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The District of North Vancouver

INFORMATION REPORT TO COUNCIL

September 10, 2025

File: ENGUTL-1295952093-91

AUTHOR: Sean Rooney, P. Eng. Manager, Utilities**SUBJECT:** Reducing Water Usage - Water Metering**REASON FOR REPORT:**

This report is in response to the May 5, 2025, resolution directing staff to report back on opportunities, including estimated costs, for implementing water metering across the District of North Vancouver.

SUMMARY:

Water metering is a critical tool in managing water distribution systems. Municipalities have three main levers to manage and reduce water use: 1) applying provincial building code regulations (such as low flow plumbing fixtures), 2) public education and water conservation programs, and 3) water metering. The first two are already deployed throughout the District. Expanding water metering in the District presents a significant opportunity to reduce water use and improve system efficiency.

System-wide water metering offers many benefits, such as early detection of leaks, unauthorized use, and unusually high consumption. This early detection enables more targeted and cost-effective infrastructure investment, and reduces the avoidable costs that leaks, unauthorized use and unusually high consumption impose on all ratepayers. System-wide metering also provides essential data that supports equity in rate design, data-informed engineering decisions, conservation initiatives, and policy development. Particularly when paired with consumption-based pricing, water metering has been shown to reduce per-capita water use, especially during peak periods of outdoor water use. This decrease in per-capita usage contributes to climate change resiliency, improves transparency, and empowers residents to better understand and manage their water use.

Staff recognize the high capital investment and community disruption associated with a District-wide meter installation program and therefore are reviewing a phased approach towards universal water metering for Council's consideration, as outlined below in the analysis. A phased approach enables forward momentum towards universal metering,

minimizes disruption, amortizes the capital costs, and improves data-driven decision-making and equity over time.

Staff are currently preparing a water metering business case as part of an overall utility rate review. The business case will assess the full financial impacts of expanding water metering. The results of the business case will be presented to the Finance and Audit committee. Following this presentation and resulting feedback, a Council meeting or workshop will be scheduled to seek further Council direction.

BACKGROUND:

The District's water utility is under increased strain in recent years. Rising costs from the regional government and high demand for irrigation in the summer, particularly in unmetered single-family homes, are adding to this strain, as is demand for water as the climate changes.

In accordance with the Building Act and Community Charter, local governments may regulate water meters for connections to public water systems. This District has established a bylaw that delegates the authority to require water meters to staff and, historically, this requirement has been applied in the following circumstances at the time of building permit:

- The District currently meters and bills Industrial, Commercial, and Institutional (ICI) properties based on actual water consumption.
- The District requires meters to be installed on all new multi-family water connections, including properties with a single family home plus coach house. Approximately 60% of all multi-family properties have water meters installed. However, only 32% of these properties are billed based on metered consumption. The remaining 68% with meters installed are charged a flat rate. A rate review and subsequent update to the metered multi-family rates is pending and would allow more multi-family properties to switch over to a metered rate.
- At this time, single-family dwellings are only metered through a small-scale pilot program. Less than 1% of all single-family homes have a meter installed.
- The District is the only municipality in Metro Vancouver that does not require new meters or meter-ready installations for water services on new single-family construction.

Previous councils have considered implementing a universal water metering program:

- November 2009: Council workshop was held on universal water metering. Analysis indicated that costs would outweigh the savings from reduced water use and the corresponding reduction in the volume of wastewater that requires treatment. Council accepted the staff recommendation to not pursue universal water metering at that time.
- July 2018: A councillor-led motion "that staff be directed to investigate the benefits of universal metering and provide an approach and time frame that the District might adopt to achieve implementation" was defeated.

Since that time, Metro Vancouver has introduced revised seasonal water rates. Starting in 2020, Metro Vancouver has applied 100% of cost increases to the summer peak rate and held the winter off-peak rate flat. Since 2017 the winter rate has increased only 16% but the summer rate has increased by 64% (2024 rates). There are also significant capital investments required on the regional water supply in the coming decades with the planned expansion of the Coquitlam reservoir in the 2030s and Seymour reservoir in the 2070s. See <https://metrovancover.org/services/water/Documents/water-supply-outlook-2120.pdf> for further details on Metro Vancouver's long term water supply plans.

Water conservation is more important than ever as climate change continues to reduce water availability. Drier, warmer, and longer summers—combined with shrinking snowpacks—are already putting strain on our water supply, especially during periods of peak demand. These challenges are expected to intensify in the coming decades, making water conservation not just important, but essential for long-term resilience.

The District currently has a comprehensive water conservation program, including public education, outreach, enforcement of the Drinking Water Conservation Bylaw, water audits and leak detection. Water meters used in combination with a strong Water Conservation Program can further improve the District's ability to manage the water system efficiently and reduce per capita water demand and seasonal peak water use over time. Figure 1 shows the District's seasonal water use since 2022 in comparison to the regional use. Summer use approximately doubles due to irrigation demands during dry periods with little to no precipitation.

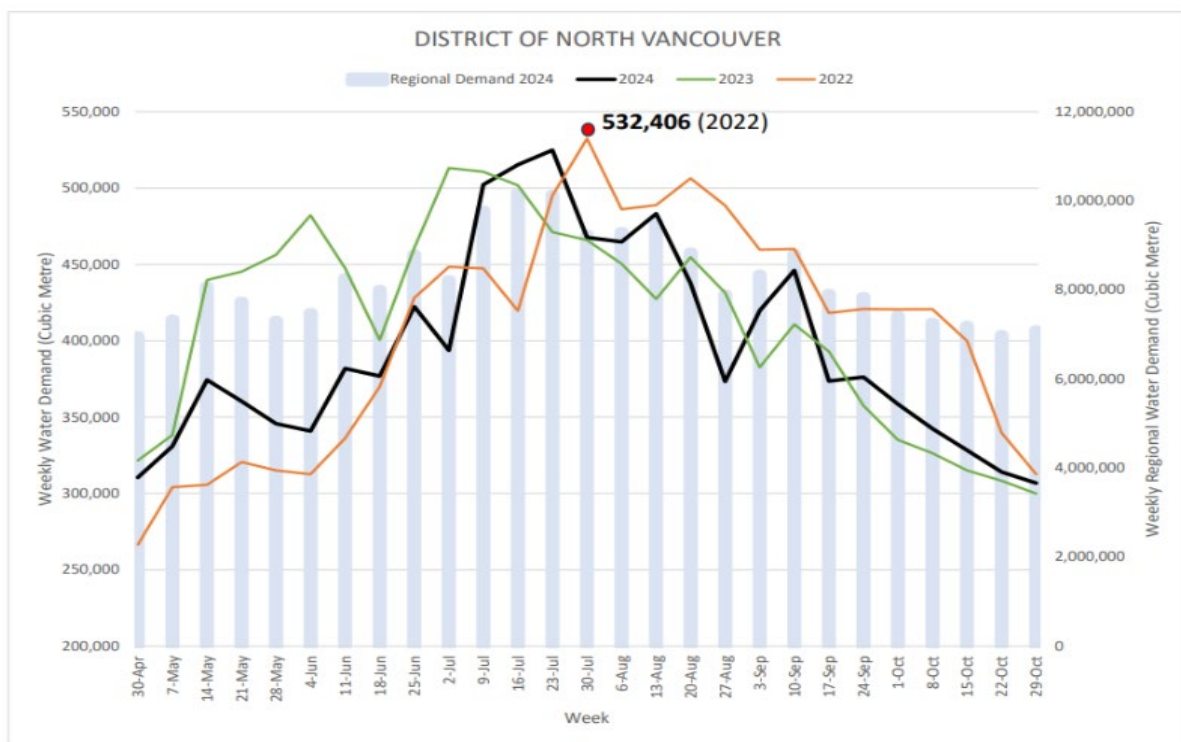


Figure 1: DNV Seasonal Water Use

In 2024, the District of North Vancouver purchased 18,002 Megalitres (ML) of water at a cost of \$17.1M. It is estimated that approximately 1500 ML of water can be attributed to leaks on privately owned properties. This translates to a value of approximately \$1.5M in bulk water purchase from Metro Vancouver. The ongoing water meter business case analysis will assess the achievable water consumption reduction from water meter expansion.

EXISTING POLICY:

Waterworks Regulation Bylaw 2279 provides for the operating and maintaining of the waterworks system in the District of North Vancouver and for the fixing of rates, terms and conditions under which water may be supplied and used. Per S.21, water meter installation is at the discretion of the Municipal Engineer. In practice, most Industrial, Institutional and commercial properties are metered and charged at a uniform metered rate. Multi-family buildings are metered with a single meter on the service connection and are charged either an annual flat rate or metered rate.

Other than 136 properties in the single-family pilot program and newly constructed coach houses, single-family properties are not required to be metered and are charged an annual flat rate for water consumption.

ANALYSIS:

Staff are currently preparing a water metering business case as part of an overall utility rate review. The business case will provide accurate, up to date, comprehensive and detailed information including:

- Full lifecycle costs of metering infrastructure
- Implementation costs and timelines for various metering programs
- Forecasted impacts on rates, including reduced consumption, increased infrastructure costs and effects on flows in the sanitary sewer system
- Several rate model options that address user-pay equity and financial sustainability
- Forecasted impacts of rate model options when considering Metro Vancouver's seasonal rate model
- Options for phasing in rate changes

Results from the water metering business case will be presented to the Finance and Audit Committee prior to coming to Council for further direction.

Staff have identified three potential approaches to advancing universal water metering across the District. Each option considers cost, timing, community impact, and the long-term benefits of moving towards universal metering. The options range from a gradual, low-impact approach to a fully accelerated program, as well as maintaining the status quo. A comparison of each approach is provided below.

Option 1 – Incremental Water Metering Approach

This option adopts metering as the new standard for all new and major-renovation single-family properties while phasing in other steps over time based on results from a water metering business case. It is the least disruptive approach: it advances towards universal metering gradually through new connections, voluntary participation, and eventual retrofits.

This approach will align the District of North Vancouver with other municipalities in the lower mainland. It has the least short-term impact on utility rates, aligns with potential increases in development activity stemming from new housing legislation and projected housing needs, and reduces future capital burden by integrating meters during new construction or renewals.

It will also improve data collection and reporting, which will allow for better utility rate setting and improve transparency with our customers.

Installing a new water meter at the same time as installing a new water service to a property avoids additional excavation in the near future, surface restoration and disruption with additional labour costs being negligible. The cost of the new meter (~\$2K in 2025) would be borne by the building permit applicant or by capital funds in the case of a District-planned water service replacement.

Option 2 - Accelerated Water Metering Program

This second option involves a capital program to install meters on all remaining unmetered properties within five to ten years. It is the fastest route to universal metering, the most expensive in the short-term and disruptive to residents and streetscapes.

With approximately 20,052 single-family properties requiring meters, the total program cost is approximately \$79M of new funding and would require significant additional staffing resources. Lifecycle costs and the potential impact of rapid meter installation on ongoing operating expenses have not yet been modelled but will be included in the water metering business case.

This cost does not include the remaining unmetered multi-family properties, which is approximately 40% of the total multi-family properties within the DNV. Retrofitting meters on multi-family units is very disruptive, difficult to install, and costly. Staff recommend a two-pronged approach for the remaining unmetered multi-family properties: add meters through redevelopment over time and also offer an option of voluntary metering for properties that proactively choose metered rates for potential conservation or financial benefits.

Vegetation and structures within boulevards would be impacted considerably. Should Council choose this Option 2, staff recommend spreading this work over five to ten years - with approximately 2000-4000 water meters installed per year - until full implementation.

Option 3 – Status Quo/Defer Water Metering

This third and final option maintains current practices of metering only ICI, multi-family, and coach houses. The most significant benefit of this third option is that it avoids immediate costs. However, it does not establish a pathway to universal metering. It delays leak detection, unauthorized use, equity among ratepayers, and conservation benefits and presents a risk of a costly retrofit if regional or regulatory requirements arise. Staff note a growing risk that Metro Vancouver will require or incentivize universal metering in the future. It would also mean the District foregoes the opportunity to gradually advance metering during new development and service renewals.

Staff note that should Council decide to pursue Option 3, the District will remain as the sole municipality in Metro Vancouver that does not require meters or meter-ready installations on new construction. The District of West Vancouver has water meters on all properties while the City of North Vancouver requires meters on new construction.

Comparison of Water Metering Approaches:

Phase	Activity	Option 1 – Incremental	Option 2 - Accelerated	Option 3- Status Quo/Defer
1	Update bylaw to require meters on all new construction or building permits > \$300K	Year 1	Year 1	No new action until required
2	Metering all new connections & renewals	Ongoing including SF	Ongoing including SF	Ongoing, excluding SF Only ICI and MF per current practice
3	Develop metered rates & Utility rate review	Years 1-2	Years 1-2	Optional
4	Implement metered water rates for single family and Multi-Family properties	Years 2-5	Years 2-5	Deferred, only if mandated
5	Introduce a voluntary metering program for both Single-Family and Multi-Family properties.	Years 5-10	Optional/limited uptake	None
6	Retrofit all remaining Single-Family (Capital Program)	Years 10-20 (aligned with completion of Asbestos Cement watermain replacement program)	Years 5-10 (capital program)	Deferred, only if mandated
Impacts				
Approximate Capital Cost (excl. inflation)		Low (paid mostly by property	High (\$79M for ~20K SF)*	Deferred but highest (if mandated later)

Phase	Activity	Option 1 – Incremental	Option 2 - Accelerated	Option 3- Status Quo/Defer
		owners as part of building permits)		
	Operating Costs	TBD*	TBD*	TBD*
	Disruption to residents and boulevards	Minimal – only at new builds/renewals	High (extensive excavation over 5-10 years)	Very high in future if forced to retrofit on accelerated timeframe
	Risk if metering becomes mandated or incentivized	Low- already progressing	None	High – future accelerated program
	Ability to detect and reduce leaks/unauthorized use	Gradually improves from Years 1-20	Rapidly improves from Year 5-10	Limited
	Equity	Metered rates can be phased in over 20 years with voluntary program in the meantime	Metered rates achieved in year 10	SF remains on flat rates

*The water metering business case will assess how capital spend will be offset by reduction in water consumption and leakage as well as ongoing operating and financing costs.

Concurrence:

Finance, Development Services and Climate Action and Parks departments were consulted and have provided concurrence.

Financial Impacts:

Advancing water metering has different financial implications depending on the approach. Financial implications will be assessed in detail as part of the water metering business case.

Option 1 (Incremental Water Metering Approach) can be largely accommodated within existing budgets in the short term by installing meters during new building construction major building permit upgrades and new water service installations during watermain or water service replacement projects. Most initial costs are borne by applicants on a cost-recovery basis, and additional data collection can be managed with existing staff and automated meter reading technology. Operating costs will rise when transitioning from flat-rate to metered billing; however, the utility rate review currently underway will help define metered rate structures and identify how these operating costs can be phased in gradually. This phased approach spreads capital costs over 10–20 years, minimizes near-term rate impacts, and begins to capture avoided costs, such as the estimated \$1.5 million per year in water lost to private-side leakage.

Option 2 (Accelerated Water Metering Approach) would require approximately \$79 million in new capital funding to retrofit all single-family services within 5–10 years and would require multiple installation crews and a dedicated project manager. While it achieves system and equity benefits sooner, it creates a significant short-term financial burden and would likely require borrowing or substantial rate adjustments. The full financial impact of this option is currently unknown as long term impacts are being considered in the scope of the water metering business case.

Option 3 (Status Quo / Defer) carries no immediate financial cost but leaves the District exposed to continued non-revenue water losses, operating inefficiencies, and potentially much higher capital costs if universal metering is mandated or incentivized in the future.

Social Policy Implications:

Advancing towards Universal Water Metering and ultimately metered rates in the District will increase equity for water consumers¹. Metering will also provide quality data to inform rate setting, engineering decisions and financial investment.

Environmental Impact:

Water metering has the potential to help achieve initial and sustained water demand reductions through leak detection and behaviour change. In the face of climate change—bringing hotter, drier summers and increased pressure on water resources—metering can help the District of North Vancouver use the region's water resources in an efficient and equitable manner.

Environmental impacts from metering can be minimized by installing meters at the time of new construction or service renewal.

Conclusion:

Water metering enhances billing fairness in rate design, supports leak detection to reduce avoidable costs, and provides critical water use data needed to operate and manage the water system. While implementing water metering as a program is costly, a phased approach enables the District to move forward in a prudent and pragmatic manner by adopting water meters as our standard and then leveraging any increases in residential development. Completing a water meter business case will assess the full financial impacts of expanding water metering in the District.

¹ The results of a metering pilot study in the District of Mission found that 80% of homes with a meter installed, use less water than the average consumption volume ([Metro Vancouver Best Practices Guide for Local Governments](#)).

The results of the business case will be presented to the Finance and Audit committee. Following this presentation and resulting feedback, a Council meeting or workshop will be scheduled to seek further Council direction.

Respectfully submitted,



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Manager, Utilities

REVIEWED WITH:

☐ Sustainable Community	_____
☒ Development Services	BD _____
☐ Utilities	_____
☐ Engineering Operations	_____
☒ Parks	CJ _____
☐ Environment	_____
☐ Facilities	_____
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☐ Clerk's Office	_____
☐ Communications	_____
☒ Finance	RD _____
☐ Fire Services	_____
☐ ITS	_____
☐ Solicitor	_____
☐ GIS	_____
☐ Real Estate	_____

External Agencies:

☐ Library Board	_____
☐ NS Health	_____
☐ RCMP	_____
☐ NVRC	_____
☐ Museum & Arch.	_____
☐ Other:	_____

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