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# Alma water distribution system update

## Village of Fundy Albert

August 1, 2023

2207667



# Agenda



- Introduction
- Water system overview & capacity
- July 2023 boil water advisory
- High water usage investigation
- Temporary water supply
- Water system upgrade
  - Water supply options review
  - Phase 1: Exploration
  - Phase 2: New infrastructure
  - Anticipated timeline
- Questions/discussion



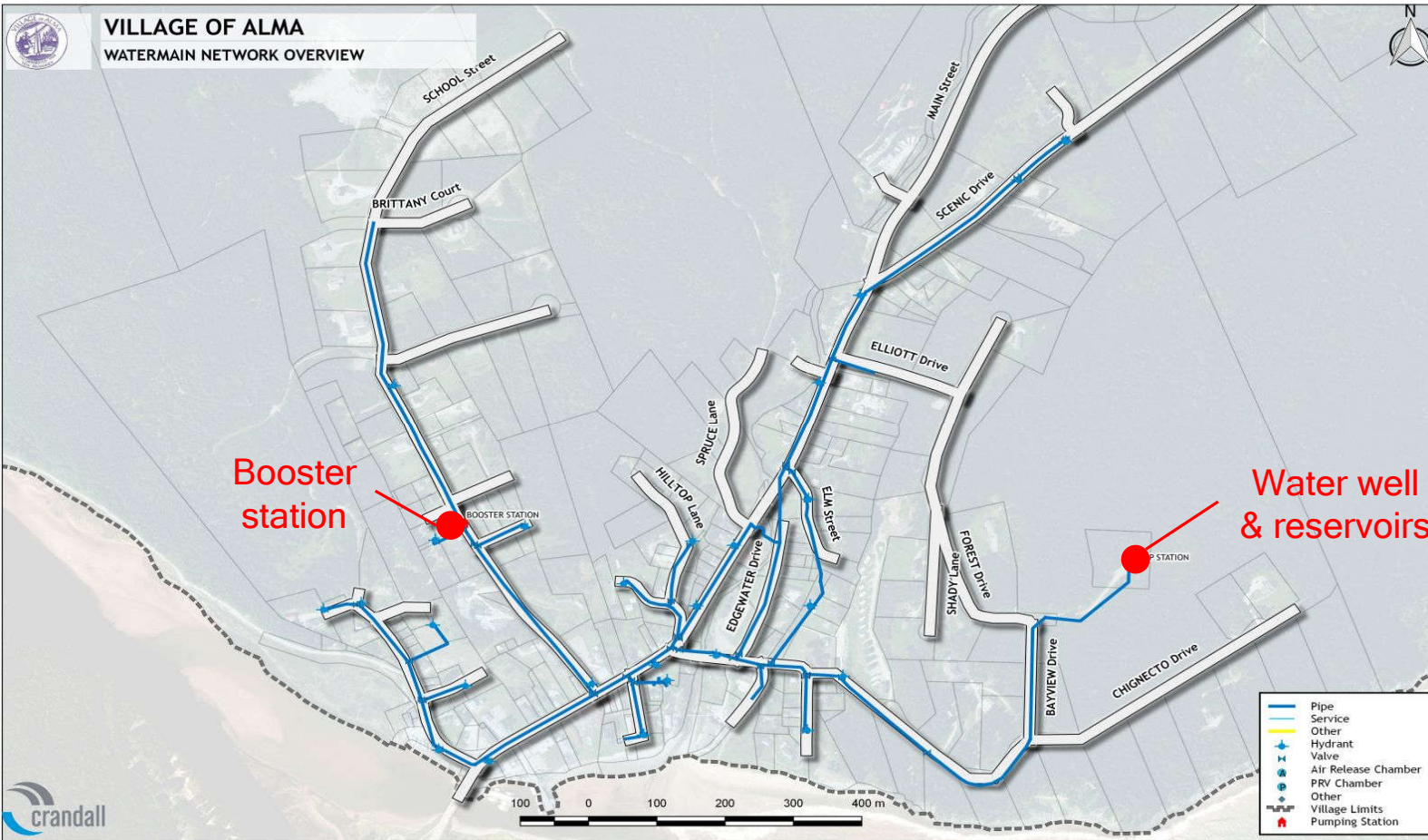


# Englobe at a Glance

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# Existing water system overview & capacity



## Pumping capacity

**Pump #1**  
3.0 l/s (11 m<sup>3</sup>/h)  
**Pump #2 (backup only)**  
0.6 l/s (2 m<sup>3</sup>/h)

## Holding capacity

**Reservoir A**  
36,720 liters (37 m<sup>3</sup>)  
**Reservoir B**  
24,300 liters (24 m<sup>3</sup>)  
**Total**  
61,020 liters (61 m<sup>3</sup>)

## Distribution network

**Watermain 5.4 km**

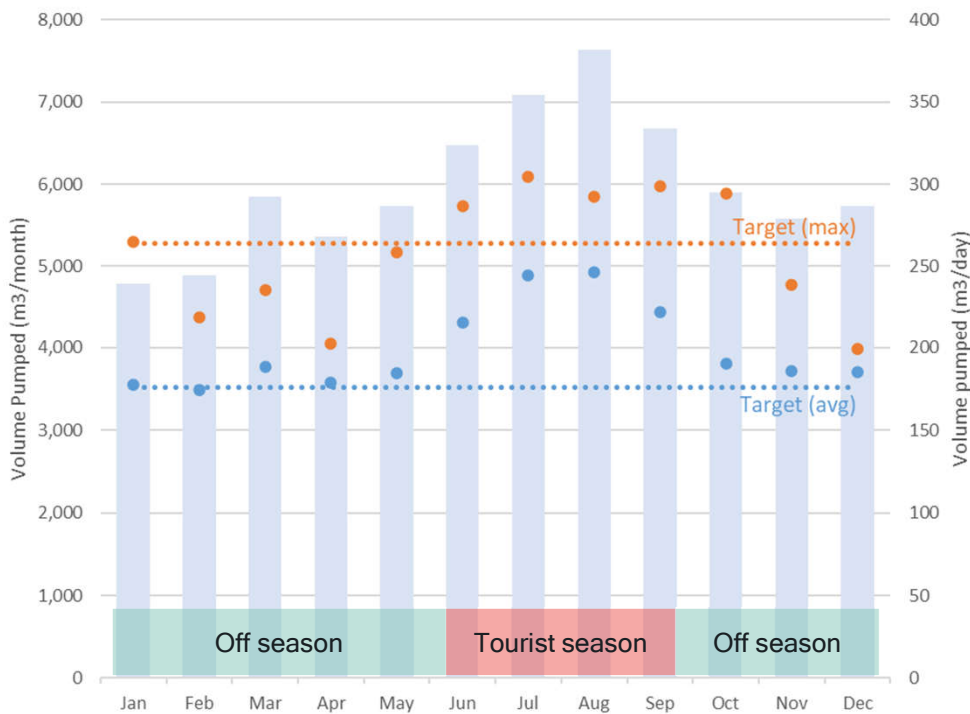
150 mm -	4.3 km	(80%)
100 mm -	375 m	(7%)
50 mm -	695 m	(13%)

# Existing water system overview & capacity

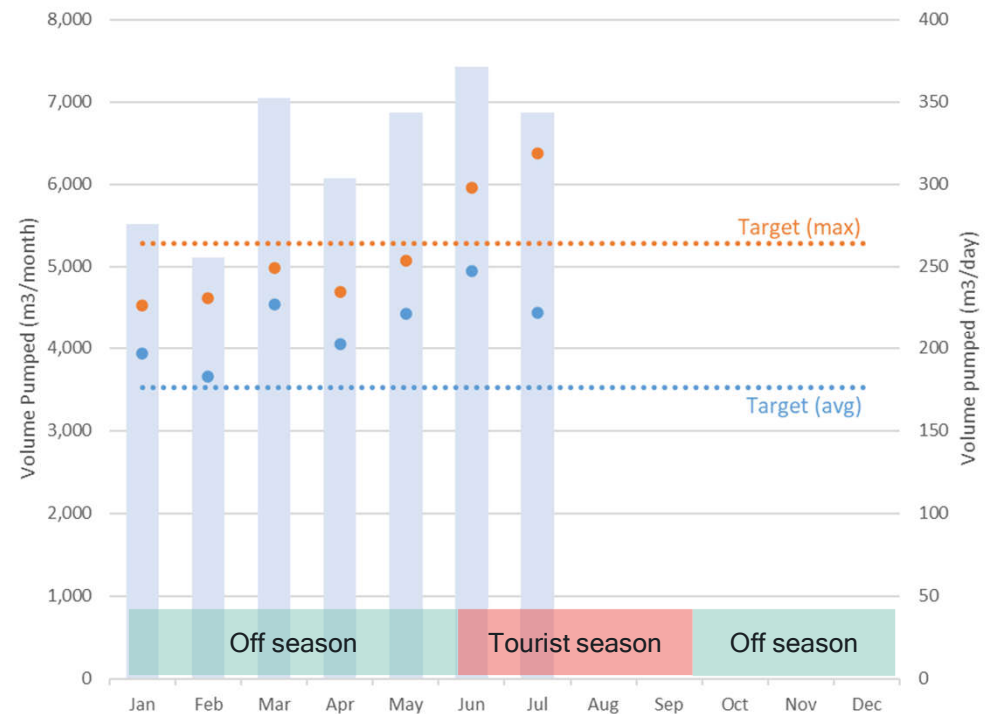
Pump#1 recommended targets: 12h: 132 m<sup>3</sup>/day  
 (11 m<sup>3</sup>/hour)  
 16h: 176 m<sup>3</sup>/day  
 24h: 264 m<sup>3</sup>/day



2022 Monthly Results - Water Usage



2023 Monthly Results - Water Usage



- Total Monthly Volume Pumped (m<sup>3</sup>)
- Maximum Daily Volume Target
- Maximum Daily Volume Pumped (m<sup>3</sup>)

- Average Daily Volume Target
- Average Daily Volume Pumped (m<sup>3</sup>)



# July 2023 boil water advisory

## Reasons for boil water advisory

- High turbidity levels
- Unable to replenish water reservoir
- Rain events
- High water demands



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## NOTICE TO ALMA RESIDENTS:

### BOIL WATER ADVISORY, EFFECTIVE IMMEDIATELY

Wednesday, July 5, 2023

We are currently experiencing high levels of turbidity in the reservoir – These levels exceed the New Brunswick maximum acceptable concentrations. We have been in contact with the Department of Health and Alma has been issued a **BOIL WATER ADVISORY, effective immediately**. It is recommended to boil (rolling boil) your water for one (1) minute before consumption, including mixing juice, dental hygiene, washing vegetables, making ice or any other activity requiring human consumption. Baby formula should be mixed with bottled water. Young children should be sponge bathed to avoid ingestion.

This **BOIL WATER ADVISORY** is in effect until further notice. Updates will be available on the Village of Fundy Albert's website at [www.fundyalbert.ca](http://www.fundyalbert.ca) and the Village of Fundy Albert's Facebook page.

Thank you for your cooperation.

*Please use your water wisely.*

# High water usage investigation

July 11 to 13, 2023

Water  
consumption  
observations &  
measurements

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## No major issues found

- Sinks
- Commercial dishwashers
- Laundry washing machines
- Total number of rental properties
- Water conservation measures already in place in most businesses



# High water usage investigation

July 11 to 13, 2023

Alma  
seasonal  
population  
fluctuation

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282

Residents (2021 census)



5,000 +

Summer weekly visits (anecdotal)





# Temporary water supply from Fundy National Park

Connection to FNP water system (50mm Ø line)

Photo 1  
Crossing the bridge

Photo 2  
Coming from the FNP water supply system

Photo 3  
Connection to Alma water supply

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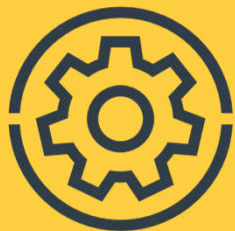
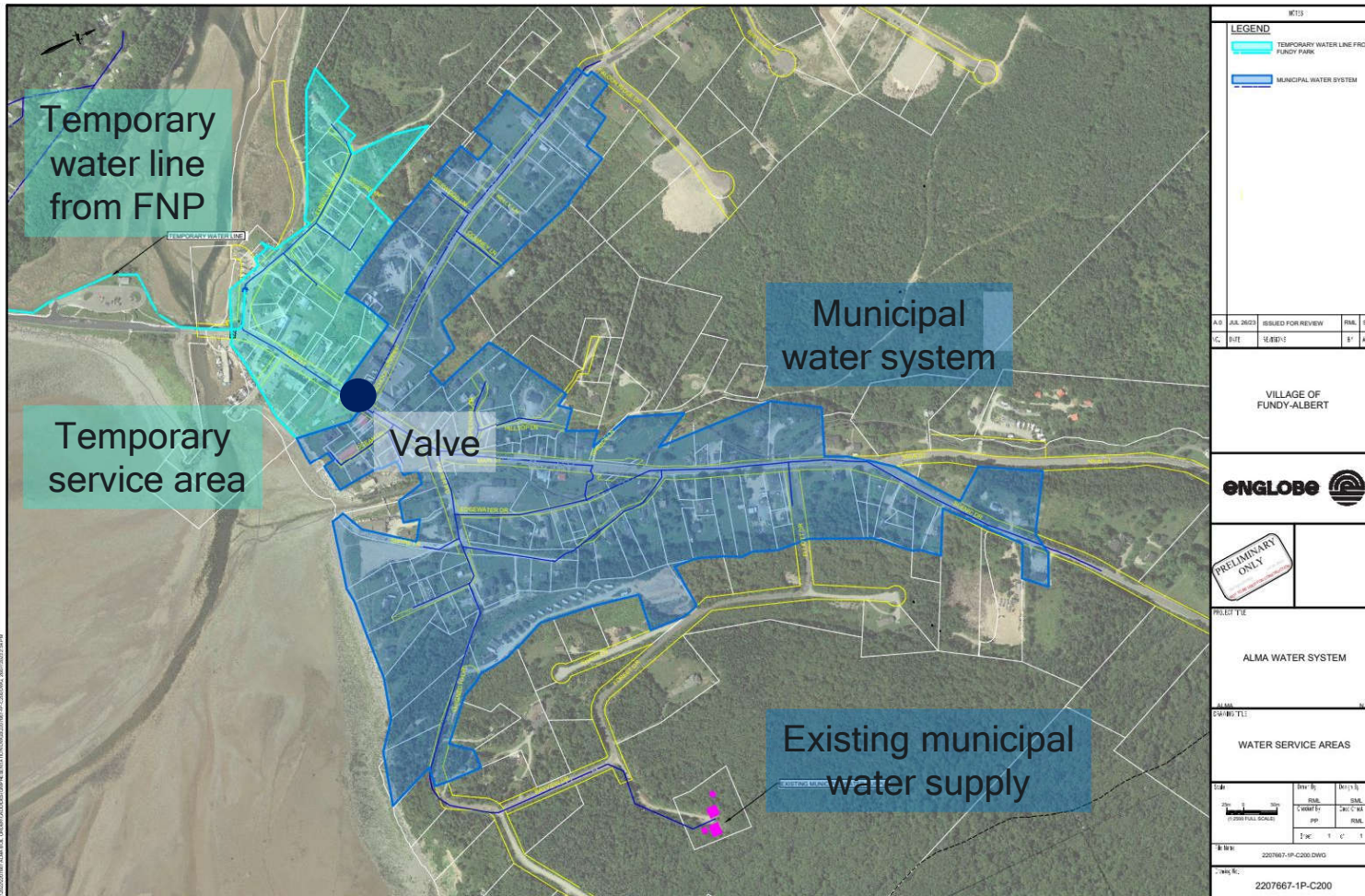


Image source: Fundy Albert Facebook page



# Temporary water supply: Water line from FNP



The water from Fundy National Park is treated, disinfected, and properly monitored.

The existing well will continue to distribute water from the reservoir on Forest Drive to and including School Street.



# Water system upgrade: Water supply options reviewed



1

Permanent connection  
to FNP

- Seasonal operation
- Complex agreement required with the Federal Government
- Bridge Crossing - Agreement required with the Province of NB (HUP Permit)
- Not in full control of water system

2

**New municipal  
wells**

**Most favorable option**

- Inground water vs surface water
- No agreements are required from Federal and Provincial Agencies
- Full control of the water system and future growth

3

Surface water  
intake

Last resort option if  
the two previous  
options are not viable





# Water system upgrade: Phase 1

- Environmental Impact Assessment (EIA)
- Indigenous consultation
- Landowner agreement
- Exploratory drilling - Total of three (3) sites
- Well construction
- Sampling
- Pumping tests
- Provincial approval process

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# Water system upgrade: Phase 1 - Current timeline



<p>2019 2023</p>	<p><b>Environmental Impact Assessment</b></p>
<p>2020 2021</p>	<p><b>Drilling at sites No. 1 &amp; 2 yielded unfavorable results</b></p>
<p>2022 2023</p>	<p><b>Drilling at site No. 3: Preliminary results are favorable</b></p> <ul style="list-style-type: none"> <li>• 2 - test wells - 72h pump tests (scheduled for August 2023)</li> <li>• Hydrogeological assessment (yield assessment - September - October 2023)</li> <li>• Provincial approval process (November - December 2023)</li> </ul>



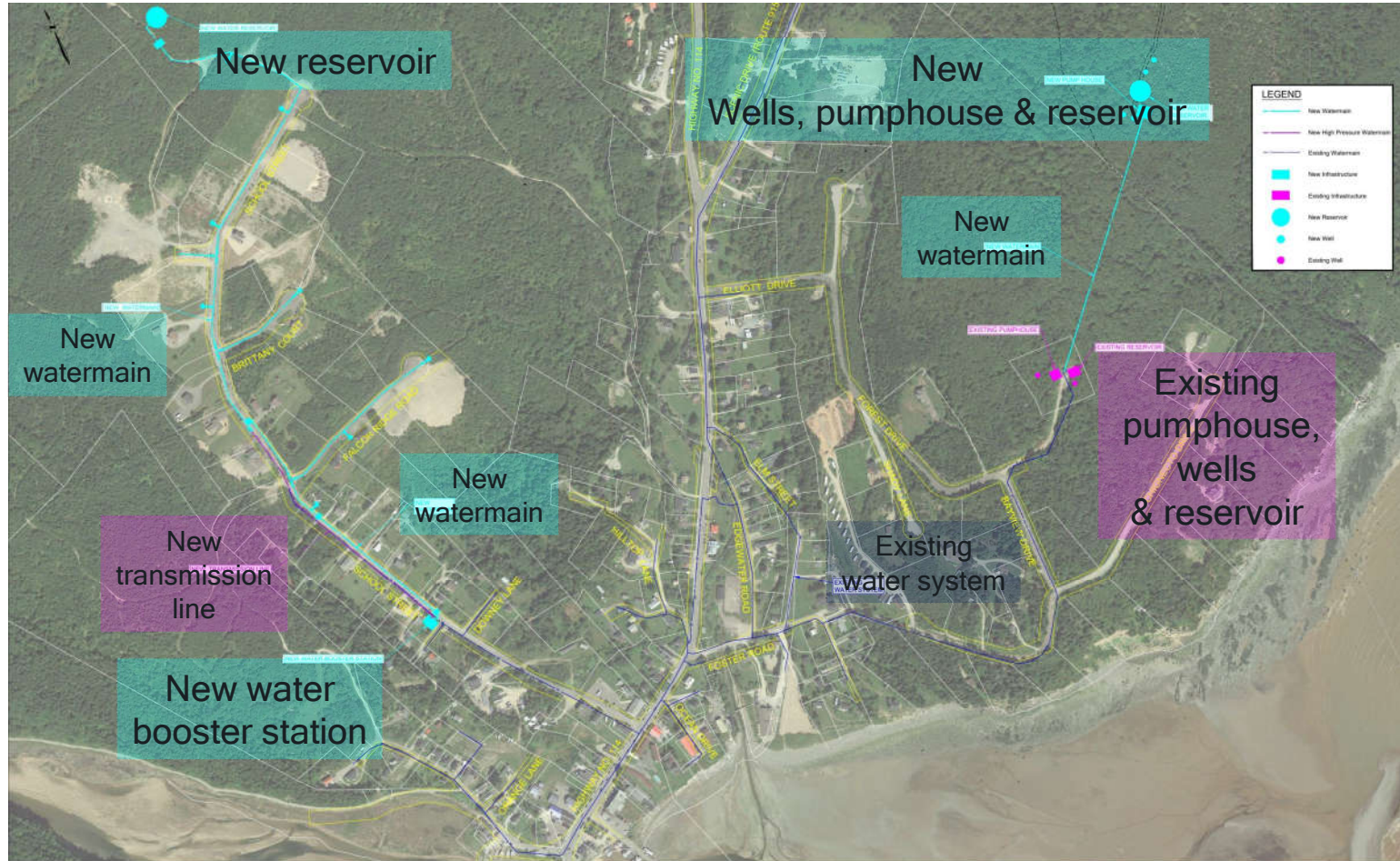
# Water system upgrade: Phase 2 - New infrastructure



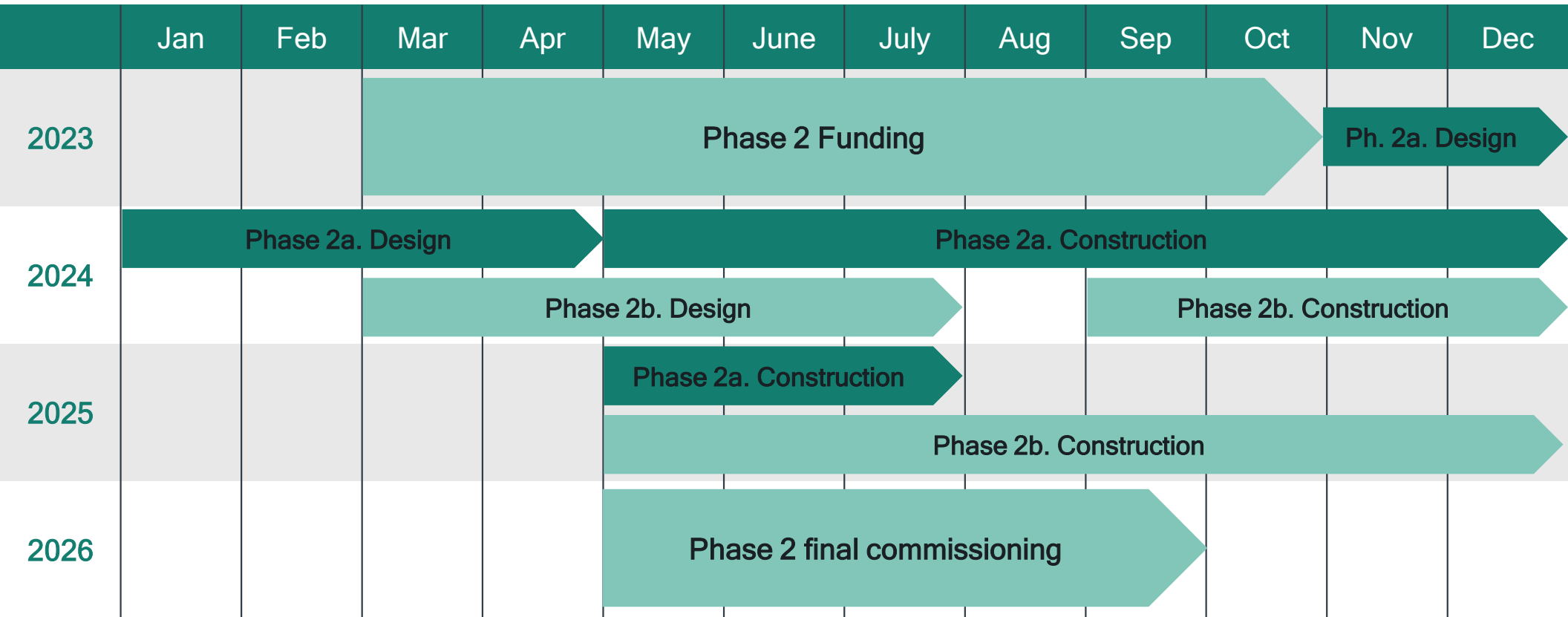
New system  
target pumping  
capacity  
 $> 6.3$  l/s

Existing system  
target pumping  
capacity  
 $\pm 3.0$  l/s

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# Water system upgrade: Phase 2 - Anticipated timeline





# Water system upgrade: Total capital cost and annual user fees

## Phase 2 - Total Capital Cost - \$12.24M

- Federal and Provincial Contributions: (93.33%) - \$11.42M
- Municipal Contribution: (6.67%) - \$820,000

## Annual user fees:

### • Factors influencing rates:

- Total long-term loan repayment (Capital and interests over 20-25 years - Typical)
- Annual operation and maintenance costs, including major upgrades over 25 years
- Total number of users

### • Preliminary analysis:

- Current annual water fee - \$356 / unit
- Comparable municipalities with major upgrades recently completed:
  - Memramcook - \$570 / unit
  - Saint-Louis-de-Kent - \$536 / unit
- Complete Rate Study for Alma will be completed as part of the major system upgrade
  - Expected water rate to be similar to the recently upgraded systems





# Questions / Discussion



Thank you for your patience  
and your participation!



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