?