Water Metering in the Village of Glenwood

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Purpose

This report examines the current state of residential water metering and rate structures across comparable Alberta municipalities. It looks at what similarly sized villages are doing, compares several nearby communities as benchmarks, outlines estimated equipment costs and funding sources that could help the Village of Glenwood offset the capital cost of a metering program, and reviews filtration options to protect residential irrigation systems connected to the Village's non-potable irrigation water supply.

Background and Context

The Village of Glenwood currently operates on a flat-rate water billing model. This is not uncommon for small municipalities in Alberta, but it is increasingly out of step with provincial expectations and best practices. As drought conditions have become a more frequent concern across southern Alberta, there is growing recognition at both the provincial and federal level that consumption-based billing is one of the most effective tools available to municipalities for managing demand.

The Alberta Municipalities association notes that conservation pricing involves setting the cost of water in a way that incents users to use less. Some municipalities scale the cost of water to how much the consumer is using — the more they use, the higher their rate. This approach can help municipalities recover more of the true costs of providing water, assisting in full cost accounting while still giving consumers the option to save money by using less.

The use of accurate meters also allows utilities to closely monitor water within their system and quickly identify breaks and leaks, resulting in a reduction of lost resources and promoting a more sustainable system.

Research from Statistics Canada has consistently shown that per capita water use is higher in municipalities that are more rural, and that the share of the population in rural areas that is metered is less than 60%. This lower metering rate is identified as an important factor in the higher average water use observed in rural areas.

Part 1: Small Alberta Villages (Population 200–700)

What the Data Shows

Publicly available rate schedules for small Alberta villages in this population range are limited, as many do not post detailed utility bylaws online. However, the research conducted for this report, combined with provincial program documentation and a review of several comparable community websites, supports the following findings:

- Most villages in this population range operate one of two models: a flat-rate model, where all residents pay the same monthly fee regardless of consumption, or a metered model, with a fixed base charge plus a variable consumption rate per cubic metre.
- A number of small villages have moved toward metering in recent years, often prompted by provincial grant incentives or drought-related water conservation pressures.
- The two village-level examples below — Mannville and Alliance — are particularly instructive because they represent fully metered systems operating at a scale directly comparable to Glenwood.

Village of Mannville

Population: Approximately 700. Located in east-central Alberta (Minburn County).

In 2009, the Village of Mannville replaced or installed radio frequency water meters with data logging capabilities in all residential, institutional, and commercial buildings and began charging consumption fees at a rate of $1.50 per cubic metre on deep well water. This is one of the clearest documented examples of a small Alberta village completing a full metering transition. The use of radio frequency meters with data logging was forward-thinking for the time and gave the Village the ability to identify leaks, monitor consumption trends, and bill accurately on a consumption basis. More than fifteen years later, Mannville continues to operate this system, and the transition is widely cited by Alberta Municipalities as a model for smaller communities.

Key takeaway: A village roughly comparable to Glenwood in scale completed a full metering rollout at a single point in time. The RF meter technology available today has improved considerably since 2009, and costs have come down relative to the capabilities offered.

Village of Alliance

Population: Approximately 166 (2021 census). Located in central Alberta (Flagstaff County), approximately 160 km east of Red Deer.

The Village of Alliance operates a fully metered water system supplied by two wells through an upgraded treatment plant. All residences and businesses are charged $3.10 per cubic metre. Sewer rates are also based on metered water usage, at $1.90 per cubic metre of water consumed. In addition, residents pay a water infrastructure charge of $25.00 per month and a sewer infrastructure charge of $25.00 per month as fixed base charges.

The billing structure is straightforward:

- Water: $25.00/month infrastructure charge + $3.10/m³ consumption
- Sewer: $25.00/month infrastructure charge + $1.90/m³ based on metered water use
- Community Enhancement Fee: $5.00/month (recreation, parks, maintenance)

The consumption rate of $3.10/m³ is on the higher end relative to larger communities in this report, which is not uncommon for small villages where the per-connection cost of operating a water system is higher. However, the structure itself is sound: residents who conserve pay less, and the infrastructure charges ensure the Village recovers its fixed operating costs regardless of consumption levels.

Key takeaway: If a village of 166 people can operate a fully metered water and wastewater system with consumption-based billing, there is no operational or administrative barrier that would prevent the Village of Glenwood from doing the same. Alliance demonstrates that this is not a function of community size.

Side-by-Side: Mannville vs. Alliance

	Village of Mannville	Village of Alliance
Population	~700	~166
Metered?	Yes (since 2009)	Yes
Meter Technology	RF with data logging	RF Meters
Water Rate	$1.50/m³ (2009 rate)	$3.10/m³
Sewer Rate	Not published	$1.90/m³ (based on water use)
Fixed Infrastructure	Not published	$25.00/mo water + $25.00/mo sewer
Notes	Early adopter, long term success	Smaller than Glenwood; fully metered

The Flat-Rate Problem

Flat-rate billing is widely acknowledged as a driver of overconsumption. When residents pay the same amount regardless of how much water they use, there is no financial incentive to conserve. This is particularly problematic in summer months when outdoor watering can dramatically spike system demand. Most water bills in Alberta have two main components: a fixed fee component and a variable amount based on how much water you consume as measured by a water meter. The fixed charge covers the cost and maintenance of the water meter, as well as the cost of reading the meter monthly and issuing the bill.

Communities without meters have no way of accurately attributing costs to the users who create them, and no way to identify system losses or unauthorized use. Both Mannville and Alliance have moved beyond that model.

Part 2: Comparison Communities

The following information was drawn from current municipal websites, bylaws, and publicly posted utility rate schedules.

Town of Cardston

Population: Approximately 3,600. Cardston operates a fully metered system managed through a billing arrangement with ENMAX.

Current residential water rates for 2026 are a flat rate of $29.30 per month plus a consumption charge of $1.45/m³. Residents without a meter are charged a flat rate of $130.00 per month with no consumption component, remaining at $130.00 in 2027 as well. Rural residential metered customers pay $58.60 per month flat plus $1.88/m³.

The differential between the metered rate ($29.30 base) and the no-meter rate ($130.00 flat) is particularly instructive. Cardston has structured its bylaw so that unmetered customers pay a significant premium, creating a financial incentive for customers to welcome metering. This is a model worth considering for Glenwood.

Key takeaway: Cardston's 2026 unmetered flat rate is $130/month versus approximately $50–$80/month for a typical metered customer using average consumption. The difference sends a clear and fair conservation signal.

Town of Magrath

Population: Approximately 2,500. Magrath operates a fully metered system.

Water rates in Magrath are based on two elements: a flat rate charge to cover fixed customer-related costs such as routine maintenance, billing, accounting, fire protection, and debt payments; and a consumption charge for each cubic metre of water used. Water meters are read every month and customers are billed per unit. Magrath's approach is straightforward and resident-friendly: monthly reads, clearly itemized billing, and a structure that rewards conservation. Magrath has also been proactive on water conservation planning, engaging with provincial drought response guidance.

Village of Stirling

Population: Approximately 1,200.

The Village of Stirling provides water and sewage services with water sourced from the Cross Coulee Dam. Stirling's utility information page does not publish a detailed rate schedule publicly, but the Village does operate its own water and sewer system. Based on the structure of its services, Stirling appears to have basic metered billing in place for residents.

Town of Pincher Creek

Population: Approximately 3,600. Pincher Creek operates a metered water system billed bi-monthly.

In accordance with the Town of Pincher Creek Water Utility Bylaw, Wastewater Utility Bylaw, Garbage Utility Bylaw, and Fee Structure Bylaw, current utility rates are posted on the town's website and listed per billing cycle of two months. Pincher Creek has recently overhauled its water and wastewater bylaws, and sewer charges will eventually be calculated according to usage rather than the previous flat rate. Property owners are now required to install an initial water service connection to their property, and low-flow fixtures are required in new construction. The updated bylaws also establish clear rules that promote investor confidence, with the town noting that investors look for communities that have their regulatory frameworks in order.

Summary Comparison Table

Municipality	Population	Metered?	Base Monthly Rate	Consumption Rate	Unmetered Rate
Village of Glenwood	~500	No	Flat rate	N/A	$57.50
Town of Cardston	~3,600	Yes	$29.30/mo	$1.45/m³	$130.00/mo
Town of Magrath	~2,500	Yes	Base + consumption	Per m³	Not published
Village of Stirling	~1,200	Yes (basic)	Not published	Per m³	N/A

Municipality	Population	Metered?	Base Monthly Rate	Consumption Rate	Unmetered Rate
Town of Pincher Creek	~3,600	Yes	Bi-monthly billing	Per m³	N/A
Village of Mannville	~700	Yes (since 2009)	Not published	$1.50/m³	N/A
Village of Alliance	~166	Yes	$25.00/mo infra	$3.10/m³	N/A

Note: Glenwood figures reflect the current flat-rate model. All other rates are from publicly posted 2025/2026 utility bylaws.

Part 3: Water Meter Equipment – Estimated Pricing

For planning purposes, residential water meters are typically 5/8" or 3/4" in size. Commercial and institutional connections may require 1" or larger. The prices below reflect estimated retail pricing in Canadian dollars for planning estimation purposes only. Actual procurement pricing through a volume purchase will vary and should be confirmed with suppliers directly.

Standard Mechanical Meters (Entry-Level)

- Badger M25 5/8" x 3/4" HRE Water Meter: approximately $390 CAD per unit
- Neptune ProCoder T-10 5/8" x 3/4": pricing varies; comparable to Badger
- Basic manual-read residential meters (generic/DAE brand): $140–$220 CAD per unit, depending on size and register type

Advanced / Smart Meters (AMI/AMR Capable)

- Sensus iPerl 5/8" x 3/4" smart water meter: approximately $420 CAD per unit. The iPerl has no moving parts and maintains accuracy over a 20-year lifetime, with Advanced Metering Infrastructure connectivity and 14 condition, diagnostic, and lifetime alarms.
- Metron Farnier Spectrum 30D Smart Water Meter: approximately $385 CAD per unit

Pricing Summary

Meter Type	Approx. Price (CAD)	Notes
Basic mechanical (DAE, entry level)	~$140	Manual read; ~20-yr lifespan; entry cost
Badger M25 5/8"×3/4" (standard residential)	~$390	Industry standard; AMR-compatible
Metron Farnier Spectrum 30D (smart)	~$385	AMI capable; no moving parts; data logging
Sensus iPerl 5/8"×3/4" (smart/AMI)	~$420	20-yr accuracy guarantee; remote diagnostics; 14 condition alarms

All prices are approximate Canadian dollar equivalents and are provided for planning purposes only. Volume purchase pricing from Canadian distributors will differ. Confirm current pricing directly with suppliers.

Estimated Project Cost for Glenwood

Installation costs are not included in the unit pricing above and will vary depending on whether meters are installed in meter pits, inside basements, or require additional plumbing work. A reasonable estimate for labour and minor materials per installation in a small Alberta community is $150–$400 per connection, though this should be confirmed with a local contractor prior to budgeting.

Based on approximately 150–200 residential and commercial connections in the Village:

Scenario	Meters (CAD)	Installation (CAD)	Estimated Total (CAD)
Basic mechanical, 175 units	~$68,000	~$44,000	~$112,000
Smart/AMI meters, 175 units	~$74,000	~$44,000	~$118,000

These are planning-level estimates only and do not include bylaw amendments, billing software integration, or ongoing maintenance. All figures are in Canadian dollars.

Part 4: Residential Irrigation System Filters

Overview

The Village of Glenwood operates a non-potable irrigation water system that delivers water to individual residential lots for outdoor use. Because this water is sourced separately from the potable supply and may carry higher levels of suspended sediment, organic debris, and particulate matter, point-of-connection filtration at each lot is an important consideration for protecting residential hoses, drip irrigation systems, and sprinkler heads from premature clogging and damage.

Non-potable irrigation water commonly contains sand, silt, algae fragments, and fine organic matter that would not be present in treated potable water at the same concentration. Sprinkler nozzles, drip emitters, and hose fittings are particularly vulnerable to this type of debris, and even a modest accumulation can reduce system efficiency or cause component failure. A properly selected inline filter at the standpipe connection significantly extends the life of downstream irrigation components and reduces resident maintenance calls.

Current Option Under Consideration

Administration is currently reviewing the following filter for potential specification as the Village standard:

- Southern Irrigation Plastic WYE Screen Filter, 3/4", 120 mesh — $18.16 CAD

This is a reasonable entry-level option. The 120 mesh screen (approximately 125 microns) provides adequate filtration for larger particles and is well-suited for basic hose and sprinkler

use. The WYE (Y) configuration allows the filter to sit at an angle off the main connection, which facilitates gravity-assisted sediment accumulation and makes it easier to clean without fully disconnecting the system. At $18.16 per unit, it is also among the more affordable options available.

However, given the nature of non-potable irrigation water and the potential for higher debris loads compared to treated water, it is worth considering whether a finer mesh or a more robust filter type would better serve residents with drip systems or micro-sprinklers. The following alternatives are presented for Council's consideration.

Alternative Filter Options

Option A: Rain Bird RBY 3/4" Inline Y-Filter (200 Mesh, Stainless Steel)

The Rain Bird RBY is a professional-grade inline Y-filter constructed with a glass-filled polypropylene body and a stainless steel 200 mesh screen element (75 microns). It connects directly to 3/4" threaded valves and pressure regulators and is widely used in residential drip irrigation and micro-sprinkler systems.

Key features:

- 200 mesh stainless steel screen (75 micron) — approximately 40% finer than the 120 mesh option, better suited for protecting drip emitters
- Cap has a sealing O-ring and unthreads easily for screen removal and rinsing
- Rated to 150 PSI; glass-filled polypropylene body for long service life
- Works with all brands of 3/4" irrigation valves
- Approximate retail price: $25–$35 CAD

Best suited for: residents with drip irrigation systems, micro-sprinklers, or any application where fine particle exclusion is important.

Option B: Netafim DF075-140 Disc Filter, 3/4" (140 Mesh)

The Netafim DF075-140 is a 3/4" manual disc filter designed specifically for agricultural and commercial irrigation systems where water quality is variable and debris loads are higher. Rather than a flat screen mesh, it uses a stack of precision-grooved plastic disc rings that create a three-dimensional filtration surface, trapping particles from multiple angles as water passes through.

Key features:

- 140 mesh stacked disc element (approximately 115 microns) — superior dirt-holding capacity compared to flat screen filters
- Disc technology provides significantly greater surface area for filtration, meaning longer intervals between cleaning under heavy debris conditions
- 17 GPM maximum flow rating — adequate for residential irrigation standpipes
- Shut-off valve integrated at inlet for field servicing without shutting down the main line
- Designed for non-potable and surface water applications where debris loads are higher than treated water
- Available from Canadian irrigation suppliers (e.g., Irrigation Direct Canada) at $49.50 CAD

Best suited for: higher-debris irrigation water; residents with in-ground systems; applications where cleaning frequency needs to be minimized.

Option C: DIG P09-155 3/4" Polyester Screen Filter (155 Mesh)

The DIG P09-155 is a heavy-duty Y-style filter with a 155 mesh polyester screen element (approximately 100 microns). It includes a flush cap at the bottom for easy field cleaning without disassembly and is a popular choice for residential drip and micro-sprinkler systems.

Key features:

- 155 mesh polyester screen — finer than the 120 mesh WYE option and suitable for protecting emitters and micro-sprinklers
- Flush cap at the bottom allows particles to be purged without removing the filter from the line
- Chemical-resistant screen material
- Approximate retail price: $20–$28 CAD

Best suited for: a practical middle-ground option where residents have both hose use and basic drip systems on the same connection.

Comparative Summary

Filter	Type	Mesh	Best For	Price (CAD)	Maintenance
Plastic WYE Screen Filter 3/4" (current option)	WYE/Screen	120	Basic sediment removal; hose connections	$18.16	Unscrew cap; rinse screen
Rain Bird RBY 3/4" Inline Y-Filter (200 mesh stainless steel)	Y/Screen	200	Drip irrigation; valves and pressure regulators; finer filtration	~$25–$35	O-ring sealed cap; remove screen to rinse
Netafim DF075-140 Disc Filter 3/4" (140 mesh)	Disc	140	Non-potable surface water; higher debris loads; agricultural-grade	$49.50	Remove disc stack; rinse or backflush
DIG P09-155 3/4" Polyester Screen Filter (155 mesh)	Y/Screen	155	Drip and micro-sprinkler systems; sediment and fine particles	~$20–$28	Flush cap; easy field cleaning

Mesh and micron equivalencies are approximate. Higher mesh numbers indicate finer filtration. All prices are in Canadian dollars and are approximate retail figures.

Recommendation Notes

The choice of filter will depend on how much debris is typically present in the Village's irrigation water supply throughout the season, and on what types of irrigation systems residents are most likely to have.

- If the irrigation water is relatively clean and residents primarily use standard garden hoses and oscillating sprinklers, the current 120 mesh WYE option at $18.16 CAD is a reasonable and cost-effective baseline.

- If residents with drip systems or micro-sprinklers are a known concern, or if the supply water has historically carried higher sediment loads, the Rain Bird RBY at $25–$35 CAD offers finer filtration and better sealing at a modest cost increase.
- For maximum protection of in-ground systems and longer service intervals between cleanings, the Netafim disc filter at $49.50 CAD is the most robust option and is specifically designed for the debris conditions associated with non-potable irrigation water.

Regardless of which filter is selected, it would be advisable to include clear installation and maintenance guidance in any resident communication accompanying the irrigation system, noting that filters should be checked and cleaned at the start of each irrigation season and after any period of high-turbidity water delivery.

Part 5: Grant Funding Opportunities

Several provincial and federal programs are directly relevant to water metering infrastructure in a municipality the size of Glenwood. The following are the most applicable.

1. Alberta Municipal Water/Wastewater Partnership (AMWWP)

Program Administrator: Alberta Transportation and Economic Corridors **Website:** alberta.ca/alberta-municipal-water-wastewater-partnership

The AMWWP, which launched in 1991, provides cost-shared funding to eligible municipalities to help build municipal facilities for water supply and treatment, and wastewater treatment and disposal. Eligible projects can receive up to 75% of project costs, with funding calculated as a percentage of eligible project costs based on the municipality's official population when the grant is approved. This is the most directly relevant provincial program for a village of Glenwood's size.

Critically, municipalities may be subject to a reduced grant if they do not have water metering in place and the average annual consumption exceeds the norm for the area, or if they have water meters but a rate schedule based on consumption has not been implemented, or if water consumption rates are high and no water conservation program is in place.

This is a key consideration: the AMWWP actively penalizes municipalities that lack meters by reducing their funding eligibility for other infrastructure projects. Moving to metering not only improves the utility program itself — it also protects the Village's access to future AMWWP grants for unrelated water and wastewater work.

Potential funding: Up to 75% of eligible project costs. For a small village like Glenwood, the grant percentage is maximized by population.

2. FCM Green Municipal Fund (GMF)

Program Administrator: Federation of Canadian Municipalities (FCM), funded by the Government of Canada **Website:** fcm.ca/en/programs/green-municipal-fund

The Green Municipal Fund offers grant and financing support for environmental sustainability projects, including water conservation infrastructure. The FCM provides grant funding for feasibility studies covering up to 50% of eligible costs to a maximum of $175,000. Pilot projects receive grant-based funding up to $500,000, covering approximately 50% of eligible costs. For municipalities under 20,000, smaller municipalities can request up to 80% funding. Capital

project financing is available as a combination of low-interest loans and grants, covering up to 80% of project costs up to a maximum of $10 million.

A metering program for Glenwood could be structured as a capital project under GMF, with the feasibility and study phase potentially funded first, followed by capital implementation support.

Potential funding: Up to 80% of project costs for small municipalities, through a mix of grants and low-interest loans.

3. Canada Housing Infrastructure Fund (CHIF) – Direct Delivery Stream

Program Administrator: Housing, Infrastructure and Communities Canada **Website:** housing-infrastructure.canada.ca

The federal government invested over $369.5 million through the CHIF direct delivery stream in 2025 to build or improve essential infrastructure needed to promote new housing supply and increase density. These investments improve and expand access to potable and reliable drinking water, establish new water supplies, and provide critical infrastructure. While CHIF is primarily housing-enabling infrastructure, water meter systems that support accurate billing and adequate service for new connections qualify under the program's drinking water infrastructure criteria. Municipalities of all sizes are eligible, and the fund has a direct-delivery stream that does not require provincial intermediary administration.

Potential funding: Up to 40–50% of eligible costs for municipalities; eligible for projects that support housing growth and water system capacity.

4. Investing in Canada Infrastructure Program (ICIP) – Green Infrastructure Stream

Program Administrator: Delivered through the Province of Alberta; federal funding via Housing, Infrastructure and Communities Canada

The ICIP Green Infrastructure Stream supports projects that improve the resilience of communities and reduce greenhouse gas emissions. Water efficiency infrastructure, including metering programs that reduce energy-intensive water treatment and pumping demands, can qualify under this stream. This program is most likely to be accessed through Alberta Transportation as the provincial delivery agent. The Village should inquire directly with its regional Transportation contact about project eligibility under any current ICIP intake.

Potential funding: Up to 50–73% of eligible costs depending on project category and intake.

Grant Funding Summary

Program	Administrator	Max. Funding	Notes
AMWWP	Alberta Transportation	Up to 75%	Most directly applicable; lack of meters reduces AMWWP eligibility for all future projects
FCM Green Municipal Fund	FCM / Government of Canada	Up to 80%	Mix of grant and low-interest loan

Program	Administrator	Max. Funding	Notes
Canada Housing Infrastructure Fund	Housing, Infrastructure Canada	Up to 50%	Direct delivery; all community sizes eligible
ICIP – Green Infrastructure	Province of Alberta / Federal	Up to 50–73%	Requires provincial intake; inquire with regional office

It is worth noting that these programs can often be stacked, subject to stacking rules. For example, a project co-funded by the AMWWP and a portion of FCM financing could substantially reduce the Village's net capital cost well below 25%.

Key Takeaways and Recommendations

Summary of Findings

- Metering is the provincial norm. Every comparable community in this report has moved to or is moving toward consumption-based billing. Glenwood is an outlier, and the gap is growing.
- Cardston's rate structure offers a useful model. The differential between metered rates (~$50–$80/month for average use) and unmetered flat rates ($130/month) sends a clear, fair signal to residents. A similar approach in Glenwood would make the transition easy to explain and justify.
- Alliance and Mannville prove the concept at village scale. If Alliance, with a population of 166, can operate a fully metered water and wastewater system, there is no operational argument against Glenwood doing the same.
- Equipment costs are manageable. A complete residential metering program for Glenwood is estimated at $112,000–$118,000 before grants. With AMWWP funding at up to 75%, the Village's net cost could be in the range of $28,000–$30,000, potentially less if additional federal funding is stacked.
- Not metering has a hidden cost. Beyond the operational arguments, the absence of meters can reduce the Village's AMWWP grant percentage on unrelated water and wastewater projects. This risk compounds over time.
- Irrigation filter selection warrants a decision by Council. The current option under review (120 mesh WYE, $18.16 CAD) is adequate for basic hose use. For residents with drip or micro-sprinkler systems, a finer mesh option (Rain Bird RBY at $25–$35 CAD or Netafim disc filter at $49.50 CAD) would provide better protection given the debris characteristics of non-potable irrigation water.