REPORT TO COUNCIL

MEETING DATE: June 15, 2026 **REPORT NO.** 26-117

SUBMITTED BY: Devon Aaroe
General Manager of Major Infrastructure & Development

SUBJECT: Water Supply System Project – Phase 1 Progress Update

PURPOSE

This report provides Council with an update on the progress of the Dawson Creek Water Supply System Project following the approval of Phase 1 work in late April 2026. Since that time, the project team has fully mobilized and is advancing multiple technical, regulatory, and communication and engagement workstreams in parallel to support the identification of long-term water supply solutions for the City.

The purpose of this update is to outline the work completed to date, describe how the project is being advanced in a structured and coordinated manner, and provide visibility on upcoming milestones as the project moves toward completion of Phase 1, anticipated for mid-August.

As Phase 1 progresses toward completion, this report also begins to frame the scale of work underway and the level of continued investment that will be required to advance the project into subsequent phases.

ANTICIPATED OUTCOMES

That Council will receive this report for information and look ahead to the next update from staff in mid-August 2026 on the planned next steps for the City's long-term water supply system solution.

SUMMARY/BACKGROUND

Project Context and Need

The City continues to manage variable water supply conditions following the move last year in July 2025 to Stage 3 Water Conservation Measures due to drought and declining flows in the Kiskatinaw River, and the return to Stage 1 on May 25, 2026, as conditions improved. While recent snowfall and freshet have stabilized flows and reservoirs are currently near full, providing approximately 170 days of storage or more, these improvements are driven by seasonal conditions rather than long-term system resilience.

Long-range forecasts continue to indicate the potential for another dry year, and the City remains reliant on a single, constrained watershed that is sensitive to seasonal variability and drought conditions. The return to Stage 1 reflects improved short-term conditions, but does not resolve the underlying risk to the City's long-term water supply.

This context reinforces the need to continue advancing a long-term, resilient water supply solution based on careful analysis, coordinated planning, and a clear understanding of technical, environmental, regulatory, and financial considerations.

While current reservoir levels and recent conditions have reduced immediate pressure on the system, staff will continue to closely monitor water supply conditions, maintain the City's existing conservation and operational measures to manage short-term risk, and advance the Emergency Temporary Overland Water Transfer initiative should conditions deteriorate and an emergency water source is required.

Project Approach

The Dawson Creek Water Supply System Project is being advanced using a structured, phased approach designed to support informed and defensible decision-making. The project team is focused on addressing three core questions:

- How much water will the community require in the future?
- What viable source water options are available?
- How those options can be delivered in a practical and sustainable manner.

To answer these, the project brings together multiple integrated workstreams, including:

- Population projections and water demand forecasting.
- Source water assessment and seasonal sampling.
- Siting and routing analysis.
- Regulatory planning and approvals strategy.
- Indigenous and stakeholder engagement.

These workstreams are being advanced in parallel to ensure that all options are evaluated in a coordinated and consistent way.

The project is structured into defined phases, each with clear objectives and decision points. This allows the City to progressively refine options, incorporate new information, and assess trade-offs before advancing to the next stage.

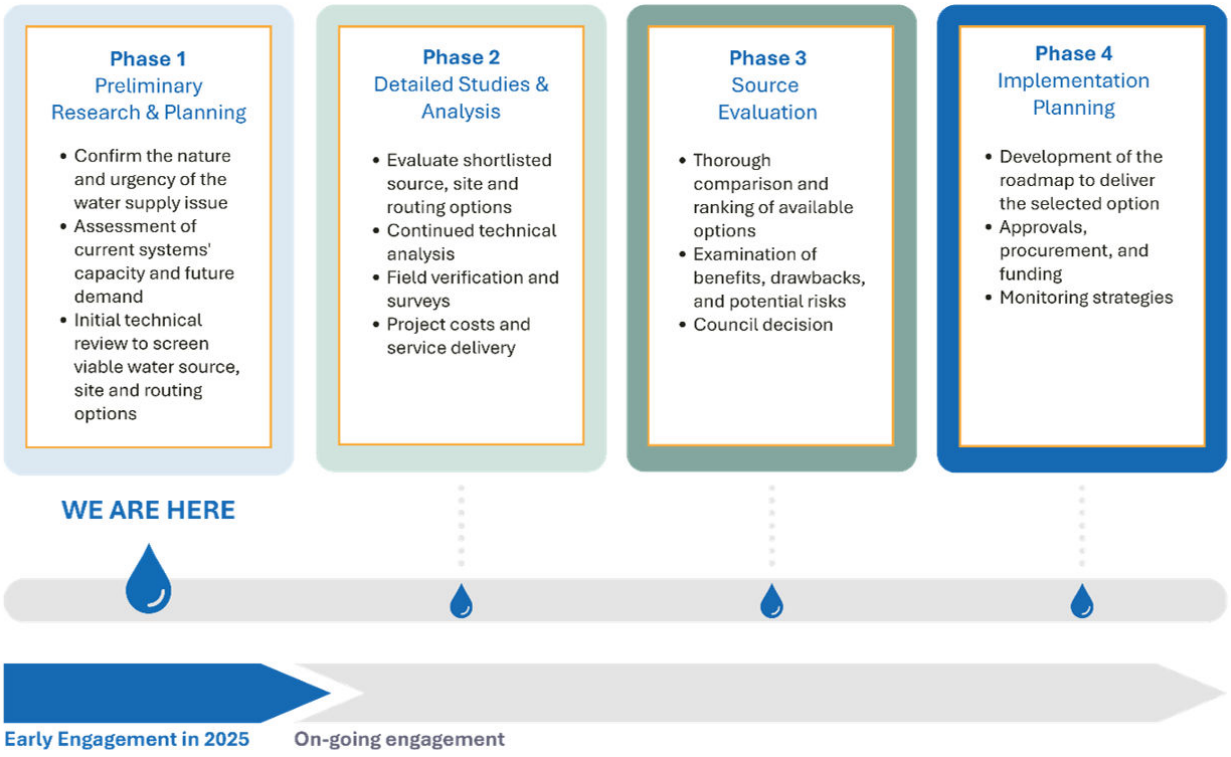
Engagement with Indigenous communities, government agencies, and other interested parties is integrated throughout to ensure that input is considered early and consistently.

This approach reflects the scale and complexity of the project and ensures that future decisions are supported by a high level of technical analysis, planning, and coordination, and are aligned with Council's guiding principles. It also reflects the level of planning required to support a major, multi-year infrastructure investment that will define the City's long-term water supply.

Progress to Date

The project is currently in Phase 1, focused on defining demand, identifying viable options, and establishing the basis for evaluation. Since receiving Council approval in late April, the project team has fully mobilized and is advancing multiple workstreams in parallel to support completion of Phase 1. Work to date has focused on establishing a clear understanding of future demand, viable supply options, and the infrastructure and regulatory considerations required to support them.

This work is being carried out on an accelerated timeline to position the City to make informed decisions as early as possible, while maintaining a high level of technical rigor.



Population Projection and Water Demand

Work has been completed to establish baseline and projected water demand, including:

- Updated population projections based on growth and land use assumptions.
- Residential and commercial water demand forecasts.
- Development of projected system demands, including average day and peak demand conditions.
- Assessment of how demand may change under different growth scenarios.

This work establishes the demand baseline used to consistently evaluate all supply options.

Population projections for the region have been developed over both 25-year and 50-year planning horizons to reflect near, medium, and long-term infrastructure planning needs. A medium growth scenario has been selected for evaluation purposes, as it represents a balanced and realistic projection

of future growth based on historic trends and regional context. This approach ensures infrastructure is sized to meet future needs without overbuilding beyond realistic growth expectations.

Population projections can vary depending on the methodology used. Provincial and federal projections, such as those from BC Stats and Statistics Canada, use standardized approaches to ensure consistency across many communities. While this improves comparability, these methods do not reflect local economic drivers, industry activity, or development potential and may not accurately represent local conditions.

For this project, locally informed projections have been developed using assumptions specific to Dawson Creek, including growth trends, land use, and servicing considerations. This approach provides a more relevant basis for infrastructure planning and better reflects how the community may grow over time.

It is important to note that these regional population projections are not predictions. They are "what if" scenarios based on a defined set of assumptions. Actual population and water demand may vary due to economic conditions, policy changes, or development activity, and should therefore be considered a planning tool rather than a precise forecast.

Table 1. 2050 (25-year) and 2075 (50-year) regional population under different growth scenarios

Scenario	Description	CAGR	2025 (base)	2050 (25 yr)	2075 (50year)	Change (2025-2075)
1	Low Growth	0.3%	20,264	22,971	23,434	+3,170
2	**Medium Growth**	**0.6%**	**20,264**	**24,721**	**27,296**	**+7,032**
3	High Growth	1.4%	20,264	28,419	39,856	+19,592

CAGR = Compound Annual Growth Rate

Industrial and Market Demand

Work has been completed to understand broader water demand beyond municipal use, including:

- Review of current industrial water use in the region.
- Identification of key demand drivers related to regional activity.
- Assessment of potential future industrial demand.

This work ensures total system demand is understood and considered in long-term planning.

The market demand review considers key sectors including oil and gas activity, industrial development, and regional economic trends. Demand assumptions are based on available data, industry input, and projected activity under the selected growth scenario. A medium growth scenario has been selected for evaluation purposes, as it represents a balanced and realistic projection of future growth based on historic trends and regional context for Phase 1 purposes.

Table 2. Industrial and economic water demand projections

Population Growth Scenario	Economic Development Allowance (m^3/year)	Planning Interpretation
Scenario 1 – Low Growth	456,600	Limited Uptake of water dependant economic activity
Scenario 2 – Medium Growth	**652,500**	**Moderate economic expansion aligned with regional role**
Scenario 3 – High Growth	848,400	Upper-bound economic enabled by secure water supply

Water Demand Projections

Future water demands were created for 2050 and 2075 using the information from the population, industrial, and market demand projections. From this, the Average Day Demand (ADD) and Maximum Day Demand (MDD) for the City were determined and have been utilized for Phase 1 planning purposes.

Table 3. Water demand projections

Planning Horizon	ADD (m^3/year)	ADD (m^3/day)	MDD (m^3/day)
5-year Historical Average (2020-2024)	2,007,900	5,500	8,100
2050 (25 year)	3,368,600	9,200	16,300
2075 (50 year)	3,780,700	10,400	18,300

Source Water Investigation

A raw water sampling program is underway to assess potential source water options, including:

- Sampling at key river systems, including the Peace, Pine, and Murray Rivers.
- Seasonal sampling to capture variability in water quality and flow.
- Assessment of treatment requirements associated with each source.

This work supports the identification of viable source options and associated treatment needs.

Due to the limited seasonal window available, the initial round of sampling was completed on an accelerated timeline and was not undertaken with Indigenous participation. Future sampling programs are intended to be carried out in collaboration with interested Indigenous Nations in a manner that respects the land and incorporates Indigenous knowledge and values.

A Note on Groundwater

Preliminary groundwater investigations were also completed within the study area. Local groundwater is being considered as part of Phase 1, as it could provide a more locally controlled supply with shorter conveyance distances. However, early findings indicate limitations in long-

term yield and scalability to meet projected demand, and additional treatment system upgrades would likely be required compared to the City's current system designed to treat surface water.

Siting and Routing

Work has been completed to identify and refine potential infrastructure corridors, including:

- Development and application of a siting methodology.
- Identification of conceptual intake locations.
- Development of preliminary pipeline routes.
- Screening of routes based on environmental, land use, and technical constraints.

Initial route options have been developed and are being refined. The current intake locations selected for further analysis include potential locations on the Peace River, Pine River, and Murray River. Two potential discharge locations have also been identified, including the Hansen Reservoir and the South Dawson Reservoir, both of which are existing raw water reservoirs located west of the City and already form part of the City's raw water storage system, allowing the project to leverage existing infrastructure and limit additional system complexity.

A map identifying the Project Study Area, which encompasses the intake locations and routing corridors selected for further evaluation, is attached at the back of this report.

At a high level, the types of solutions being evaluated include new intake infrastructure on major river systems and transmission pipelines connecting those sources to the City's existing raw water storage reservoirs. These are large-scale infrastructure projects that will require careful design, regulatory approval, and phased implementation.

Regulatory Planning

A Regulatory Strategy has been developed to define how the project will navigate required permits and approvals and to identify risks early in the process. Regulatory approval requirements are expected to be a key factor in project timelines and feasibility.

Work completed to date includes:

- Identification of required permits and regulatory approvals.
- Assessment of approval timelines and potential critical path items.
- Early engagement with regulatory agencies to confirm expectations.

Early regulatory planning is a critical component of the project, as it ensures that options being advanced are viable from an approvals perspective and reduces the risk of delays, redesign, or additional cost in later phases.

Engagement and Collaboration (Refined and Condensed)

Engagement is a core component of the project and is focused on ensuring that input from Indigenous communities, agencies, industry, and other interested parties is considered early and throughout the process.

Engagement Plans have been developed to guide participation through each phase of the project. The Indigenous Engagement and Collaboration Plan is being developed separately from the broader Community and Interested Party Engagement Plan to support co-creation of the engagement approach based on each Indigenous community's preferences for participation.

Work completed to date includes:

- Regular coordination with regulatory agencies.
- Initial meetings with representatives from local Indigenous Nations.
- Presentations to regional leadership, including neighbouring local governments and Indigenous Nations Chiefs and Councils.
- Engagement with industry to discuss long-term trends and potential impacts on water demand.

Public communications have focused on reintroducing the project and providing clear, consistent updates aligned with Council reporting using a combination of website updates, social media, and staff communications. This reintroduction reflects the transition into the current phase of work following the Environmental Assessment Office's (EAO's) Early Engagement process, informed by feedback received and supported by a strengthened project team and a more structured approach to project delivery.

Engagement during this phase has prioritized key interest holders, including Indigenous communities, regulators, neighbouring governments, and technical stakeholders. Supporting materials and outreach have been developed to ensure consistent and informed discussions, and engagement activities will continue through Phase 1.

A formal engagement tracking system has been established to record interactions, feedback, and key issues raised. This ensures transparency and accountability, maintains a consistent record of input received, and provides clear documentation of how feedback is considered and incorporated into project decisions.

Meaningful and sustained engagement supports early identification of issues, helps refine project options, and builds a transparent and informed decision-making process. It also helps identify and address potential concerns early, reducing the risk of delays in later phases of the project.

Summary of Progress to Date

Work completed to date has established:

- A consistent and defensible demand baseline.
- Initial viable source water options.
- Preliminary infrastructure corridors and routing options.
- A defined regulatory pathway.
- Ongoing engagement with key parties.
- Key risks and uncertainties are being identified and tracked and will inform option evaluation and future phases.

Collectively, these efforts represent a coordinated, substantial commitment across multiple disciplines and provide a strong, defensible foundation for the next stage of the project. It positions the City to move forward with confidence in evaluating options and supports future decisions with a clear, well-developed, and transparent analytical framework.

Next Steps

Work over the coming months will focus on completing Phase 1 and advancing the evaluation of viable water supply options to support a Council update and decision point in mid-August.

Short Term (Summer 2026) - Continuing Phase 1 Work

Over the remainder of Phase 1, work will focus on completing key technical, regulatory, and engagement tasks required to evaluate and compare water supply options.

Work currently underway includes:

- Completion of the initial seasonal raw water sampling program at the Peace River (Taylor and Clayhurst), Pine River, and Murray River
- Ongoing refinement of intake locations and pipeline routing corridors
- Continued coordination with regulators to confirm the approval pathway
- Ongoing engagement with Indigenous communities, agencies, industry, and other interested parties

Work to be completed before the end of Phase 1 includes:

- Further technical review of short-listed options, including source water availability and reliability, treatment requirements, constructability, and integration with existing infrastructure
- Evaluation of short-listed options using a structured approach led by a City evaluation team, which forms a key component of completing Phase 1.

How Options Will Be Evaluated

The evaluation of options is a key part of completing Phase 1. Options will be compared using a clear and structured three-step evaluation process designed to support informed and defensible decision-making.

The first step is an initial screening using Council's Guiding Principles. Each option is reviewed against long-term water needs, governance, regional alignment, and overall risk. Based on this review, options are grouped into three categories: proceed, proceed with caution, or do not proceed. This step identifies any clear misalignment early, while allowing viable options to move forward.

The second step is a more detailed evaluation using a PESTLE framework, which considers each option across political, economic, social, technical, legal and regulatory, and environmental factors. This step provides a complete understanding of how each option performs, where the risks are, and where more information may be required. The findings are also considered alongside lifecycle cost estimates to provide a more complete picture of each option.

The final step involves overall review and professional judgement. The evaluation team considers why an option may be selected, why it may not be selected, and what conditions would need to be met for

it to be successful. This step captures key risks, assumptions, and considerations that may not be fully reflected through structured scoring alone.

This approach to options analysis ensures that options are weighed, scored and evaluated in a transparent, consistent, and defensible manner to support Council decision-making.

Medium Term (Mid-August 2026) - Phase 1 Completion and Council Update
At the completion of Phase 1, a comprehensive update will be provided to Council, including:

- Summary of technical findings and key constraints
- Comparison of viable water supply options
- High-level cost estimates for each option
- Identification of key risks and considerations
- Summary of engagement findings
- Recommended next steps

This work will culminate with a report and presentation to Council by staff to review the findings and support discussion.

Phase 1 is not intended to select a preferred option. The goal is to identify which options demonstrate sufficient potential to meet the City's long-term needs and should move forward for more detailed study. The outcome will be a focused shortlist of viable options, supported by a clear understanding of trade-offs, risks, and uncertainties.

Next Phase (Subject to Council Direction)
If Council directs that the project proceed following a review of the Phase 1 results, Phase 2 will focus on refining and confirming a preferred option and preparing for future implementation.
Work in the next phase is anticipated to include:

- Detailed refinement of siting and routing.
- Expanded field investigations and technical studies.
- Further regulatory engagement and advancement of approvals.
- Continued Indigenous and stakeholder engagement.
- More detailed cost estimation and financial planning.

A future report will be brought forward outlining next steps and requesting additional funding to support continued work, including anticipated use of Water Capital Reserves.

It is expected that the full planning, design, and implementation of a long-term water supply solution will take place over multiple years, with Phase 2 and subsequent phases focused on progressively refining and advancing a preferred option toward implementation. Following Phase 2, detailed design, permitting, and construction would be required before a new supply is operational.

Financial Considerations
This phase represents a coordinated investment of time, resources, and technical effort across multiple technical, regulatory, and engagement workstreams, delivered on an accelerated timeline to support

timely decision-making. While detailed cost estimates are still being developed, infrastructure of this scale is expected to represent a significant long-term capital investment for the City.

Advancing the project beyond Phase 1 will require additional investment to continue building on this work and maintain the same level of rigor, coordination, and quality in the evaluation and development of options. The next phase will involve more detailed technical analysis, expanded field investigations, continued regulatory advancement, and deeper engagement. As a result, both the level of effort and associated costs are expected to increase as the project progresses.

High-level cost estimates for each water supply option will be presented to Council as part of the Phase 1 completion update, anticipated for mid-August. These estimates will provide a clear understanding of the relative scale, complexity, and potential financial implications of each option to support informed decision-making. A request for additional funding, along with proposed funding strategies to support the next phase of work, is anticipated to be brought forward to Council at that time.

Closing Remarks

The Dawson Creek Water Supply System Project continues to advance in a structured and coordinated manner to address the City's long-term water supply needs.

Since receiving Council direction in late April, the project team has fully mobilized and progressed multiple workstreams in parallel, including demand forecasting, source water investigation, siting and routing, regulatory planning, and engagement. These efforts have been carried out on an accelerated timeline, and they reflect a high level of coordination and technical input. As a result, the City now has a clearer understanding of future water demand, viable source water options, preliminary infrastructure approaches, and key regulatory considerations. Together, these form a strong and defensible foundation for evaluating and comparing options as Phase 1 is completed.

Phase 1 remains on track for completion and presentation to Council in mid-August. This stage will result in a focused shortlist of viable options, supported by technical analysis, engagement input, and a clear understanding of risks and trade-offs.

Advancing beyond Phase 1 will require continued investment and Council direction. With the work completed to date, the City is well positioned to move forward with confidence, supported by a clear, well-developed, and defensible process for evaluating options and making future decisions.

ALTERNATIVES

N/A

IMPLICATIONS

(1) Social Advancing a long-term water supply solution supports community well-being by improving reliability, reducing the risk of future water restrictions, and supporting residential, commercial, and industrial growth, which together contribute to overall quality of life and

community confidence.

(2) Environmental The project emphasizes early assessment of environmental considerations through source water sampling, siting and routing analysis, and regulatory planning, supporting environmentally responsible decision-making and alignment with provincial and federal requirements.

(3) Personnel The work is being delivered using existing staff resources supplemented by technical consultants, with increased coordination and workload across engineering, planning, and engagement functions as the project advances through Phase 1.

(4) Financial Phase 1 represents an initial investment in technical studies, engagement, and regulatory planning, with additional funding anticipated for subsequent phases as options are refined and more detailed analysis and field work are required.

(5) Risk Assessment

Compliance:

Drinking Water Protection Act; Environmental Management Act; Water Sustainability Act; Indigenous consultation requirements; Municipal procurement policies and international trade treaties.

Risk Impact:

Medium, due to the complexity of regulatory approvals, technical uncertainty, and long-term financial commitments associated with large-scale water infrastructure projects.

Internal Control Process:

Risks are managed through phased decision-making, early regulatory engagement, structured option evaluation, and ongoing monitoring of technical, environmental, and financial considerations, with regular reporting to Council at key decision points.

STRATEGIC PRIORITIES

Infrastructure and Asset Management

IMPLEMENTATION/COMMUNICATION

Staff will continue technical work, regulatory coordination, and engagement activities through the remainder of Phase 1, with a comprehensive report and presentation to Council planned for mid-August 2026 to communicate findings, compare viable options, and outline recommended next steps.

RECOMMENDATION

That Report No. 26-117 from the General Manager of Major Infrastructure and Development re: Water Supply System Project – Phase 1 Progress Update be received for information.

Respectfully submitted,

Devon Aaroe
General Manager of Major Infrastructure & Development

Attachments
Water Supply System Project Study Area

Approved for the Agenda by:

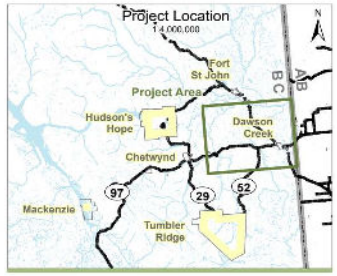
Agenda Review	Approved - 08 Jun 2026
Janice Anderson, Deputy Corporate Officer	Approved - 08 Jun 2026
Kevin Henderson, Chief Administrative Officer	Approved - 09 Jun 2026
Agenda Review	Approved - 09 Jun 2026

Dawson Creek

Dawson Creek Water Supply System Project

Study Area

- Potential Intake Source Location
- End Point Reservoir
- Study Area
- First Nation
- Métis Chartered Community
- Highway
- Major Road
- Provincial Boundary
- First Nations Reserve
- Municipality
- Parks and Protected Areas
- Water Body



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