

July 2, 2026

MEMO TO: Janine Jordan, City Manager

FROM: Zulima Lopez, Parks, Recreation and Public Facilities Director
Randy Norvelle, Parks Manager
Jim Gerhart, Parks Supervisor – Park Maintenance and Irrigation

SUBJECT: Parks Watering Updates

Meeting Type & Date

Work Session
July 14, 2026

Action Type

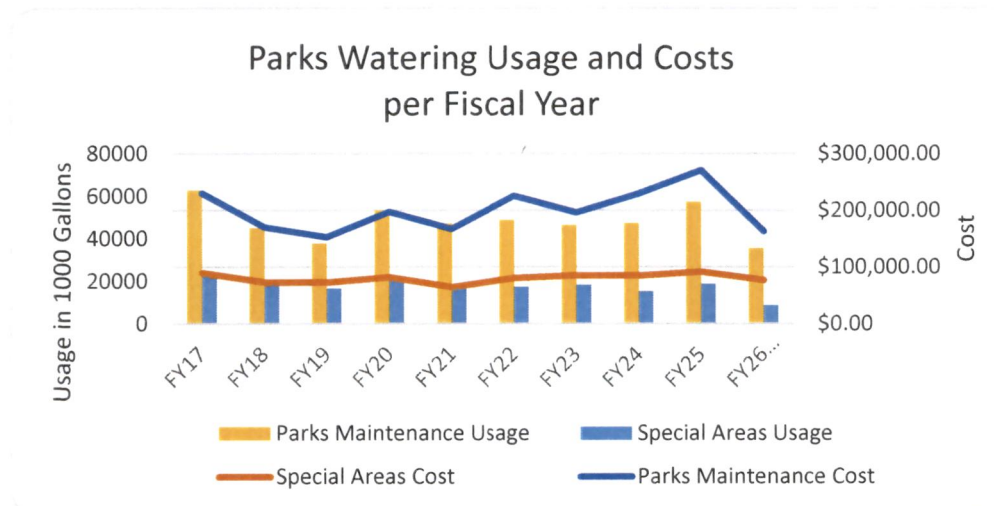
Information Only

Recommendation

That Council hear updates to gain understanding of the various efforts undertaken to improve park watering efficiency for water conservation and cost control.

Summary

The Parks Division manages approximately 120 acres of irrigated parkland and numerous irrigated special-use areas throughout the community. Water conservation has been a strategic priority for several years as irrigation costs and water resource concerns have increased. Since 2022, the Parks Division has implemented a number of strategies to conserve water and reduce associated costs, including irrigation control and pump station modernization, evaluation of raw water conversions, advocating for alternative municipal park water rates, and irrigated area reductions and naturalization. The City's long-term goal is to improve irrigation efficiency, reduce water consumption, minimize operating costs, and preserve healthy park landscapes while being responsible stewards of the community's water resources. The graph below shows water usage and costs per fiscal year (FY) since FY 2017.



A detailed summary of the status of the primary efforts to improve irrigation efficiency, conserve water, and reduce costs are provided below.

1. Baseline Irrigation Control System: The Baseline Irrigation Control System (Baseline) Project is a citywide irrigation automation project that utilizes base station controllers, substation controllers, flow monitoring stations, and supporting communications infrastructure to manage irrigation activities throughout the City. The system is designed to provide:
 - Centralized irrigation management
 - Remote programming and monitoring
 - Flow-based leak detection
 - Soil moisture-based irrigation adjustments
 - Automated weather-responsive watering schedules
 - Operational labor efficiencies

At the onset of the project, of the City's 145 separate irrigation systems, forty-five (45) systems were on antiquated or cellular controllers and all other areas required manual shutoff and restart at the irrigation location. The Baseline project, which began in FY23, was expected to take approximately 28 months to complete utilizing City staff to complete all work. Implementation has taken longer than originally anticipated. The installation status as of June 2026 is shown below.

Category	Total Installed Remaining		
Base Stations (3200 Controllers)	21	21	0
Substation Controllers	91	47	44
Baseline 1000 Controllers	2	2	0
Flow Meters	101	29	72
Soil Moisture Meters	114	3	111
Total Irrigation Sites	114	70	44

Major locations completed include City Hall, all fire stations, the Ford Wyoming Center, Highland Cemetery, the Soccer Complex, Washington Park, Crossroads, Fairdale Park, Mike Sedar Park and Paradise Valley Park. Major locations remaining include Fort Casper Park, Nancy English Park, Amoco Park, City Park, Riverview Park, Huber Park and Eastdale Park. The project is now expected to be completed over the next three years, if only utilizing staff resources.

Based on completed locations, system performance data, and irrigation reduction initiatives, staff anticipates continued reductions in water consumption through the implementation of centralized controls, leak detection, and optimized scheduling gained with the Baseline project. Representative examples are below:

Location	Improvement	Estimated Water Savings (in Gallons)
Soccer Complex	Centralized control and flow monitoring	5,000,000
Washington Park East	Centralized control and flow monitoring	500,000
Fairdale Park	Centralized control and flow monitoring	175,000

The Baseline Irrigation Control System continues to support the City's efforts to contain operating costs while improving system reliability and sustainability. Savings generated through reduced water consumption, lower leak-related losses, and operational efficiencies help offset implementation and maintenance expenses. Annual savings and budget impacts will continue to be tracked and reported as additional sites become operational.

In addition to the Baseline Project, irrigation pump station replacements have taken place to improve irrigation system performance and efficiency. Locations with pump stations that have been replaced or upgraded since 2022 include Paradise Valley Park, Crossroads/FWC, Casper Soccer Complex, and two stations at the Municipal Golf Course. Upgrading the pump stations with variable frequency drive (VFD) technology, integrated monitoring, and advanced flow management has significantly improved system performance while reducing operating costs. By matching pump output to actual irrigation demand, pump motors operate only at the speed necessary to deliver the required flow, reducing electrical consumption and improving overall efficiency. The upgraded system maintains consistent water pressure throughout the irrigation network, minimizing water hammer events, reducing friction losses within the pipeline system, and decreasing stress on valves, fittings, and mainlines.

Enhanced control capabilities provide real-time remote monitoring and operation, reducing staff travel time, improving response times, and simplifying system troubleshooting. Integration with the Baseline irrigation system provides accurate flow measurement and reporting, improving water accountability, and allowing leaks or abnormal flow conditions to be identified and addressed more quickly. In addition, operating pumps and motors at lower average speeds reduces mechanical wear, extending equipment lifespan and lowering long-term maintenance and replacement costs.

Industry experience has shown that VFD-controlled pump stations can reduce electrical consumption by 15% to 40%. While staff expect similar savings at the Ford Wyoming Center (FWC), electrical cost reductions have not yet been verified because utility billing data for June is not yet available for comparison against previous years.

Although no historical flow data exists for the FWC due to the limitations of the previous pump station, the performance improvements of the new system are already evident. The upgraded pump station is capable of utilizing the full capacity of the existing 4-inch mainline, reducing the required irrigation window from approximately 14 hours to just 6.5

hours. This increased efficiency provides greater operational flexibility while ensuring irrigation demand can be met within a significantly shorter timeframe.

The precise pressure management provided by the new pump station has also contributed to a reduction in infrastructure failures. Similar upgrades at the North Casper Soccer Fields resulted in a noticeable decrease in mainline breaks, and staff anticipate the same outcome at the FWC. While the system has only been operational for six weeks, there have been no reported mainline leaks to date, indicating a positive early trend in system reliability and reduced maintenance requirements.

2. Raw Well Water Irrigation: Currently, several athletic fields, the Municipal Golf Course, Fort Caspar, Paradise Valley, and Wells Parks are irrigated through raw well water. Converting additional irrigation systems to raw well water irrigation has been explored further. Locations that have the highest probability for success and impact are the Bryan Stock Trail (BST) boulevard, Riverview Park, the Casper Central Service Facility, and the Water Distribution Garage. While this strategy remains in our long-term plan to conserve watering costs, work on this strategy has not advanced in the last two years due to limited resources and a focus on other projects.
3. Alternative Water Rates: The Parks Division historically paid for water to irrigate public parks at the same retail rate that was paid by residential and commercial users. In 2022, the department requested Council's consideration to create an alternative rate category for public parks and green spaces. In recognition of the public benefit provided by municipal parks, athletic fields, the cemetery, golf course, and other seasonal public facilities, the City Council approved a dedicated Casper Municipal Parks water classification effective June 1, 2025. Under the adopted rate structure, qualifying municipal park services are billed at a lower volumetric rate than the standard retail water rate. The anticipated impact of the new rate classification was a reduction in annual irrigation expenditures, allowing the Parks Division to redirect limited resources toward other maintenance priorities. Preliminary budget estimates projected savings in excess of \$28,000 annually, with actual savings dependent upon weather conditions, water demand, and irrigation practices. The total realized savings are estimated at approximately \$30,000 for fiscal year 2026.
4. Irrigated Area Reductions and Naturalization: Staff identified several turf areas for naturalization or conversion to lower-water-use landscapes. These efforts align with recommendations contained in the Casper Area Parks and Recreation Master Plan and support the City's long-term sustainability goals. Parks where turf has been replaced with less water-intensive uses include:
 - Marion Kreiner (pump track and skate park)
 - Sage Park (Arboretum)
 - City Park (large shelter reduced turf)
 - Fun Valley Park (larger shelter reduced turf)

In the next 2-3 years, turf reductions are also planned at Eastdale Park, where bike trails throughout a naturalized park and an obstacle course will replace most of the manicured turf and at Mike Sedar Park, where a large all-wheels park is planned.

Related, areas that have been partially or fully naturalized include:

- Long Park
- Riverview Expansion
- Nancy English Park
- Meadow Park
- Fort Caspar Park
- Washington Park West

In response to property tax reductions and their anticipated impacts to the General Fund, additional measures were taken beginning in FY26 to lower irrigation and maintenance costs. Several landscaped special areas were eliminated or reduced to conserve water and limit maintenance expenses. In addition, watering frequency reductions were implemented throughout the park system based on site use, visibility, turf condition, and irrigation infrastructure capabilities. Modified irrigation schedules were estimated to generate a 35% reduction in water consumption with a total savings of approximately \$87,000. Staff estimate the actual reductions were 38% with \$100,000 in savings. Actual results continue to be evaluated using water consumption data, field observations, and irrigation system reporting.

While the implementation of irrigation reductions and naturalization efforts have generated measurable conservation benefits, some turf areas have experienced significant stress during this reduction period. These impacts were compounded by an exceptionally warm and dry winter, resulting in increased turf dehydration, winter injury, and localized thinning in several park areas. In response, the Parks Division is actively implementing recovery measures in affected locations. These efforts include targeted irrigation adjustments, overseeding, aeration, turf rehabilitation, and continued monitoring of site-specific conditions. While recovery timelines will vary depending on weather and site conditions, staff have already observed improvements in several locations and remains committed to improving overall park health, while maintaining conservation efforts where practical.

The Parks Division continues to closely monitor park conditions throughout the community and respond accordingly to balance conservation objectives with community expectations for safe, attractive and functional parks spaces.

Financial Considerations

The Parks Division experienced a significant reduction in water usage during FY26. However, it remains to be seen whether the existing turf can recover from the combined effects of reduced irrigation and an unusually warm, dry winter. Additional watering may be required to restore affected areas, and the Division could incur extra costs for sod and seed to rehabilitate the most severely damaged turf.

Council Adopted Goals

- ☒ Infrastructure – Irrigation infrastructure upgrades yield savings in water consumption and maintenance.
- ☒ Fiscal Stability – Maximizing irrigation efficiency will reduce costs associated with park and green space watering and maintenance, helping to control expenses in the City's General Fund.
- ☐ Communication & Public Education

Oversight/Project Responsibility

Zulima Lopez, Parks, Recreation, and Public Facilities Director

Randy Norvelle, Parks Manager

Jim Gerhart, Parks Supervisor – Park Maintenance and Irrigation

Attachments

None