

**JOINT PROPOSAL TO DOUGLAS COUNTY FOR HIGHWAY-85 WATER AND WASTEWATER
INFRASTRUCTURE**

**By DOMINION WATER AND SANITATION DISTRICT, TOWN OF CASTLE ROCK, AND PLUM CREEK WATER
RECLAMATION AUTHORITY**

TOTAL ESTIMATED COUNTY INVESTMENT: \$27.5 MILLION

Purpose:

The purpose of this proposal is to outline a project to provide centralized wastewater collection and treatment to serve the Highway 85 corridor through a collaborative partnership between Douglas County (County), Dominion Water and Sanitation District (Dominion), the Town of Castle Rock (Castle Rock), and Plum Creek Water Reclamation Authority (PCWRA). The Highway 85 corridor does not currently have a viable solution to addressing not only economic constraints but the long-term operations, maintenance, and sustainability of centralized water and wastewater infrastructure without the partnership as outlined in this joint proposal and County investment. The joint parties to this proposal have been working collaboratively to find the right solution to centralized wastewater for over a year and are pleased to provide this proposal to Douglas County.

This proposal provides a viable and sustainable solution for existing customers along the Highway 85 corridor with long term benefits to include improving the environmental and water quality challenges along Plum Creek and ultimately Chatfield Reservoir, providing a solution to existing communities that currently experience economic constraints while improving the economic viability of the corridor for existing and future residences of Douglas County.

Leveraging available American Recovery Plan Act (ARPA) monies, Dominion's existing regional water and wastewater infrastructure, Castle Rock's existing regional water infrastructure and extensive operational capabilities, and PCWRA's extensive operational capabilities and experience, there is an incredible opportunity to provide regional service to communities needing it now. This opportunity is made possible through the development of regional infrastructure by the three water and wastewater providers, a long-standing partnership between Dominion and Castle Rock, and financial resources coming available to the County.

This proposal as outlined below is being presented to the County with several options to provide flexibility for the County in accessing the ARPA monies. This proposal can be scaled as desired by the County.

The Need:

Douglas County has identified a need to provide centralized wastewater along the Highway 85 corridor. There is no centralized wastewater in the corridor currently. The benefits of a centralized wastewater corridor include the following:

- Improving the environmental and water quality in Plum Creek, a tributary to Chatfield Reservoir, by providing an option for existing properties on failing septic tanks or connected to an outdated failing wastewater lagoon system to connect to a centralized system.
- Providing a wastewater conveyance system for new development along the corridor that will offer an alternative to septic systems in the future.
- Allowing for future economic development along the corridor including higher value and denser commercial and industrial uses that will provide primary jobs for County residents as well as higher density residential development.

- Protecting the water quality in Chatfield Reservoir by eliminating existing septic tanks and an outdated failing wastewater lagoon system, as well as providing for more robust treatment than septic systems for new development. It is important to note that Chatfield Reservoir, a drinking water supply for Douglas County and much of the Front Range, did not meet water quality standards in 2020 and those standards are expected to only tighten in future years.

There has been a significant amount of analysis completed to support a centralized wastewater solution for the corridor to include, the Diamondback Study (Study), which was initially completed in 2015 and then updated in 2019. This Study provides a comprehensive understanding of infrastructure components required for centralized wastewater and identifies likely stakeholders who would be interested in those services in Northwest Douglas County, including:

- Town of Louviers, Colorado (Louviers)
- Town of Sedalia, Colorado (Sedalia)
- Titan Road Industrial Park
- Douglas County Law Enforcement Training Center
- Plum Valley Heights
- Douglas County Facilities
- CORE Electric Cooperative (formerly IREA)
- Various private property owners

Benefits from this Project:

- Brings a sustainable solution with stakeholder collaboration to the Highway 85 corridor by creating a strong partnership between the County and three regional entities, Dominion, Castle Rock, and PCWRA on a regional wastewater conveyance and treatment plant to best utilize regional assets for the benefit of current and future Northwest Douglas County residents and businesses.
- Funds the infrastructure needed to clean up the septic systems and open sewer lagoons along Highway 85 and upstream of Chatfield Reservoir through a centralized wastewater collection and treatment system.
- Provides a catalyst for regionalized wastewater, supporting existing industry and future economic development in Northwest Douglas County.
- Ensures control of water quality going into Chatfield Reservoir with treatment by an experienced, existing water reclamation provider already providing services in the Chatfield watershed.
- Grows the sustainable, renewable water supply within the Chatfield basin using regional infrastructure in place and planned by Castle Rock and Dominion to capture and use return flows from that renewable water supply within Douglas County.
- Creates economies of scale keeping costs in check for water and wastewater customers in Douglas County and provides an opportunity to consolidate some of the small, underfunded water and sanitation districts into more sustainable service arrangements.
- Reduces reliance on non-renewable groundwater in the Northwest portion of Douglas County extending the life of this supply and protecting it as a future drought supply.
- Gives the opportunity to obtain and utilize sanitary sewer line easements in a dual purpose as a future potential trail network along Plum Creek all the way from Cherokee Ranch to Chatfield Reservoir.

Summary of Partnership

Through the numerous discussions regarding the centralized wastewater proposal the joint parties have identified a preliminary understanding of the responsibilities, commitments, and benefits for each. It is anticipated that these responsibilities and commitments may need to be refined through intergovernmental agreements as the project proceeds forward. All parties agree to continue to work towards a reliable and sustainable centralized wastewater solution.

- Douglas County
 - Provide the upfront capital investment necessary to fund the sewer collection system along the highway 85 corridor.
 - Provide overall leadership to the project.
 - Provide public outreach and stakeholder involvement during design and construction of the project.
 - Identify capacity requirements in the corridor based on land use planning and an understanding of future potential economic development.
- Dominion:
 - Provide wholesale water and wastewater services **for existing** retail districts along the Highway 85 corridor, satisfying the original intent of the formation of Dominion by the Board of County Commissioners to serve existing homes that are seeing declining well water and failing septic tanks or wastewater lagoon with municipal, conjunctive use service.
 - Provide wholesale water, as available, to interested retail districts along the Highway 85 corridor. Retail districts will be expected to comply with Dominion's rules and regulations. Dominion will retain all ownership and control of any wastewater return flows accruing from water supply provided by Dominion and not purchased by Castle Rock regardless of location within the wastewater collection system.
 - Make the capacity in the existing wholesale wastewater conveyance facilities available for Highway 85 customers for up to 1 million gallons per day (MGD) to convey wastewater to the Chatfield Basin Water Reclamation Facility (CBWRF) Site in exchange for appropriate system development fees and rate revenue to spread costs for this infrastructure across a larger customer base.
 - Utilize existing phosphorus credits for the operation of a regional plant at CBWRF that Dominion has purchased and owns with those costs incorporated into system development fees for customers in the basin.
 - Design and construct a Water Reclamation Plant by 2025-2026 in support of the centralized wastewater proposal if approved by Douglas County. Dominion intends to design and construct a Water Reclamation Plant by 2028 or negotiate continued conveyance and treatment by others to serve its existing retail customers.
 - Partner with Castle Rock in raw water and reusable return flow infrastructure from the CBWRF site to support reuse and sustainable water supply within Douglas County.

- Give Castle Rock the first right of refusal to purchase return flows that Dominion has in excess that will be generated by customers along Highway 85. Dominion will retain all ownership and control of any wastewater return flows accruing from water supply provided by Dominion and not purchased by Castle Rock regardless of location within the wastewater collection system.
- Partner with Castle Rock to provide project management and engineering services for the construction of the infrastructure at a cost to the County of 1% of the capital cost.
- Castle Rock:
 - Own and operate the Highway 85 collection system infrastructure. Castle Rock would not undertake any land use authority with this responsibility. System development fees and or a small percentage of customer revenues would be collected and returned to the County to help pay back some of the County's initial investment.
 - Purchase wastewater return flows from Dominion and other water supply owners in the corridor to help offset costs of wastewater connection or infrastructure for the water supply owners. All wastewater return flows not purchased by Castle Rock from owner of the water supply will remain under the control and ownership of owner within the Highway 85 collection system infrastructure. Any wastewater generated by non-tributary groundwater will include the purchase of the groundwater rights with a \$1 lease back provision in perpetuity to the owner. This ensures Castle Rock has access to the water in the future if the owner of the non-tributary groundwater transitions to a renewable water supply that they do not own.
 - Serve as the retail provider of water and wastewater services for interested customers in the Highway 85 corridor for an appropriate fee including for existing small water and sanitation districts, allowing them to dissolve if desired. Water customers will be required to comply with conservation and sustainability requirements of Castle Rock to ensure uninterrupted retail service.
 - Set retail rates in accordance with cost of service utilizing the same basic approach and model used for Castle Rock's existing customers but utilizing the actual infrastructure, wholesale rates, and other applicable costs for the new service area. Castle Rock will include a 10% extraterritorial surcharge consistent with other extraterritorial services provided by Castle Rock.
 - Provide contract operations for Dominion's wholesale water and wastewater facilities, as agreed to between the entities.
 - Partner with Dominion in raw water and return flow infrastructure from the CBWRF site to support reuse and sustainable water supply within Douglas County.
 - Partner with Dominion to provide project management and engineering services for the construction of the infrastructure at a cost to the County of 1% of the capital cost.
- PCWRA:
 - Potentially own and operate Dominion's planned CBWRF plant and expansion.
 - Work with Dominion and Authority members to add Dominion to the PCWRA Board as an equal voting member assuming PCWRA owns and operates the CBWRF plant.
 - Help develop the organizational and operational needs to provide the additional wastewater treatment services at the CBWRF for the region.

- Manage the development of an estimated rate structure for wastewater treatment services in the region.
- Provide input to the sizing study and design of the future CBWRF to ensure the most cost-effective solution for the region.

Proposed Scope of Project:

The following three initiatives are proposed for initial County investment. These are presented to the County in such a way that allows the County to implement the project in phases. The final scope of what can be accomplished will depend on actual design, easement, and construction costs for the proposed infrastructure. The proposed infrastructure has been selected to be scalable depending on how actual costs perform.

Initiative 1 - Water Reclamation Plant Sizing and Design: Fund a portion (roughly 50%) of a sizing study, preliminary, and final design of a water reclamation plant up to 2 MGD as well as an operational evaluation and an initial rate development study to determine necessity for additional operational resources and an understanding of potential rate structure at the CBWRF site. The County's investment would pay for the sizing study and preliminary and final design for capacity that would be for the potential customers along the Highway 85 corridor.

Currently, Dominion has a lift station and 3.5-mile force main in place to convey all current and projected wastewater flows from existing customers and anticipated customers, up to an additional 1.0 million gallons per day capacity, along the Highway 85 corridor. Dominion is currently in the permitting and piloting process for a membrane bioreactor (MBR) WRF at the CBWRF site. Timing of the design and construction of the WRF by Dominion to meet the needs of its existing retail customers will likely be in 2028. Should the County approve the proposal for a Centralized Wastewater solution for the Highway 85 Corridor, Dominion will transition piloting efforts into design and construction through our existing progressive design build team of Carollo Engineering and Moltz Construction to achieve a design and construction schedule of 2025-2026, dependent upon permitting. Connection fees and/or service charges will be established to adequately recover Dominion's initial investment at the CBWRF and then pay back a portion of the County's initial capital investment from revenue generated by existing and new development along Highway 85.

It is important to understand that completion of the CBWRF is not critical to proceeding with Initiative 2 below. Dominion currently has agreements in place to pump wastewater to an existing wastewater plant for treatment until such time that the CBWRF is completed. This means that sewer service in the corridor does not have to wait for completion of the CBWRF.

Initiative 2 – Highway 85 Collection System Infrastructure: Fund the preliminary design, final design, and construction of regional wastewater components identified in the 2019 Diamondback study, such as the gravity sewers and force mains that connect stakeholders to a regional wastewater system. These infrastructure components are identified on the attached map (see Attachment A). There is opportunity to phase this construction and costs over time to reduce the grant request, and there is also the ability to scale the infrastructure down if actual design, easement and construction costs are higher than the preliminary estimates from Diamondback's study.

A portion of Connection fees generated by customers along Highway 85 connecting to this sewer infrastructure and/or surcharges from monthly wastewater service fees will be repaid to the County for capital recovery of some portion of this investment related to new development or re-development.

Initiative 3: Provide Cost Assistance to Louviers to Solve Long Term Water Issue & Connect to Regional Wastewater Service: Douglas County will fund the cost to install the trunk sewer line to Louviers. Louviers portion of connection fees will be paid as outlined below. Louviers is in need of a water supply and wastewater solution that meets Colorado Department of Public Health and Environment (CDPHE) regulatory requirements. Louviers Water and Sanitation District (Louviers WSD) is currently under an enforcement order from CDPHE due to radionuclides found in its groundwater supply and has an outdated wastewater lagoon system. As part of this proposal, the partnership has outlined an initiative that can provide a reliable, cost effective, and sustainable solution for Louviers WSD for both water and wastewater.

Dominion will provide a renewable potable water supply connection to the community of Louviers. In return, Louviers WSD will dedicate the groundwater rights to Dominion to become part of Dominion's conjunctive use system that will achieve 70% renewable sources over a 10-year rolling average. Castle Rock will have the first right of refusal to purchase the groundwater wells to deliver to Plum Creek for use into the future.

Understanding the economic hardships to the community of Louviers for a long-term renewable water supply, the partnership will offset the anticipated total infrastructure cost of \$6.5M as follows. DWSD recognizes that there are additional benefits to its service area with the potable water supply connection and only requests that Louviers pay for their connection fee at \$4.5M for 110 lots plus 2 Douglas County parks. Costs will be further offset by the first right of refusal purchase of up to 22.5 acre feet per year (AFY) of reusable return flows at a cost of approximately \$30,000 per AF or \$675,000 by Castle Rock. This brings Louviers' total obligation to DWSD to \$3.3M which DWSD will finance over 30 years at an interest rate of 3.0%. It is anticipated that the monthly increase per SFE for this needed infrastructure will be approximately \$60 per month. We feel that this option is competitive when compared with other options provided in the August 24, 2020 Enforcement Order Engineering Report.

This initiative is presented to Douglas County as part of this proposal to provide an effective alternative long-term water supply solution for the community of Louviers. Alternatively, should Douglas County desire that the proposed solution for the community of Louviers for water supply be separated out, Dominion commits to work with Douglas County and Louviers under a separate initiative from this project to connect Louviers to Dominion's renewable water supplies. Castle Rock Water can still purchase the reusable supply from this approach to help offset the costs of connection. For purposes of estimating costs, we have assumed that there are no additional costs to Douglas County for the long-term water supply initiative for the community of Louviers.

Estimated Costs

A breakdown of estimated costs for each initiative are provided in the table below. The scope of the final infrastructure will be scaled according to available funds and actual construction costs identified from bids after final design. Dominion and Castle Rock staff will manage the design and construction of various infrastructure pieces listed below for a project management fee of 1% of the capital cost to be paid by Douglas County to each entity based on their percent management of the capital costs as part of the overall proposal and partnership.

COUNTY INVESTMENT FOR CENTRALIZED WASTEWATER ALONG HIGHWAY 85

Description	Estimated Cost
Initiative 1: Water Reclamation Plant Sizing Study, Preliminary, and Final Design	\$2,000,000
Initiative 2: Highway 85 Collection System Infrastructure	
2 MGD Force Main from US-85 Titan Road Lift Station to Dominion's Titan Road Lift Station	\$1,500,000 ¹
2 MGD US-85 Titan Road Lift Station	\$5,000,000 ¹
Gravity Sewer from Reynolds Industrial Park to US-85 Titan Road Lift Station	\$7,421,000 ²
Force Main from Sedalia Lift Station to Reynolds Gravity Line	\$1,675,000 ²
0.5 MGD Sedalia Lift Station	\$3,000,000 ¹
Gravity Sewer from Sedalia South to Sedalia North	\$4,358,000 ²
Easements	\$1,400,000 ³
Sub-Total Project Costs for County Investment – Centralized Wastewater Along Highway 85	
Initiative 3: Provide Cost Assistance to Louviers to Solve Long Term Water Issue & Connect to Regional Wastewater Service	
Louviers Trunk Sewer	\$200,000
Louviers Wastewater System Development Fees to Dominion	\$672,000
Sub-Total Project Costs for County Investment	\$27,226,000
Town of Castle Rock Management Fees (0.5% of Project Costs)	\$136,130
Dominion Management Fees (0.5% of Project Costs)	\$136,130
Total Upfront Investment by County	\$27,498,260

Notes:

¹Estimated costs based on recent construction of similar facilities.

²Preliminary engineering estimates identified in the Diamondback Studies from 2018 and 2019. Numbers escalated using Engineering News Record from 2018 to 2021 costs.

³Costs estimated from actual easement acquisition costs during ERPP project.

System Development Fees and Approach to Payback of County's Investment

Existing development and new development in the corridor will be required to pay system development fees (SDFs) to connect to the regional wastewater system. Costs will include SDFs for infrastructure funded by Dominion as well as SDFs for infrastructure funded by Douglas County.

The total costs for each portion of the wastewater collection and treatment system will be calculated and divided by the total number of estimated long term single family equivalents (SFEs) that the corridor will support as identified in the Diamondback studies. The total SFEs are estimated based off of a long term total wastewater flow of 1.2 million gallons per day (MGD) identified in the Diamondback studies and 200 gallons per single family equivalent from Castle Rock Water's Wastewater Collection Design 2018 Criteria Manual. This results in an estimated 6,000 SFEs.

Investments to date and estimated future capital costs by Dominion in the force main and lift station, wastewater treatment plant and other wastewater infrastructure result in a current estimated SDF of \$6,000 per SFE. These estimated SDFs are subject to change based on future needed capital investments for the system.

The total estimated investment for wastewater collection and treatment by the County is \$27.5M. The resulting needed SDF or payback from each SFE is \$4,583.

Potential Schedule

If approval of this partnership and regional concept moves forward by year end, a reasonable schedule is provided below:

Development of an Intergovernmental Agreement Between the Partners: 6 months to mid-2022

Consummate purchase of Louviers reusable effluent and design and construct renewable water supply connection early 2024

Design/Easement Acquisition/Permitting/Bidding: 12 to 18 months or mid-2022 to 2023

Construction: 18 to 24 months depending on final scope 2023 to 2025

Next Steps

Once the Boards, Commission and Councils of the partners have all agreed to the conceptual terms of the proposal, work should begin on an intergovernmental agreement to set out the details of the partnership.

Any intergovernmental agreement will then require formal approval of each Board, Commission and Council in order for the project to move forward.

As the intergovernmental agreement is developed, cost estimates and schedules would be further refined. Stakeholder outreach could proceed to identify additional project partners and community needs ahead of the start of design.