Virgin Town

To: Mayor and Town Council Members

From: Mark C. Meyers, Town Manager

Date: August 6, 2026

Subject: East Water Tank Change Orders

Background

As construction of the east water tank has progressed, issues have emerged that necessitate change orders to the original engineering of the project. Two significant ones include the provision of altitude control valves. The valves control the level of water among all three water tanks – west, central and east. Without them, the west and central tanks could overflow. The second is the amount of existing water pressure in the distribution system to fill the new east tank. It has been determined that more pressure is necessary and that upsizing a portion of the main along SR 9 would provide it. Of course, a larger diameter main will also provide general capacity improvement to the system overall as well.

Attached is a detailed explanation of the two proposed change orders from consulting engineer Troy Washburn of Sunrise Engineering. Also attached is a proposed scope of work change to the our engineering contract to provide for the design of the two projects. Sunrise is not charging the Town for the additional work. However, the attached construction estimates indicate that the two projects will take up the majority of the excess funds from the East Tank project. But water impact fees could also be used to offset costs.

Town Engineer Rod Mills will be present at the August 12, 2026, town council work meeting to further discuss the altitude valve and watermain upsizing projects.

Recommendation

Staff recommends the Council discuss the proposed change orders to the East Water Tank project and provide direction to proceed with design.

Virgin Town — Proposed Additional Water Projects Summary

Purpose

This summary describes proposed water-system improvements that may be completed using funds remaining after completion of the East Water Tank project. The purpose of the proposed work is to improve operational control of the Town's storage facilities and begin a needed upgrade of the Town's primary transmission line along SR-9.

The estimated remaining funds available after the East Water Tank project is complete are $1,165,000.00. The current estimated construction cost for the proposed additional improvements is $1,071,780.00, leaving an estimated $93,220.00. The estimated construction cost includes a 20% contingency fund. The construction estimate includes the altitude control valve work and approximately 5,000 linear feet of 12-inch C900 PVC transmission pipeline.

Proposed Improvements

1. Altitude Control Valves at the West and Main Tanks

The first proposed improvement is installation of a 10-inch altitude control valve and vault at the west tank and an 8-inch altitude control valve and vault at the main tank. Each installation would include the altitude control valve, valve box or vault, gate valves, and all related piping and appurtenances necessary for a complete, functioning installation.

Installation of the altitude control valve at the main tank will also require relocating the existing tee and valve cluster on the inside of the main tank fence. This relocation is necessary to create sufficient space for the new valve vault.

Rationale. The west and main tanks are lower in elevation than the new east tank. The west tank is the lowest storage facility; the main tank is approximately 9 feet higher than the west tank, and the east tank is approximately 5.5 feet higher than the main tank.

Because the east tank is the highest tank, it will establish when water is received from the Washington County Water Conservancy District (WCWCD). Without altitude control valves, filling the east tank could cause the lower west and main tanks to overflow. The proposed altitude control valves will allow the lower tanks to fill and then automatically control the water level so the east tank can be filled without overflowing the west or main tanks.

Once the east tank is full, the three storage tanks will work together to supply water to the Town's distribution system. The altitude control valves are therefore needed to provide reliable and coordinated operation of the Town's storage system and to support the intended function of the East Water Tank project.

The current construction estimate includes $125,000 for the 10-inch west tank altitude control valve and vault and $135,000 for the 8-inch main tank altitude control valve and vault. The 8-inch altitude control valve has a higher cost due to the need to relocate the existing tee and valve cluster.

2. Initial Segment of 12-Inch SR-9 Transmission Line

The second proposed improvement is installation of approximately 5,000 linear feet of 12-inch C900 PVC transmission pipeline on the north side of SR-9, beginning at the PRV vault and extending east toward West

Temple. The final installed length may be adjusted based on actual costs for the altitude control valve installations and completion of the pipeline design.

Rationale. The Town's existing transmission lines that run parallel to SR-9 consist primarily of 8-inch and 6-inch water lines. As the Town continues to grow, the existing lines will become increasingly restrictive to water delivery, resulting in greater head loss, reduced system pressures, and longer fill times for the Town's water storage facilities.

The Town's long-term need is to upsize the SR-9 transmission system to a continuous 12-inch transmission main through Town. The Town's water model indicates that upsizing this transmission line will improve system pressures under projected growth conditions and help maintain sufficient pressure during fire flow events.

In addition to improving distribution system performance, this transmission-line upgrade is essential to fully realize the benefits of the new East Water Tank. The existing transmission lines limit the rate at which water can be conveyed from the PRV vault to the East Water Tank. Increasing the transmission main to 12 inches will reduce head loss and allow the tank to fill more quickly and efficiently, improving the Town's ability to keep the tank at or near its operating water level. Maintaining the East Water Tank at the proper operating level ensures that the Town can maximize the available storage volume and maintain adequate system pressure during periods of peak demand and fire flow. This project therefore complements the East Water Tank project by improving the Town's ability to fully utilize its newest water storage facility and receive the greatest benefit from that investment.

Constructing the first segment from the PRV vault to West Temple begins this long-term transmission-line upgrade at the upstream end of the system, where water enters the Town's distribution network, while providing immediate operational benefits to the existing and future water system.

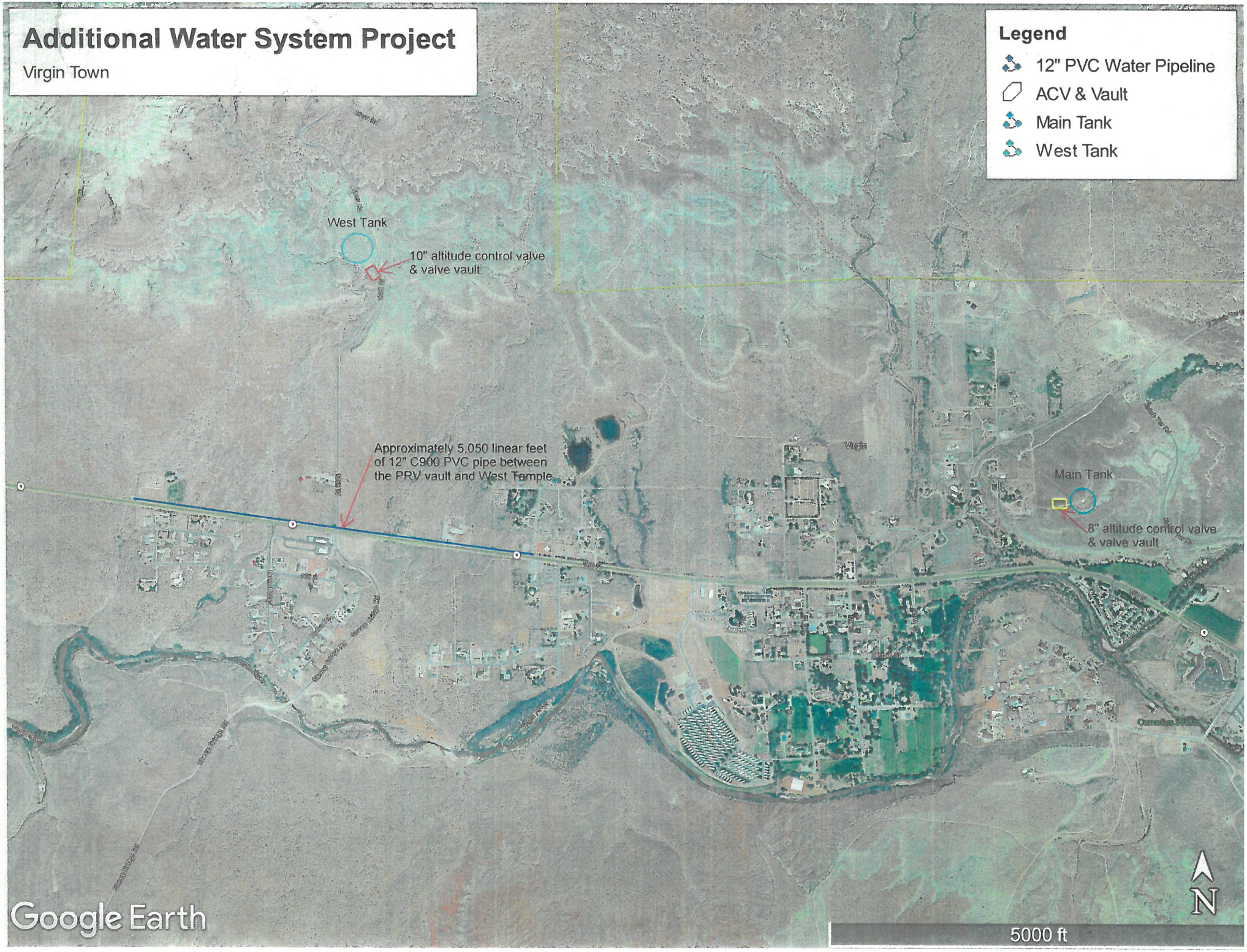
The estimated construction cost for approximately 5,000 linear feet of 12-inch C900 PVC pipe is $540,000. The final length and cost will depend on design and construction factors, including:

- The number and configuration of distribution-system connections to the new line;
- Whether roadway or drainage culvert borings are required;
- Whether the existing pipeline must be abandoned in place or removed; and
- Actual costs of the altitude control valve and vault installations.

Proposed Implementation Approach

The proposed work would be sequenced to advance the highest-priority operational improvements while efficiently using the contractor's time:

1. Complete design of the west tank altitude control valve and vault.
2. Complete design of the main tank altitude control valve, vault, and required relocation of the existing tee and valve cluster.
3. Authorize construction of the altitude control valve improvements as soon as practical.
4. Continue design of the 12-inch SR-9 transmission pipeline while the contractor performs the tank valve and vault work.
5. Complete the pipeline design in time for construction to proceed as the valve installations are nearing completion, subject to available remaining funds and final construction costs.


Additional Water System Project
Virgin Town
Legend
12" PVC Water Pipeline
ACV & Vault
Main Tank
West Tank
West Tank
10" altitude control valve & valve vault
Approximately 5,050 linear feet of 12" C900 PVC pipe between the PRV vault and West Temple
Virgin
Main Tank
8" altitude control valve & valve vault
Google Earth
N
5000 ft

PRELIMINARY PROJECT EXHIBIT