



Reclaimed Water Project Regional Watershed Benefits

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By

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Watershed Steward

City of Dawson Creek



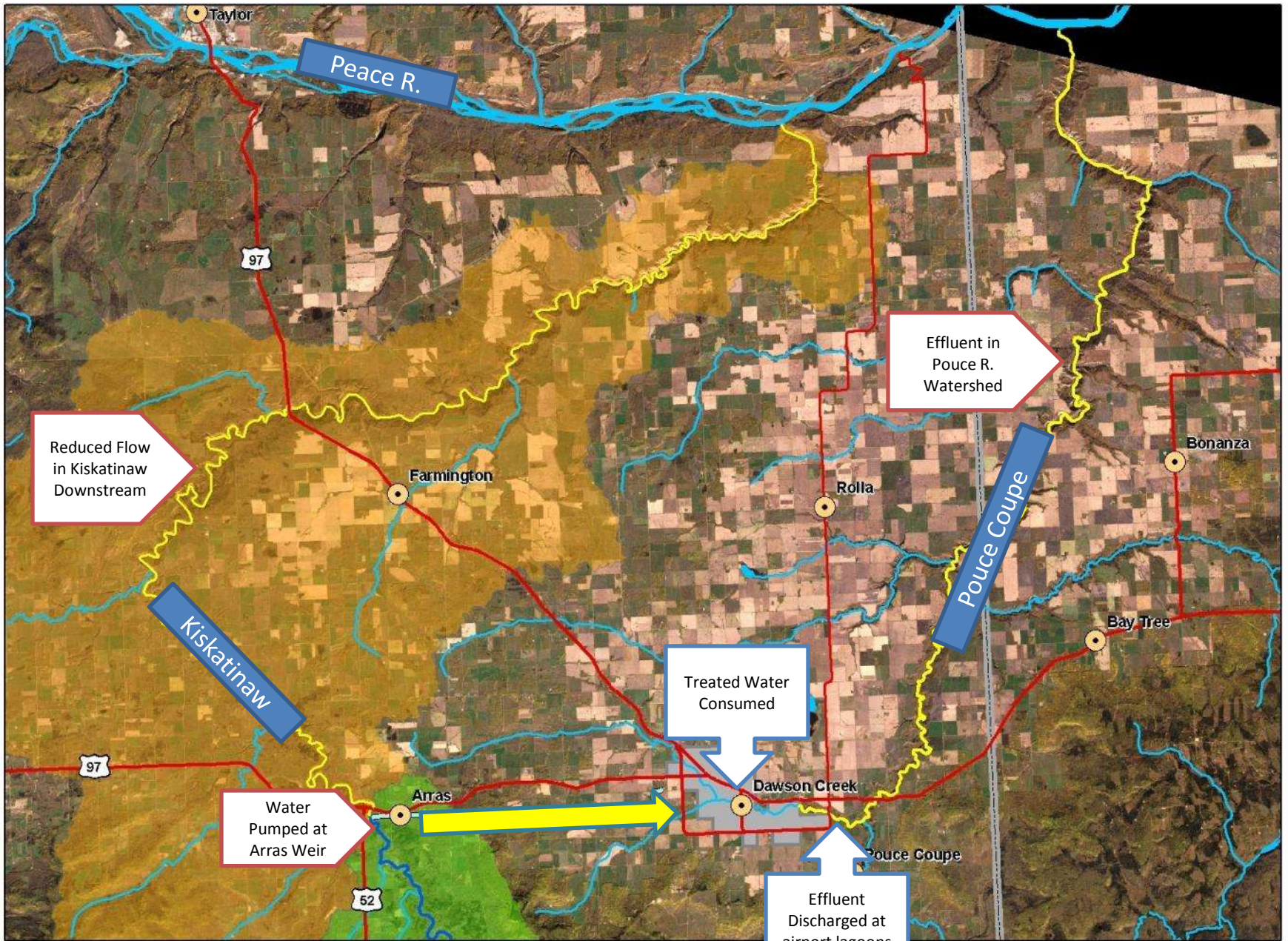
City of Dawson Creek - Water & Environmental



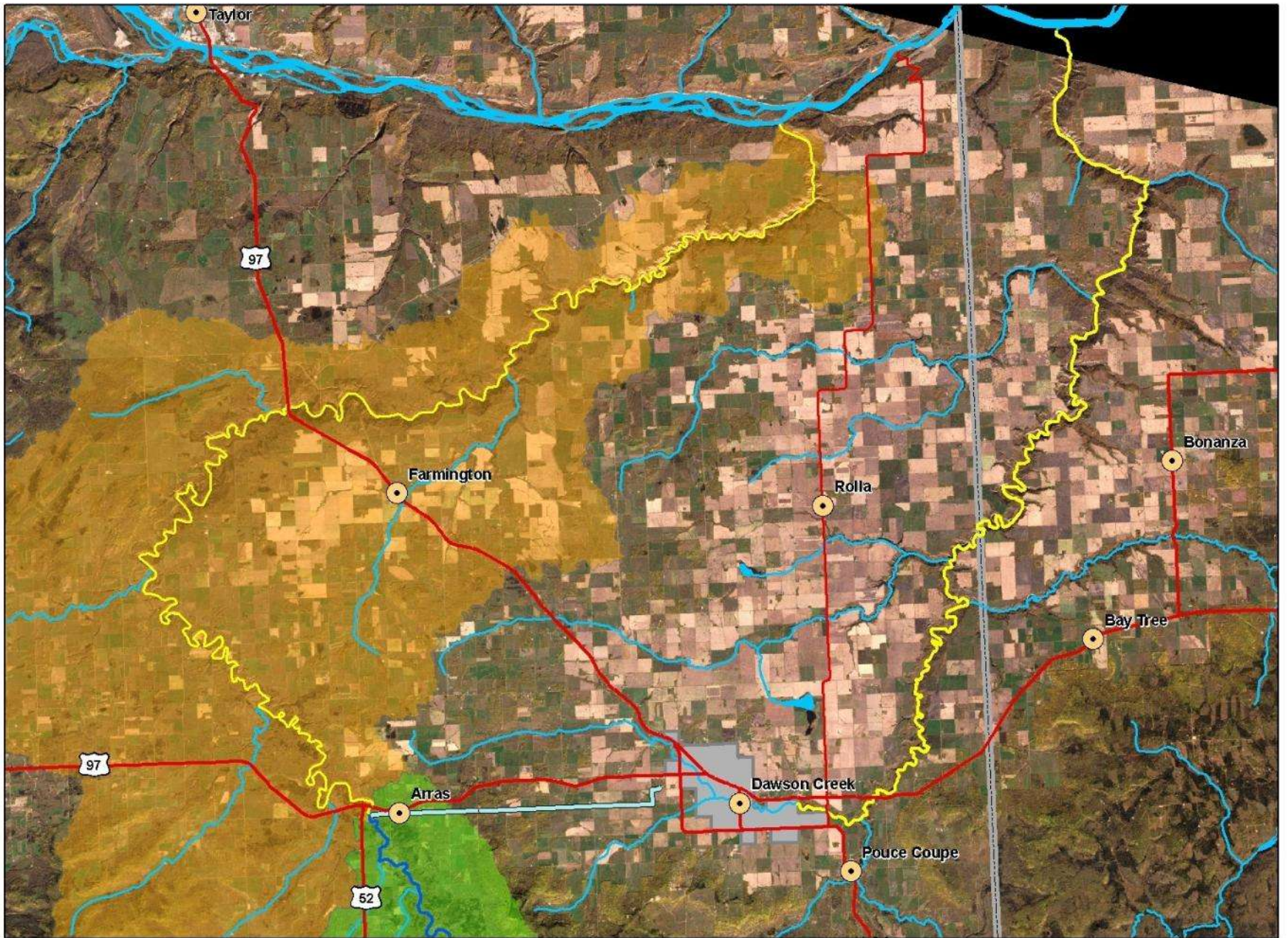
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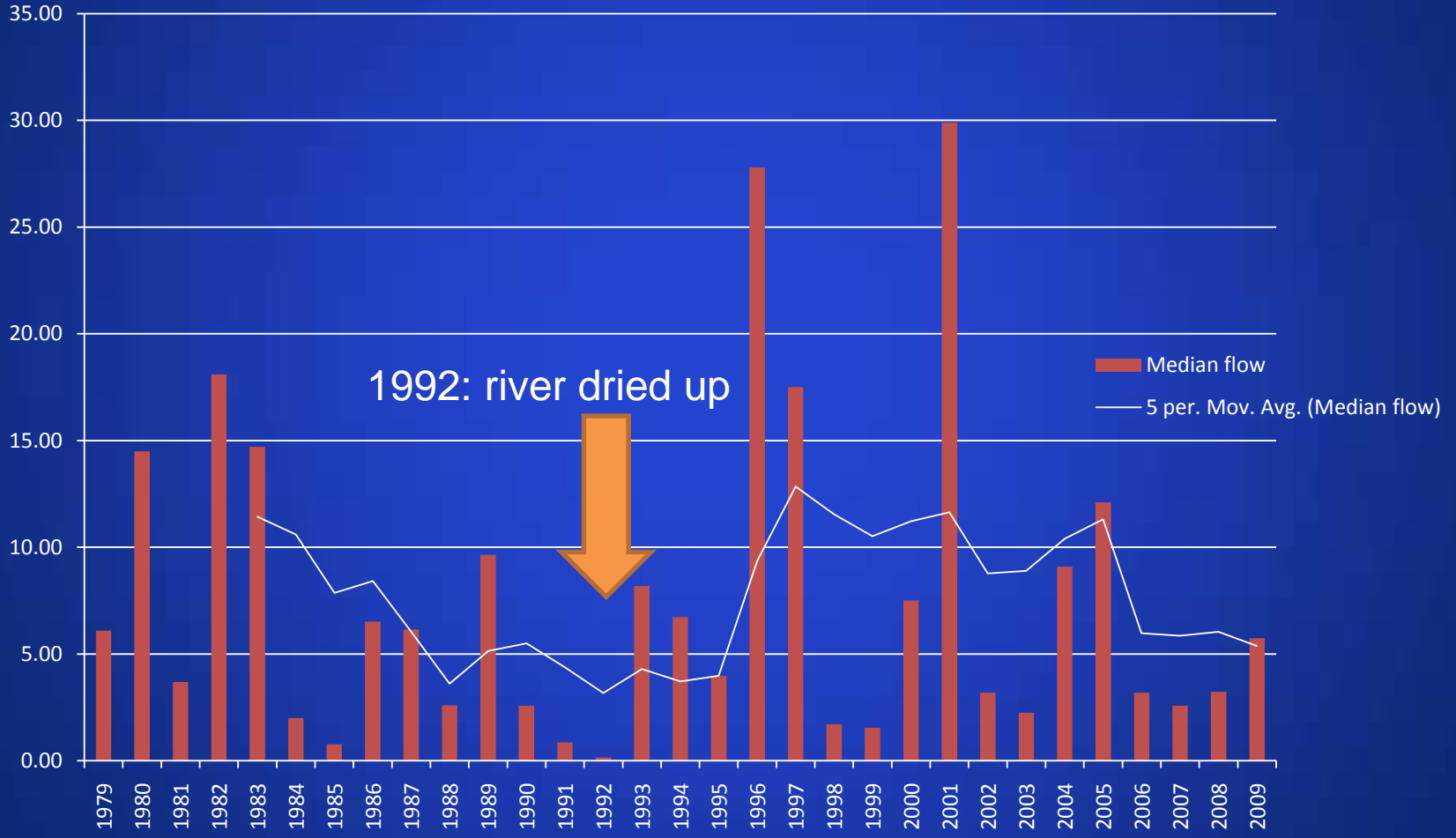


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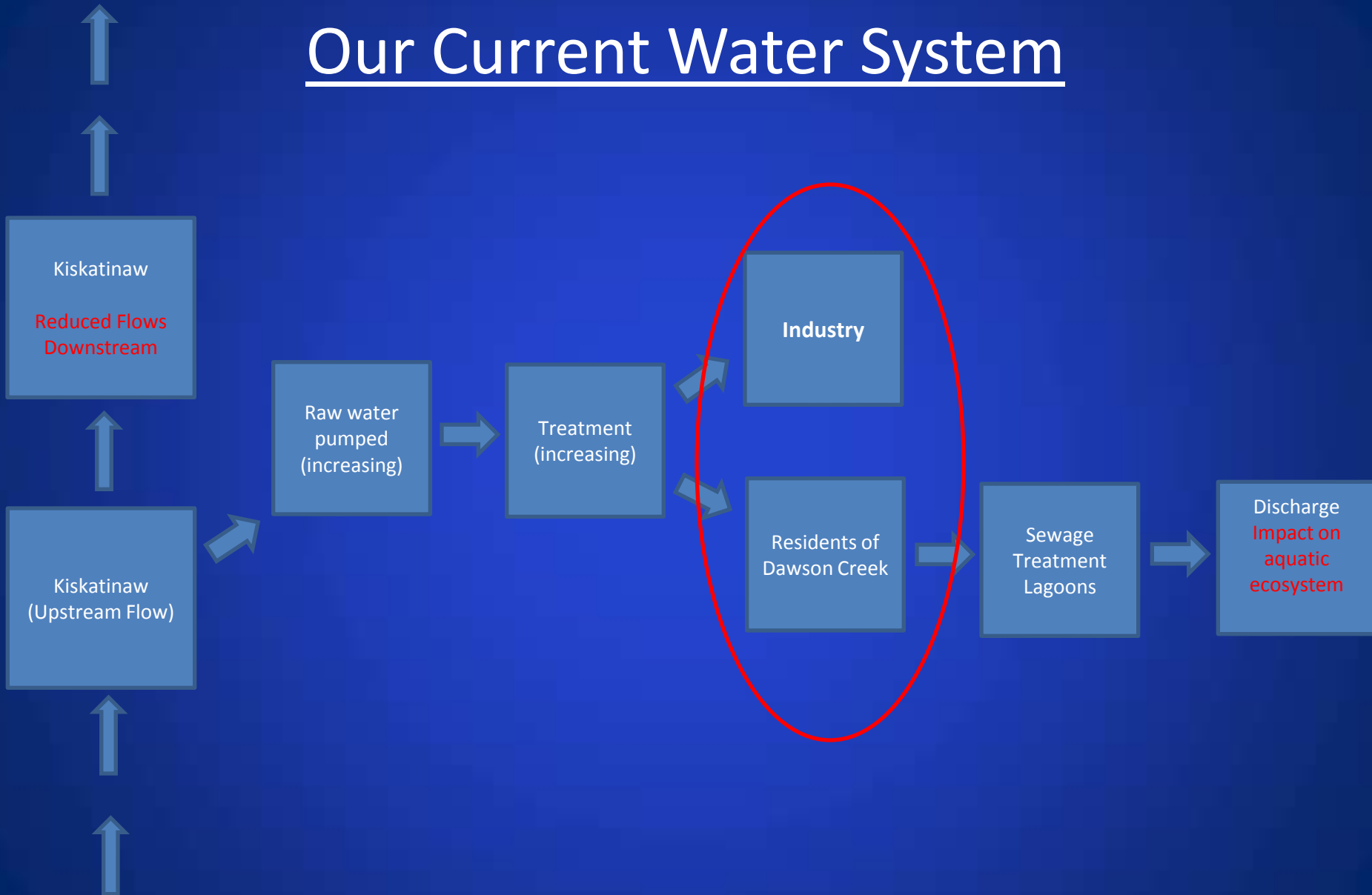
Kiskatinaw River Median Summer Flow (m³/s)



So What Is The Problem?

- Kiskatinaw is a river system with variable flows and is prone to drought.
- Instead of using less water, we are using more than ever.
- We are approaching our withdrawal limit on our water license, as well as physical infrastructure limits.

Our Current Water System



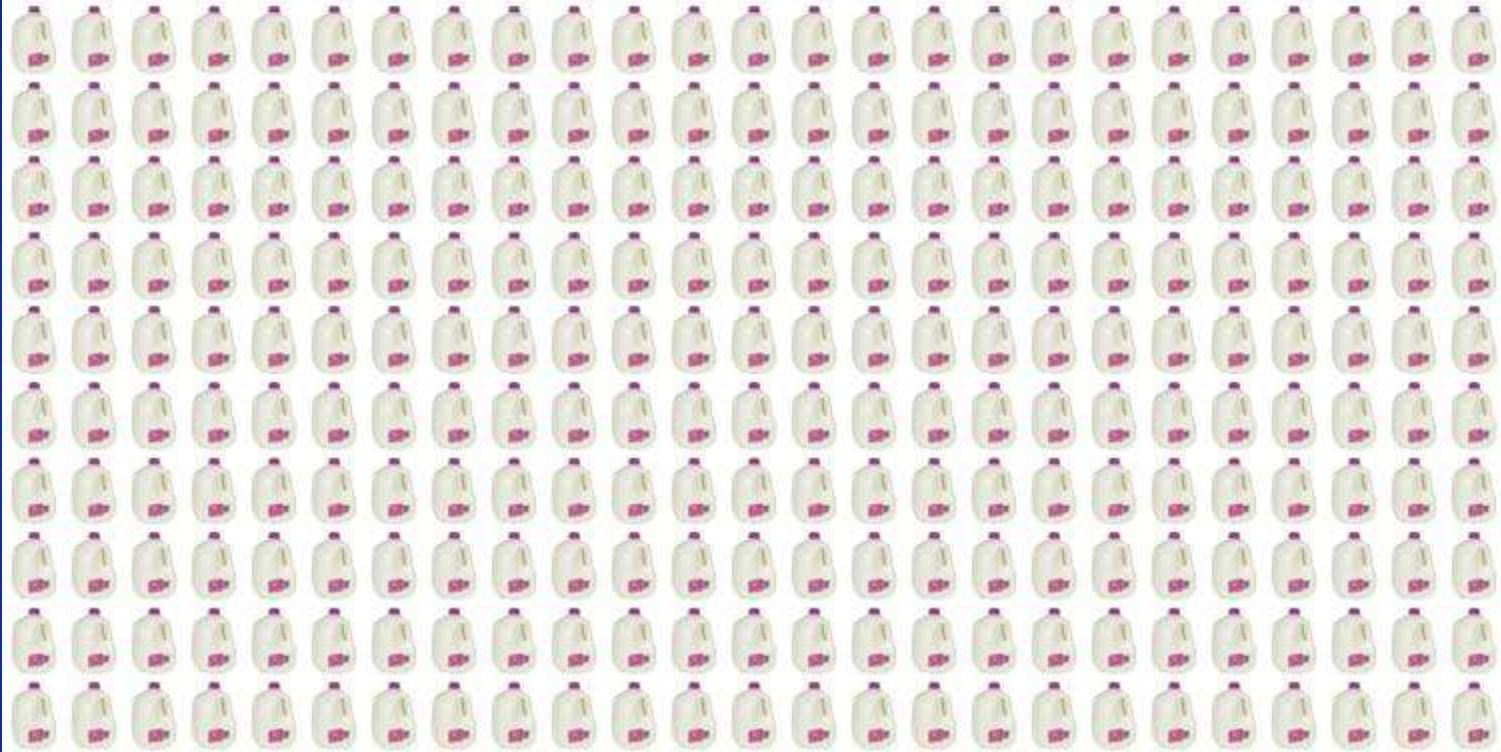
Water Volumes = cubic meters



1 milk jug = 4 Litres

1000 Litres = 1 m³

Water Volumes = cubic meters



250 Milk Jugs = 1 cubic meter

Water Volumes = cubic meters



Water truck = 35 cubic meters (8750 milk jugs)

Water Volumes = cubic meters

- 2009 in Dawson Creek, annual residential water usage per person is 70 m³ per person
- Or 2 water trucks.



= 70 m³ = annual use per person

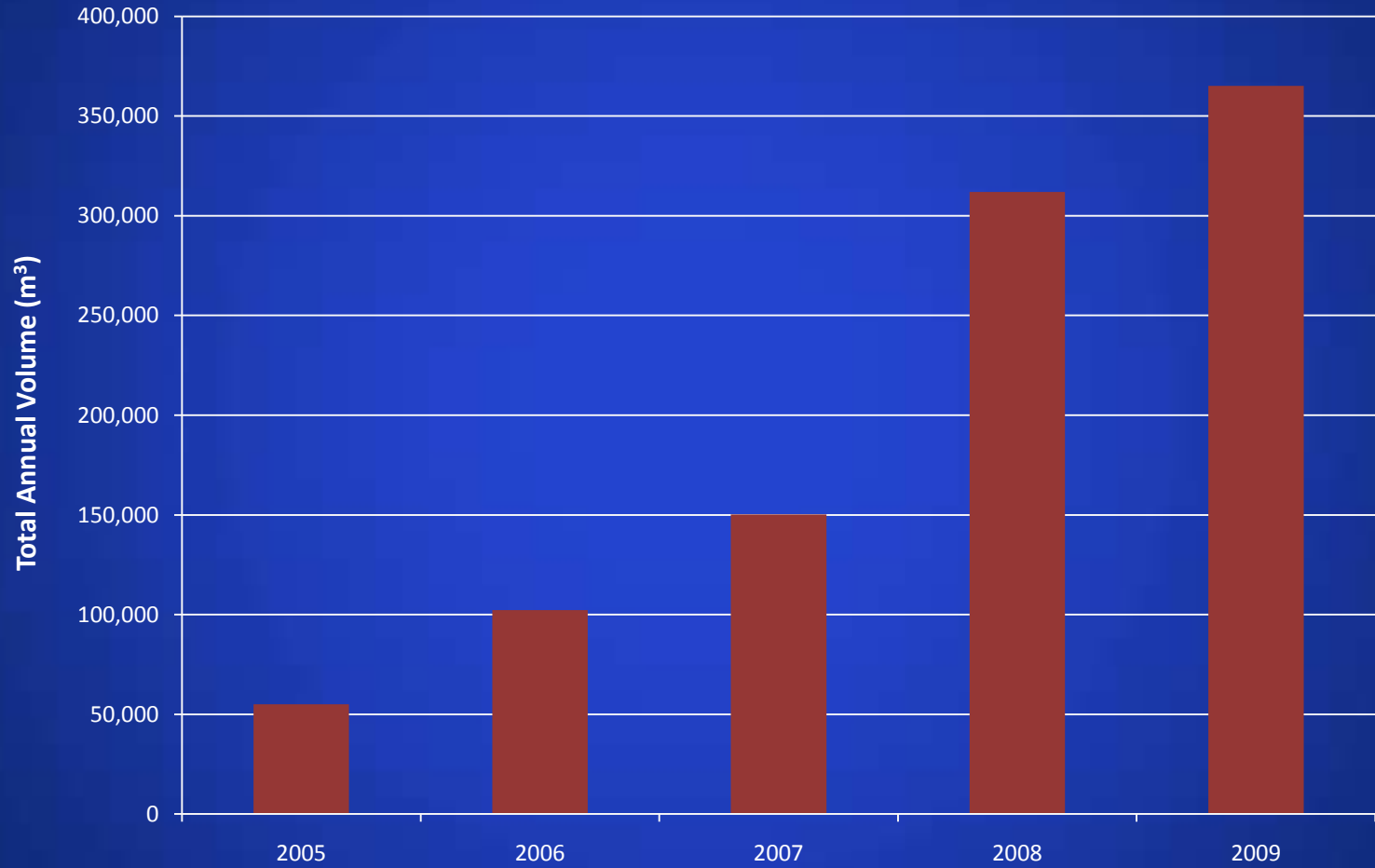


Water Volumes = cubic meters



28 Water Trucks = 1000 m³

Annual Water Sales to Industry



Water Volumes = cubic meters



28 Water Trucks = 1000 m³

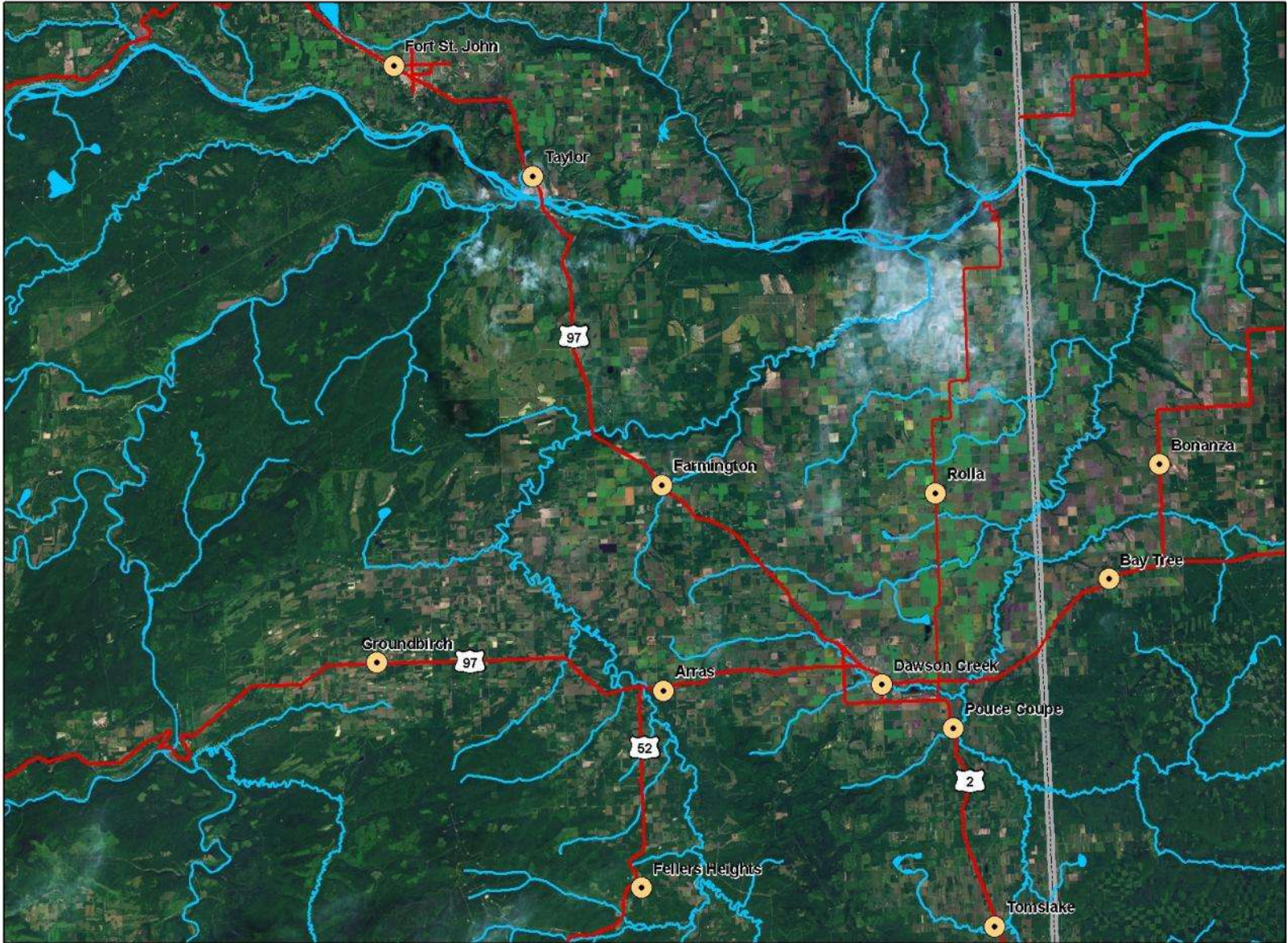
- 2009 = 365,212 m³ sold
- **10,434** water trucks
- Equivalent of **5200 residential** users!

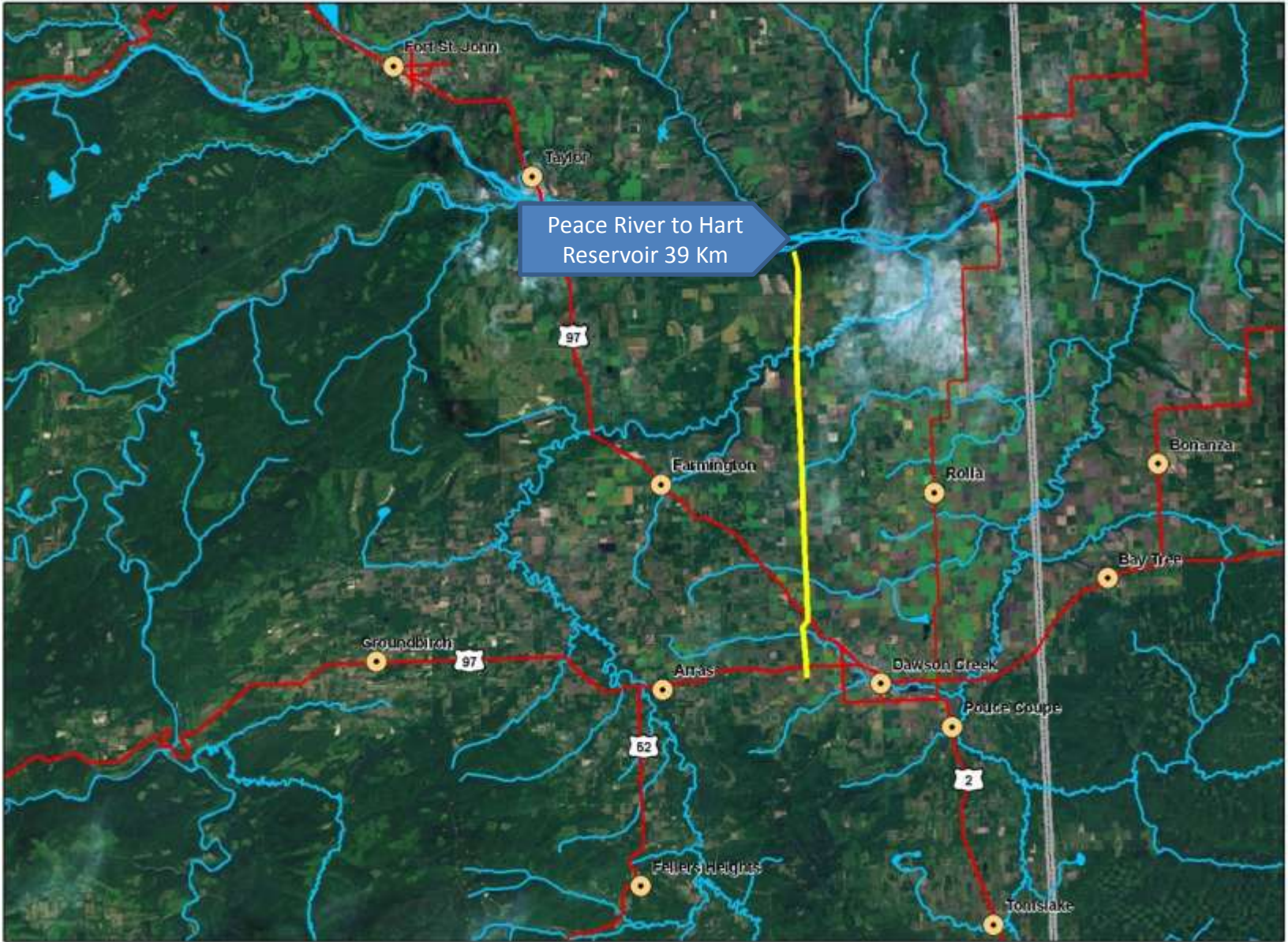
Where Is All The Water Going?

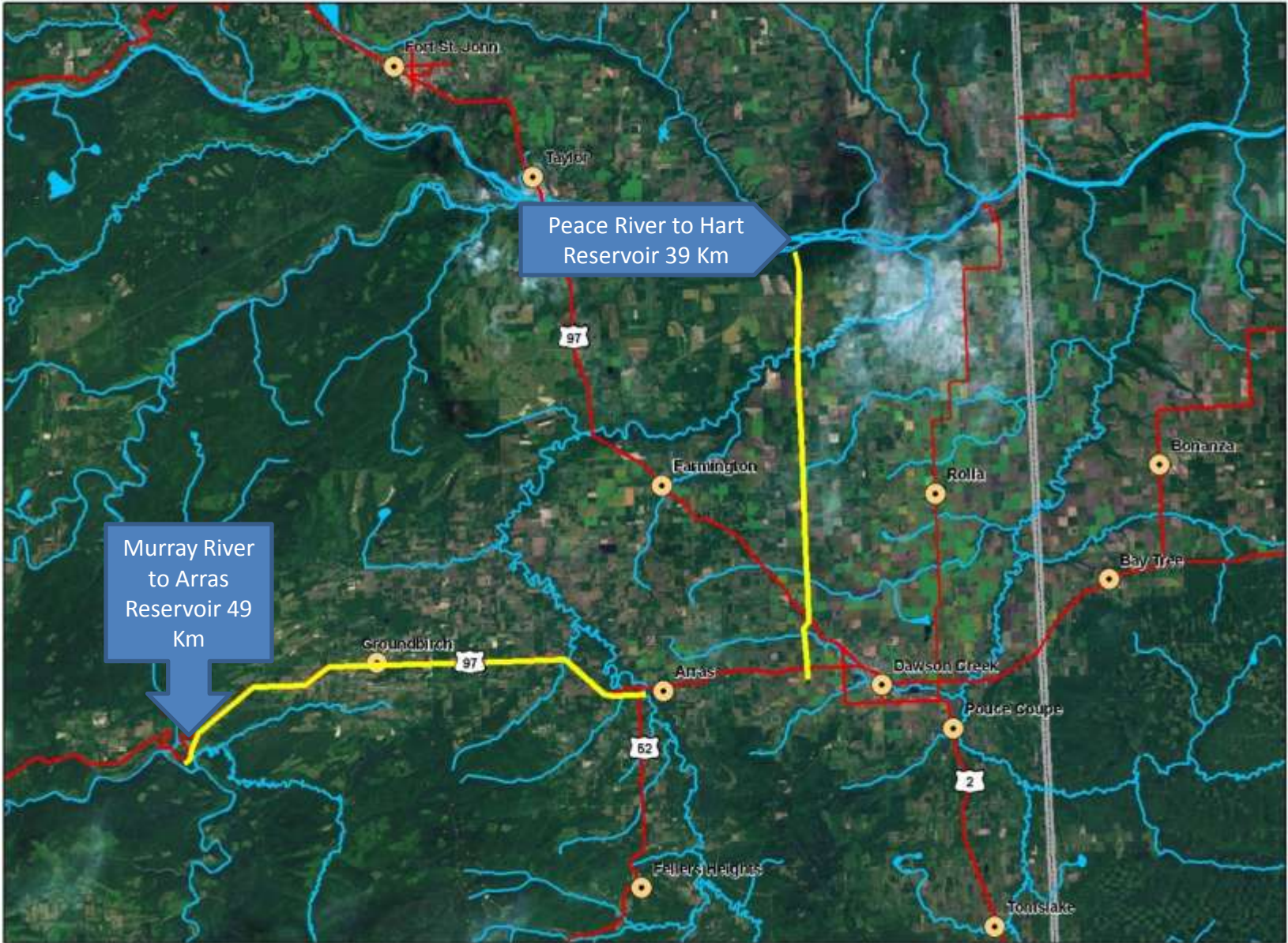
- Natural gas industry requires water for:
 - Drilling
 - Well completion through hydraulic fracturing
- Local natural gas development will focus on the Montney Shale Formation – which requires water to fracture the rock and make the gas flow.
- We need water to satisfy the demand.

We Need Water To Satisfy Demand

- What about a water pipeline going to the Murray or Peace Rivers? We can forget about the Kiskatinaw and have no more water problems!







We Need Water To Satisfy Demand

- What about going to the Murray or Peace Rivers? We can forget about the Kiskatinaw and have no more water problems!
- Costs
- 2003 - \$30 Million for either option
- \$1.2 million annual operating costs!
- 2009 Spectra South Peace Pipeline: \$1 million per kilometre = \$40-50 million now?

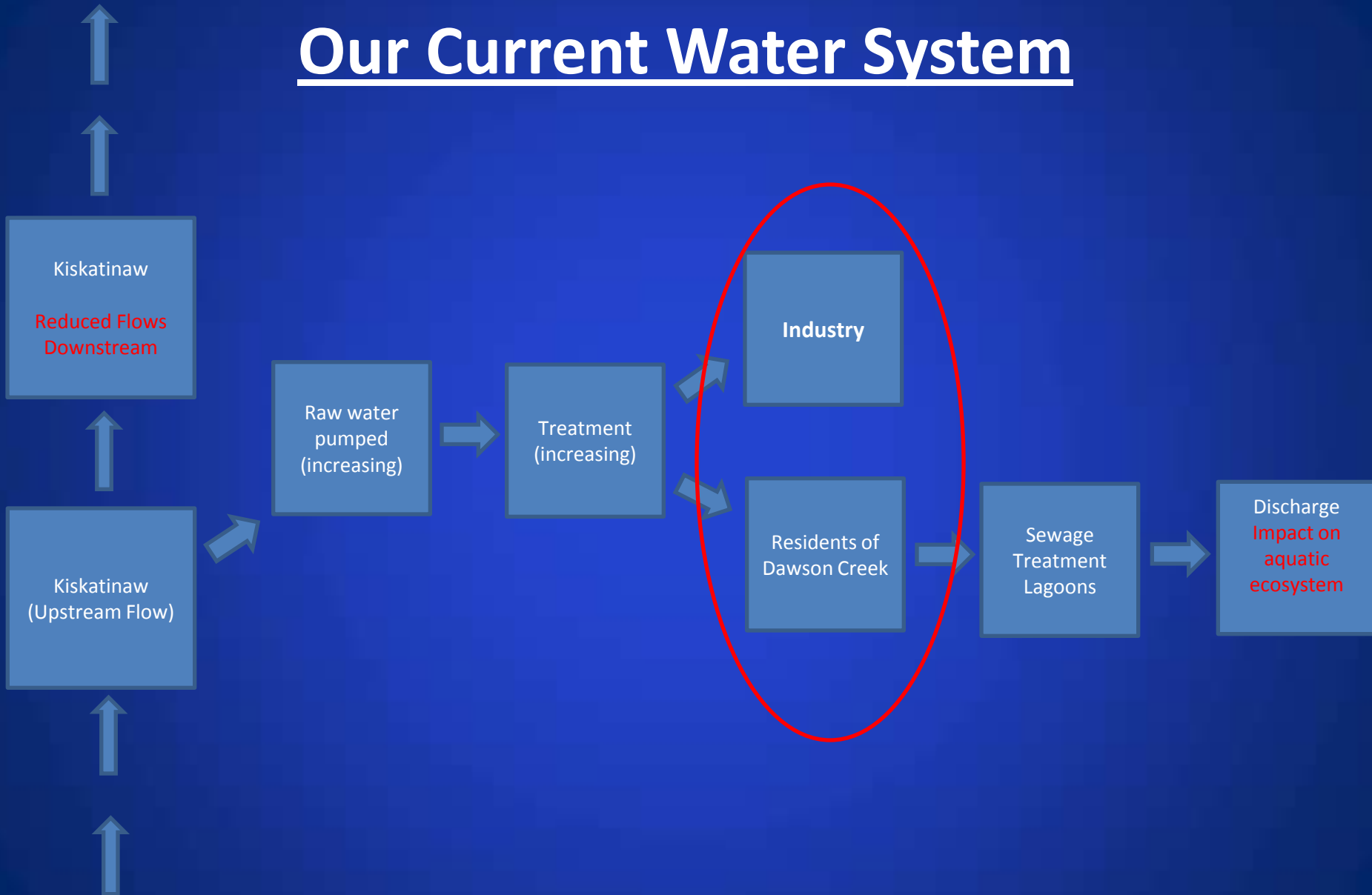
We Need Water To Satisfy Demand

- \$50,000,000 Pipeline Project
- \$10,000,000 Water Treatment Plant Upgrades
- \$1,200,000 Annual Operating Costs
- That's \$5200 per person (more per taxpayer)

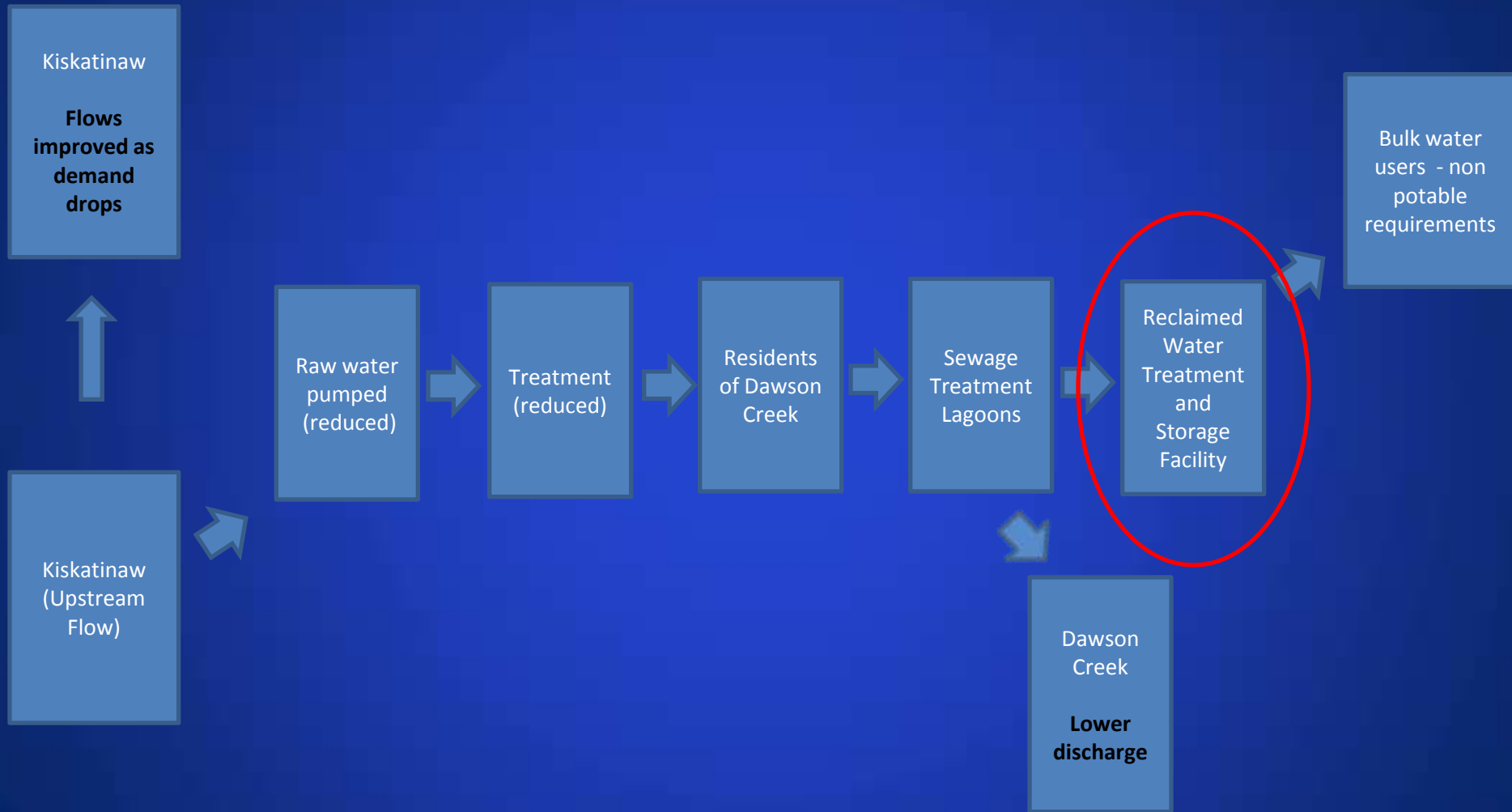
Or...

We can Build a Reclaim Water Facility

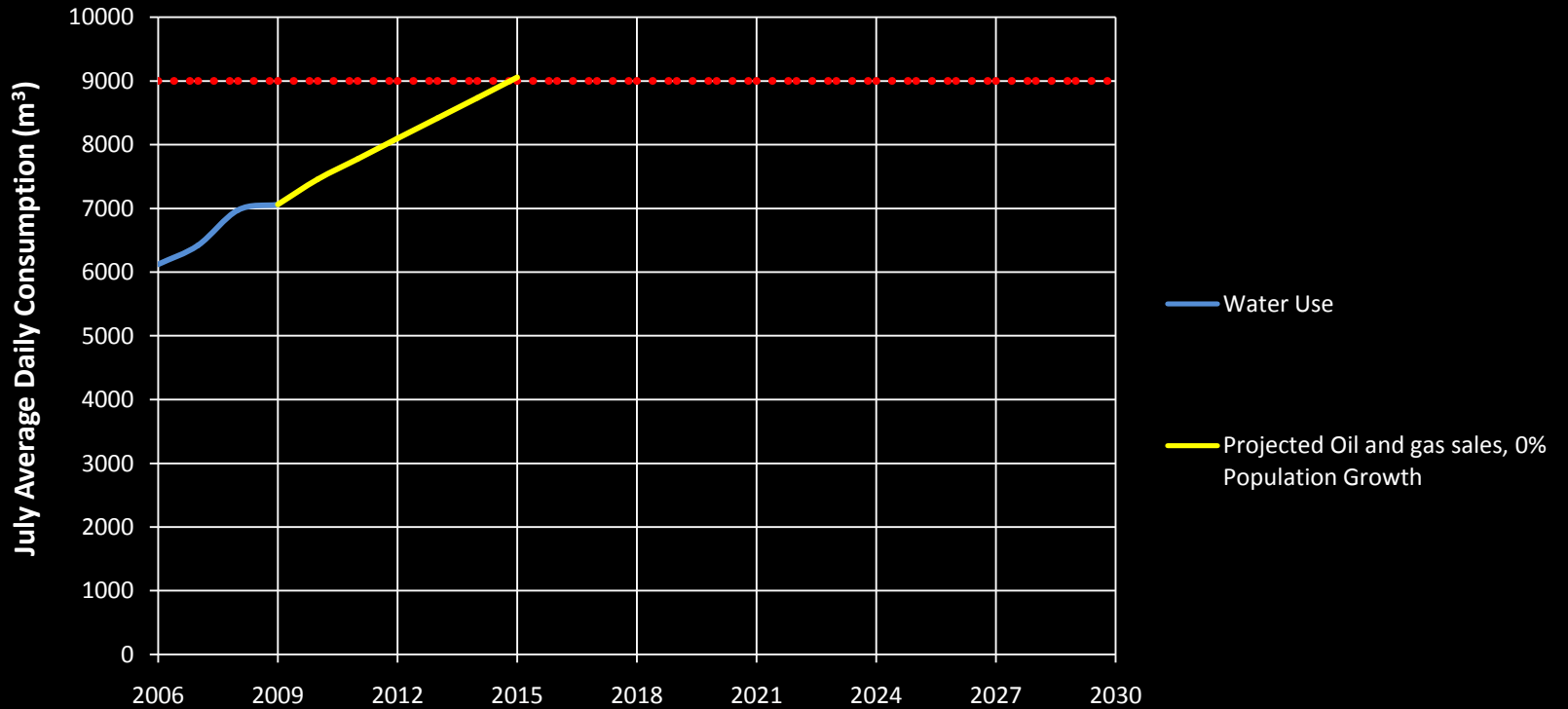
Our Current Water System



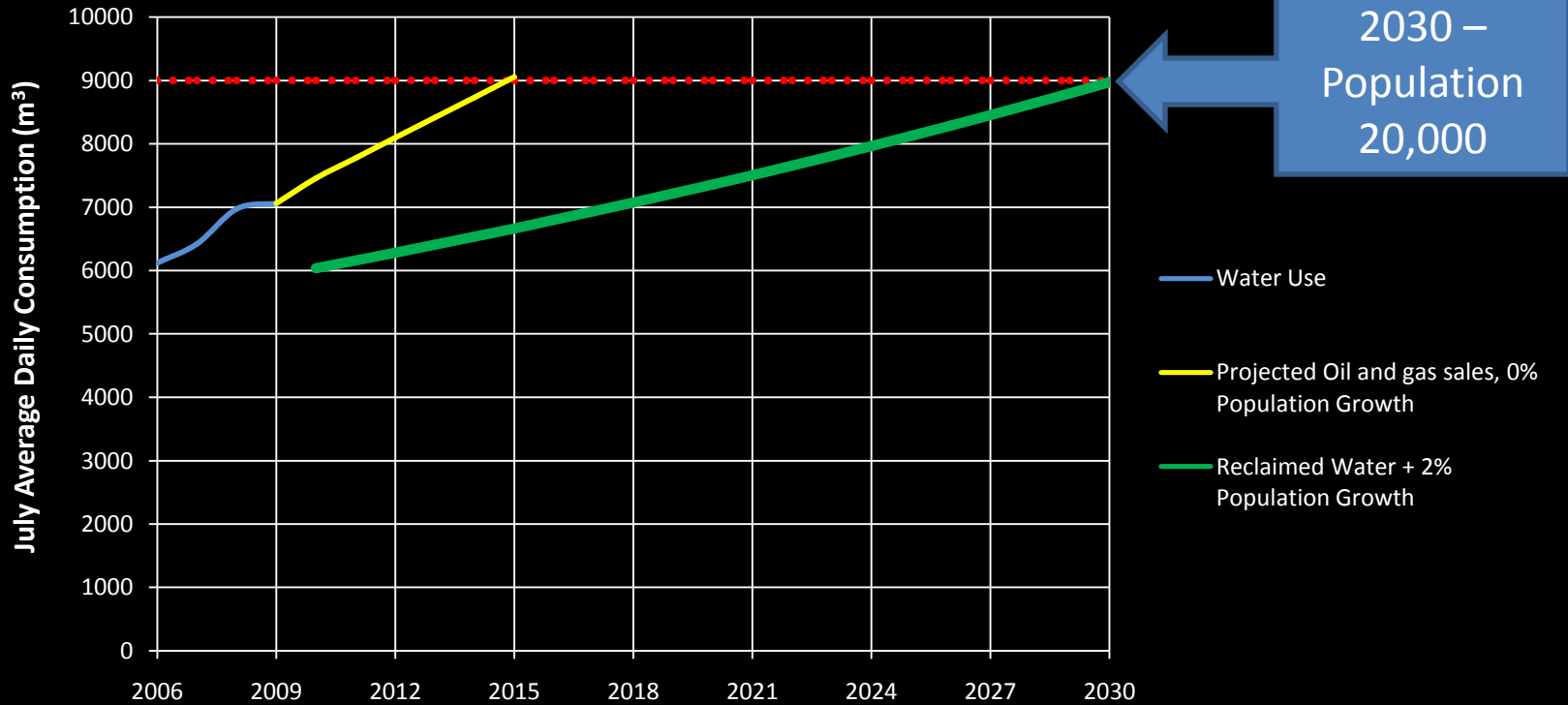
Proposed Reclaimed Water Solution



When will we reach our allowable daily limit?



When will we reach our allowable daily limit?



Why now?

British Columbia Living Water Smart Strategy

- By 2010, government will mandate purple pipes (*reclaim water*) in new construction for water collection and use.
- 50% of New Municipal Water needs will be acquired through conservation by 2020

New CCME Guidelines for treated effluent

- New guidelines for treated effluent – will have to upgrade our sewage treatment facility anyway.

Montney Shale Gas development by industry.

Reclaimed Water Project Benefits

- **Benefits to the City**

- Reduced pressure on the watershed
- Reduced pressure on water treatment infrastructure
- Fits with sustainable community goals and vision
- Long term infrastructure legacy for the City
 - Over time, water can be incorporated into multiple uses, further reducing our demand for drinking water.

Reclaimed Water Project Benefits

- **Benefits for the Environment**

- Reduced water draw by the City from Kiskatinaw River
- Reduced demand on water resources in the area from temporary water licenses and permits
- Effluent discharge into Dawson Creek reduced.

How Reclaim Water Works?

- Project details – Urban Systems