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## 1.0 INTRODUCTION

The Water Infrastructure and Supply Efficiency (WISE) project is a partnership between Aurora Water (Aurora), Denver Water, and the South Metro WISE Authority (South Metro). The purpose of WISE is to supply potable water to customers within the Denver Metropolitan Area, while minimizing new conveyance and treatment infrastructure and sharing water rights. The WISE partnership effectively reduces rates for customers, while ensuring conservation of water resources.

For this specific project, Denver Water and Aurora have committed to provide an interruptible, yet perpetual, potable water supply to South Metro through Aurora's Prairie Waters Project. Water deliveries began in 2017 and the Denver International Airport (DIA) Connection is the next phase of the project necessary for the parties to meet their commitments under the 2013 WISE Water Delivery Agreement (WDA). The pipeline alignment, connection points, and suppliers will provide reduced system water age and improved water circulation. Water quality provided to Denver Metropolitan customers through this pipeline will be improved overall.

South Adams County Water and Sanitation District (SACWSD) joined the Project in late 2023 as a partner for the installation of the trenchless E-470 crossing. The crossing will now include a parallel 16" water line adjacent to the Project's 18" pipeline for SACWSD future use as development extends into the area. This partnership further enhances the community benefits offered by the Project.

### 1.1 LAND USE PLANNING REQUIREMENTS

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A 1041 Permit is required for uses that have the potential to impact the environment, surrounding properties, or the general public. This Permit Application narrative aims to provide necessary information on the WISE Denver International Airport Connection project. This report summarizes the project background, intent, location, design process, and potential impacts on the surrounding areas. This application was developed in accordance with the following regulatory documents:

- Commerce City Municipal Code (2023), Chapter 22, Article III, Sec. 22-30 – Standards for approval of a permit application
- Commerce City Municipal Code (2023), Chapter 22, Article V, Sec. 22-65 – Additional permit-approval criteria applicable to municipal and industrial water projects
- Commerce City Land Development Code (2018), Article III, Division 2 Review; C: Applications Requiring City Council Approval, Sec. 21-3230 Conditional Use Permit
- Commerce City Comprehensive Plan (May 1, 2010)
- Pre-App Meeting and Written Response (January 24, 2023). See Appendix E.

This Prairie Waters Pump Station No. 2 property is zoned as Public. The intended use of the property will not be changed as part of this project.

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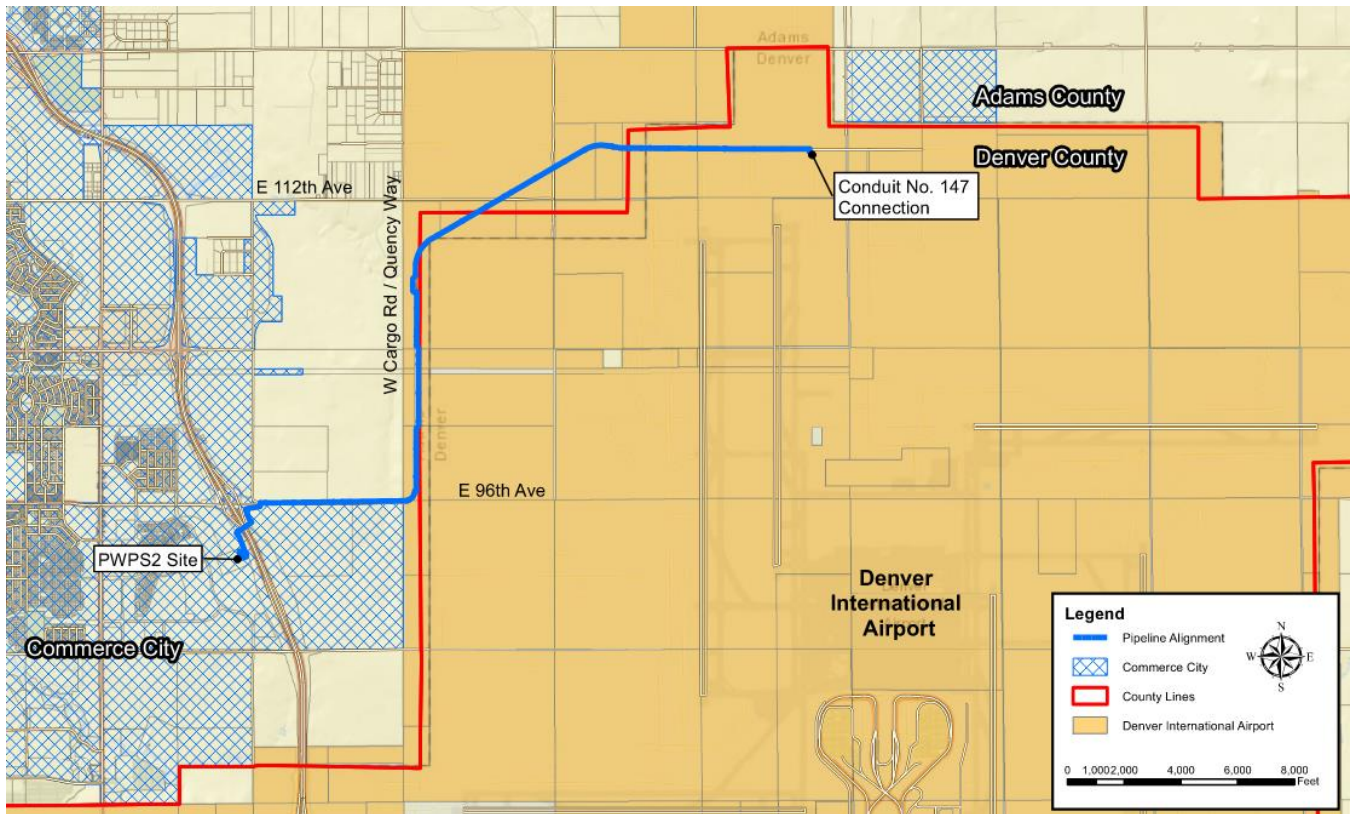
## 1.2 PROJECT BACKGROUND AND SUMMARY

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The WISE DIA Connection will be constructed between Denver Water’s potable water system at DIA and Aurora Water’s Prairie Waters Pump Station #2 (PWPS2). The 6-mile-long pipeline will provide a portion of Denver Water’s WISE obligation to South Metro.

Denver Water will determine the timing and amount of water available to the system with predetermined monthly and annual targets. Aurora Water will control what can be conveyed through the Prairie Waters System and the flowrate of water through the pipeline to maintain specific blending rates with other sources entering Aurora’s Binney Water Purification Facility. Detailed communication protocols and Standard Operating Procedures shall be developed between the Owners as part of this effort.

The pipeline route is approximately 32,350 feet of pipe. It begins at a connection to the 60” Prairie Waters Pipeline on the PWPS2 property in Commerce City and ends at the connection to Conduit No. 147 along East 114<sup>th</sup> Avenue in Denver. Approximately 8,150 feet of the pipeline alignment is located within Commerce City. The pipeline will be 18” in diameter and is intended to convey up to 6 million gallons per day (MGD). A map of the proposed alignment is provided below in **Figure 1-1**.



**Figure 1-1:** Pipeline Alignment

## 1.3 ENVIRONMENTAL ASSESSMENTS

### 1.3.1 Animal Habitat

Pinyon Environmental was contracted by Denver Water to conduct environmental field surveys for raptor birds, black-tailed prairie dogs, and delineate Waters of the United States (WOTUS) and associated wetlands. This investigation was completed on October 27 and 28, 2022. The full environmental report is included in Appendix B.

There were no raptor nests identified in the project area, however non-raptor migratory birds were present, specifically the Cliff Swallow located in the storm culverts throughout the project site. Any swallows' nests within 50 feet of construction operations during the migratory bird nesting season shall be relocated in accordance with State regulations.

There were five prairie dog colonies identified during the assessment and are illustrated on the provided project drawings. Prairie dogs are considered a species of special concern with the State. The prairie dogs can also provide burrow habitat for the Western Burrowing Owl which are considered a threatened species by the State. If a Burrowing Owl nest is discovered, impacts to these areas can only occur outside of the Burrowing Owl nesting season, after October 31<sup>st</sup> and before March 15<sup>th</sup>. No Burrowing Owls were discovered during the field survey. However, since the survey was performed outside of the owl nesting season, the lack of owls was not definitive. Denver Water has contracted directly with Pinyon to perform additional surveys during the owl

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nesting season in 2023 and 2024. If owls, are discovered the project team will review construction impacts and mitigation measures for the work will be implemented.

No other habitats were identified or are anticipated in the Project area. Changed to habitat or critical habitat will not be performed as part of the Project. Further information is provided in Appendix B.

### **1.3.2 Receiving Waters**

The project alignment crosses Third Creek outside of Commerce City limits (Adams County). Third Creek is a perennial stream that flows toward the northwest, ultimately discharging to the South Platte River, a traditional navigable water. The crossing of Third Creek will be performed via trenchless installation using Horizontal Direction Drill (HDD) methods eliminating impacts to the creek and surrounding wetlands. The project alignment is relatively flat, and site drainage is anticipated to follow the gradual slope towards Third Creek. No other surface waters are located near or within the project area, including lakes and reservoirs.

This Project's construction or permanency will not alter the trophic state of surface waters or functioning capacity of surface water retention due to it not residing in the vicinity of any surface waters. Project construction near Third Creek will be performed via trenchless installation methods, reducing any such risks to the Creek.

One WOTUS and associated wetland was determined in the project area. This is located at Third Creek which is outside of Commerce City limits. Jurisdictional requirements will be adhered to for the trenchless installation beneath Third Creek. No aquatic impacts or impacts to surface waters are anticipated as a result of this Project's construction. Best Management Practices, per the Commerce City Stormwater Management Plan (SWMP), provided in Appendix F, will be implemented and adhered to limiting disturbance. Disturbed areas will be revegetated and reestablished to preexisting conditions.

### **1.3.3 Groundwater**

Groundwater may be encountered during construction. A separate Construction Dewatering permit will be obtained through CDPHE by the selected contractor.

There are no anticipated impacts to groundwater during or after construction of this Project. Groundwater quality is anticipated to remain consistent from before and after Project construction.

### **1.3.4 Stormwater Management**

A SWMP was completed and submitted as a requirement for the Commerce City Grading Permit. This SWMP is included as Appendix F. The SWMP offers additional information regarding stormwater runoff, erosion, and potential project related pollutant sources. Additional impervious area added as part of this Project is isolated to the flow control building and was included in the drainage calculations previously approved in the site's 2007 drainage report and development plan.

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### **1.3.5 Environmental Responsibility**

Construction activities and long-term operation of this Project infrastructure are not anticipated to negatively impact the environment, surrounding habitats, or the functioning drainages in the Project area. Management of pollutants either anticipated or unanticipated, will adhere to local and federal regulations. Potential pollutant sources are further discussed in Appendix F.

### **1.3.6 Summary of Existing Soil Data and Land Use**

A geotechnical site investigation was performed by Lithos Engineering (2023) along the pipeline alignment which spans beyond the Commerce City boundaries. Material encountered during the investigation includes fill, eolian deposits, coarse alluvium, and bedrock consisting of Denver Formation claystone and siltstone and Dawson/Arapahoe Formation sandstone.

Construction activities and long-term project operations will not negatively impact the soil conditions along the Pipeline alignment.

## **1.4 PROJECT SCHEDULE**

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The final design documents for the Project were completed in early 2024. Construction is expected to begin in May 2024 and be completed in 2025.

## **2.0 PIPELINE AND ALIGNMENT**

The proposed pipeline crosses through Commerce City, Adams County, and Denver County. The pipeline will be an 18-inch diameter PVC pipeline that conveys potable water.

### **2.1 PIPELINE ALIGNMENT**

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The final design drawings are included in Appendix A. During conceptual design it was determined that the optimized alignment was to follow 96<sup>th</sup> Ave, Cargo Rd, and 114<sup>th</sup> Ave to minimize project length, costs, and impacts to private properties. The Project provides connection of services area within the Denver Metropolitan area and does not duplicate existing water connections above the necessary system redundancies.

The E-470 crossing had multiple alignments evaluated and the original selected alignment was to cross E-470 directly east of the PWPS2 Site. Due to future water quality pond upgrades and future frontage roads within the E-470 R/W, the crossing was relocated 1,000 feet north to avoid the proposed upgrades. The original alignment and relocated alignment are summarized in Figure 2-1 below.

South Adams County Water and Sanitation District (SACWSD) joined the Project in late 2023 as a partner in installing the trenchless E-470 crossing. The crossing will now include a 16" water line adjacent to the Project's 18" pipeline, for SACWSD to use as future development in the area is constructed.

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### 2.1.1 Alternative Alignments

Alternative alignments through Commerce City were not possible due to the PUD zoning designation of the property on the southeast corner of 96<sup>th</sup> Avenue and E-470 which prohibits installation of public utilities. Following the right-of-way of 96<sup>th</sup> avenue and crossing E-470 would have the least impact to property owners in Commerce City.

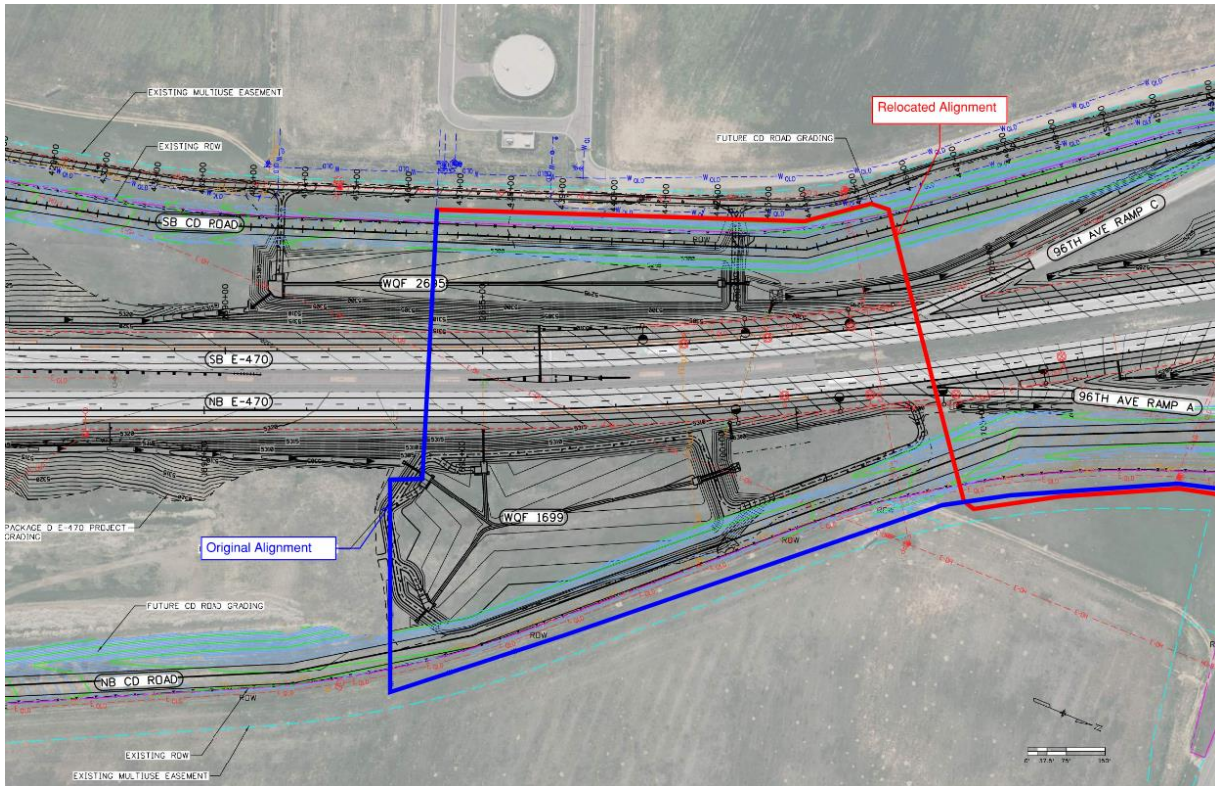


Figure 2-1: E-470 Alignment

## 3.0 PARCEL IMPACTS AND EASEMENTS

### 3.1 EASEMENTS AND ACQUISITIONS

There are no easements or property acquisitions that are required as part of this project. For the pipeline on the PWPS2 property, a license agreement with Aurora Water is required. For the pipeline within the E470 R/W and MUE, a license agreement and construction permit are required, and are in the final processes of being obtained. Additionally, E-470 is within Commerce City and a 1041 Permit is required for installation within this jurisdiction. The pipeline is within the R/W along E 96<sup>th</sup> Ave in Commerce City. A license agreement is required, and is approved, through DEN (DIA owned property) where the pipeline turns north along Quency St/Cargo Rd and to the DIA connection point. There is no designated R/W in this area. E-470 has allowed for temporary construction staging within their MUE and the license agreements with City of Aurora and DIA will include

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temporary construction staging and activities. Because new easements are not required, the project will not cause significant loss of agricultural lands.

### 3.2 PROOF OF OWNERSHIP

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The City of Aurora owns the PWPS2 site. The warranty deed, parcel plat and legal description are provided in Appendix C.

The E-470 property will require a construction permit and license agreement with Denver Water to reside within the MUE and cross E-470. This coordination with E-470 is ongoing and will be provided to Commerce City upon finalization.

## 4.0 COMPLIANCE WITH COMMERCE CITY COMPREHENSIVE PLAN

The proposed project will have minimal impact to the citizens of Commerce City. Provided below is an explanation of how the project aligns with Commerce City's goals and its comprehensive plan.

### 4.1 THREE C'S OF SUSTAINABILITY

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The three C's of Sustainability as outlined in the Commerce City Comprehensive Plan are described as:

1. **Commerce and Economy:** Vital economic development and fiscal stability, focusing on retaining existing businesses and attracting new businesses that fit with the goals of the community.
2. **Context and Environment:** Orderly growth and development that leads to a balanced city with great neighborhoods and commerce, sufficient infrastructure, connected parks and open space, and a positive appearance and image.
3. **Community and Social Well-Being:** Community and social facilities that provide for the safety, health, and well-being of its residents and promote efficient and wise use of resources, ensuring that future generations have opportunities for meaningful livelihoods.

This project will promote the Three C's of Sustainability. The First C, **Commerce and Economy**, discusses vital economic development and fiscal stability. The WISE partnership's primary purpose is to supply customers within the Denver Metropolitan Area with a larger quantity of water while minimizing the need to develop new infrastructure and obtain additional water rights. The benefit of this commitment from the WISE partnership is to ensure longevity of water supplies while reducing customer water rates. This infrastructure promotes growth and economic development by providing access to potable water supplies to Adams County. The pipeline will provide opportunity for additional water line connections, which may attract new businesses while also maintaining existing businesses through increased efficiency and reduction of water costs. This partnership aims to minimize the amount of infrastructure required to serve the Denver Metropolitan area, promoting fiscal stability for residents and businesses alike.

The Second C, **Context and Environment**, discusses having sufficient infrastructure while maintaining a positive appearance and image. This project will support Commerce City infrastructure by providing a potable water pipeline. This pipeline assists the entire Denver Metropolitan Area by providing and sharing potable

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drinking water. The pipeline will be fully buried with corresponding underground/at-grade valve boxes, access structures, air release valves, blowoff valves, and a meter vault. The new flow control building and above-ground backflow preventers are located within the PWPS2 property boundaries. These above-ground structures will match the existing architecture on site and have appropriate visual landscape screening features. These features help to maintain that positive appearance and image with the surrounding neighborhood and parcels.

The Third C, **Community and Social Well-Being**, promotes efficient and wise use of resources to ensure meaningful livelihoods in the future. This is the exact purpose of the WISE partnership. This pipeline improves water supply efficiency for the entire Denver Metropolitan Area including Commerce City and Adams County.

## **4.2 LAND USE AND GROWTH**

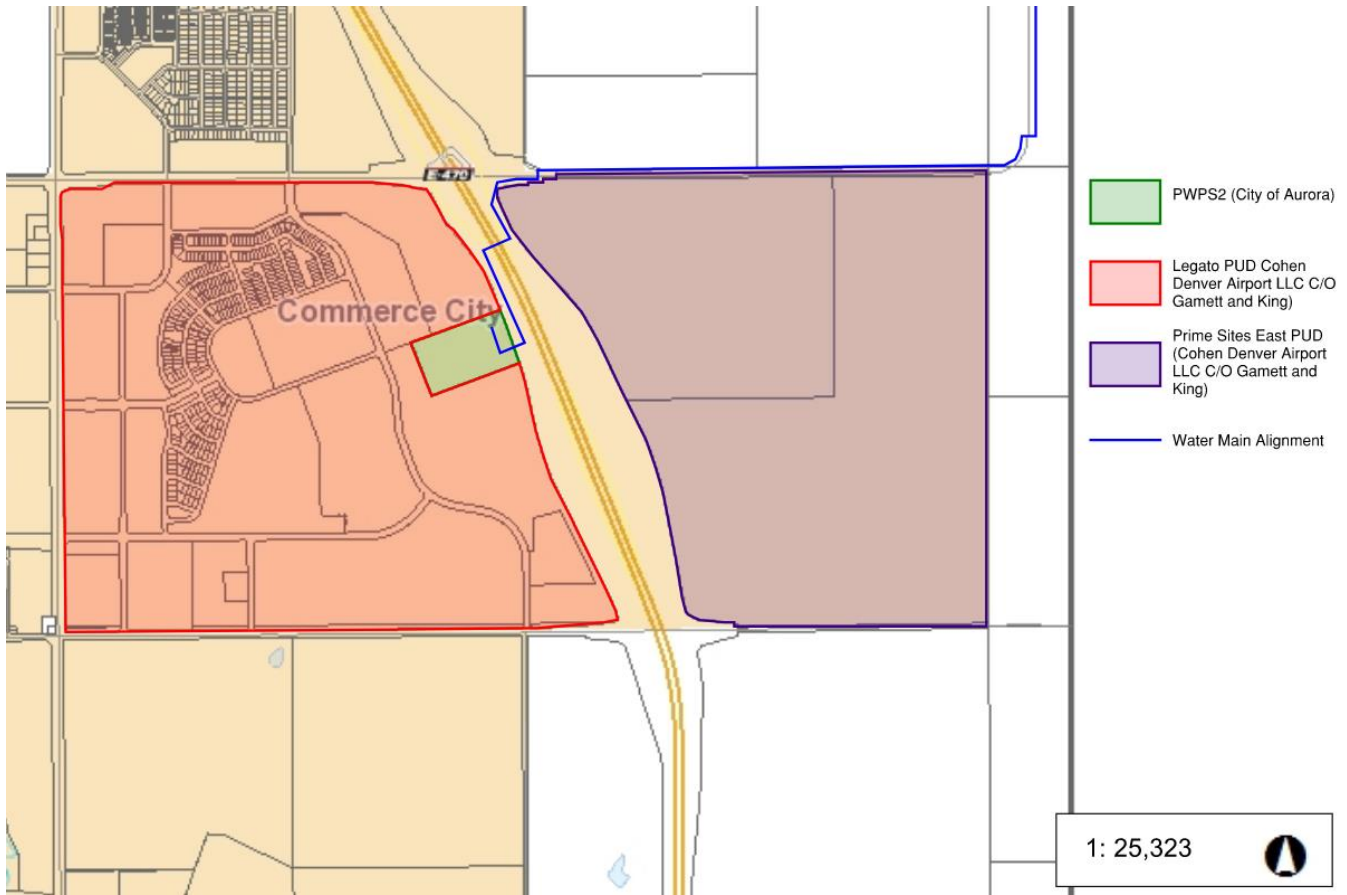
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The water main starts at the PWPS2 site owned by Aurora Water which resides within Commerce City. This Aurora Water property is surrounded on the north, west, and south sides by the Legato PUD which has not yet started construction. The east side of the property shares a property line with the E-470 Highway Authority. The highway has 75 ft wide Multi-Use Easements (MUE) on the east edge and west edge of the highway tract. The site east of the highway is in process of being developed under the name Prime Sites East PUD. The locations of these PUDS are provided in Figure 4-1.

The PUD properties prohibit utility installation. The alignment of the water main will leave the Aurora Water site, turn north to be installed along the western E-470 MUE, cross the highway using trenchless methods, then turn north again along the eastern E-470 MUE to cross 96<sup>th</sup> Ave. On the north side of 96<sup>th</sup> Ave, the alignment enters the R/W and turns east to Cargo Rd. This alignment avoids the PUD developments. Coordination with E-470 is ongoing and they have provided preliminary acceptance of this alignment and design.

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**Figure 4-1:** Parcel Ownership Along Pipeline in Commerce City

### 4.3 ECONOMIC DEVELOPMENT

This underground utility installation is expected to have negligible impact to the overall economic development. The planned location of the utility will not impact future development in these areas and or any existing businesses or job employment. Currently this area is largely undeveloped, and while there are multiple road crossings, there are not any businesses that will be directly affected by the construction.

The project will provide construction employment opportunities in the area which will also provide economic benefits to the local businesses. This benefit is considered to be short-term.

### 4.4 FISCAL STABILITY

The financing for this project is provided by the WISE partnership members, which is sufficient and readily available for the completion of this Project. This project provides upgraded potable water infrastructure within Commerce City limits. While this water main is considered to be a transmission main with no connections or service lines along the alignment, there is potential for future taps which will provide a potable water source for future development and annual service charges. The transmission main's primary purpose is

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to share unused potable water and improve water efficiency in the Denver metropolitan area, which will result in long-term operational savings for the municipalities involved.

No major rehabilitation is anticipated in the near future as the pipeline is primarily being constructed of corrosion resistant materials. Where there are ductile iron valves and fittings the design incorporated buried corrosion control sacrificial anode packs which will be regularly maintained and replaced.

#### **4.5 HOUSING AND NEIGHBORHOODS**

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This project will have no impact on residential developments; however, may offer a convenient source of potable water for future developments. The alignment was selected to avoid any conflicts with future residential, commercial, and industrial developments.

#### **4.6 REDEVELOPMENT AND REINVESTMENT**

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This project improves water supply efficiency and improved water quality to the Denver metropolitan area, therefore supporting growth and community around Denver including Commerce City. During the estimated 1-year construction period starting in 2024, the construction staff will likely increase economics by utilizing available services offered by Commerce City businesses.

#### **4.7 TRANSPORTATION**

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This project will not provide transportation improvements to the City or adjacent areas. There will be a total of four road crossings where shoulder or lane closures may be required. Within Commerce City limits, only one crossing of a public road will occur for Project construction. This is located on the east side of the E-470 and 96<sup>th</sup> Avenue interchange. This area is relatively undeveloped and impacts to the public are expected to be minimal. The crossing will take approximately four days for excavation, pipe and bedding installation, backfilling, and resurfacing. During construction of this crossing, a metal plate can be provided to minimize impacts to through traffic. Roadway and right-of-way impacts will be properly permitted through Commerce City.

#### **4.8 SAFETY AND WELLNESS**

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Safety is a top priority for the WISE ownership group. The selected Contractor will be required to provide a Safety Plan at the beginning of the project which will be reviewed and revised as necessary prior to approval. The engineer will staff field personnel during the duration of field activities to aid the Contractor in following the Safety Plan, OSHA guidelines, and general good construction practice.

A trenchless installation is planned at the E-470 highway crossing utilizing jack and bore methods. This will mitigate any traffic impacts or safety issues during this crossing's construction.

The Contractor will follow all guidelines as outlined in the Environmental Spill Reporting (CDPHE 2018) to provide measures necessary to avoid spills and contamination.

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There is no significant risk from floods, fires, earthquakes or other disasters or natural hazards other than what is typically expected for the area. The Contractor will adhere to proper safety protocols as dictated by Commerce City for any natural event that may occur.

#### **4.9 PARKS, OPEN SPACE, AND RECREATION**

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This project will have no impact to parks, open space, or recreation. The proposed route does not impact any existing or future planned recreational spaces.

#### **4.10 HISTORICAL AND ARCHEOLOGICAL SITES**

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This project will have no impact to historical or archeological sites.

#### **4.11 PUBLIC FACILITIES AND INFRASTRUCTURE**

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The purpose of WISE is to improve water supply efficiency for sustainable growth while minimizing costs. The DIA water distribution system is oversized to accommodate for fire flow demands at the airport. Because of this, the water is at a higher risk of aging within that distribution system that degrades water quality. This project will allow up to 6 MGD of the potentially aging potable water to be conveyed to other locations throughout the Denver Metropolitan Area, thus improving the water supply efficiency.

The increased construction traffic is anticipated to be negligible on the public roads. While there will be some road impacts, these will be minimized utilizing metal plates over trenches and minimizing lane closures. Where the alignment is parallel to 96<sup>th</sup> Ave, there will be shoulder closures while the construction team will work primarily outside of the roadway limits.

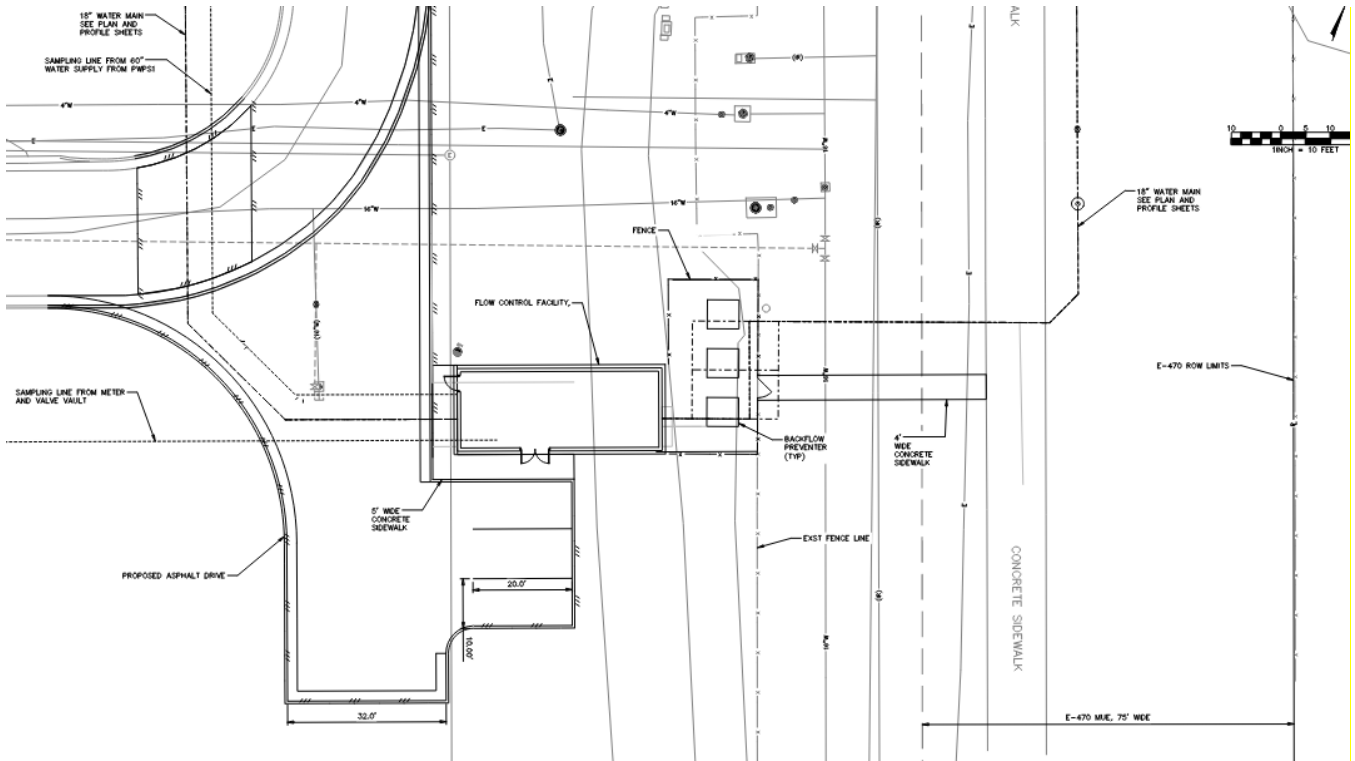
#### **4.12 STORMWATER COLLECTION SYSTEM CONSIDERATIONS**

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The proposed pipeline alignment crosses existing stormwater infrastructure within Commerce City limits. These preexisting stormwater culverts and pipelines will remain in place during construction and will not be impacted by the installation of this pipeline. The Contractor will be responsible for maintaining drainage pathways along existing ditches throughout construction.

On the PWPS2 site, there is stormwater infrastructure which consists of inlets, pipes, and detention pond. The site's drainage report was approved as part of the overall development plan in 2007. The Owner does not have record of this existing drainage report, but Tetra Tech completed a drainage analysis and drainage conformance letter for the site which is provided in Appendix D.

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**Figure 4-2:** Proposed Site Layout

Site	Area (ac)
Existing Total On-Site Area	14.30
Existing Total Imperviousness (acres)	2.32
Proposed Imperviousness (acres)	0.11
Proposed Total Imperviousness (acres)	2.43
100-year Existing Runoff (cfs)	32.15
100-year Proposed Runoff (cfs)	32.59

**Table 4-1:** Drainage and Runoff Summary

In summary, the proposed upgrades minimally impact the site and are not expected to negatively impact the stormwater infrastructure on site.

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## **5.0 COMMUNITY CONSIDERATIONS**

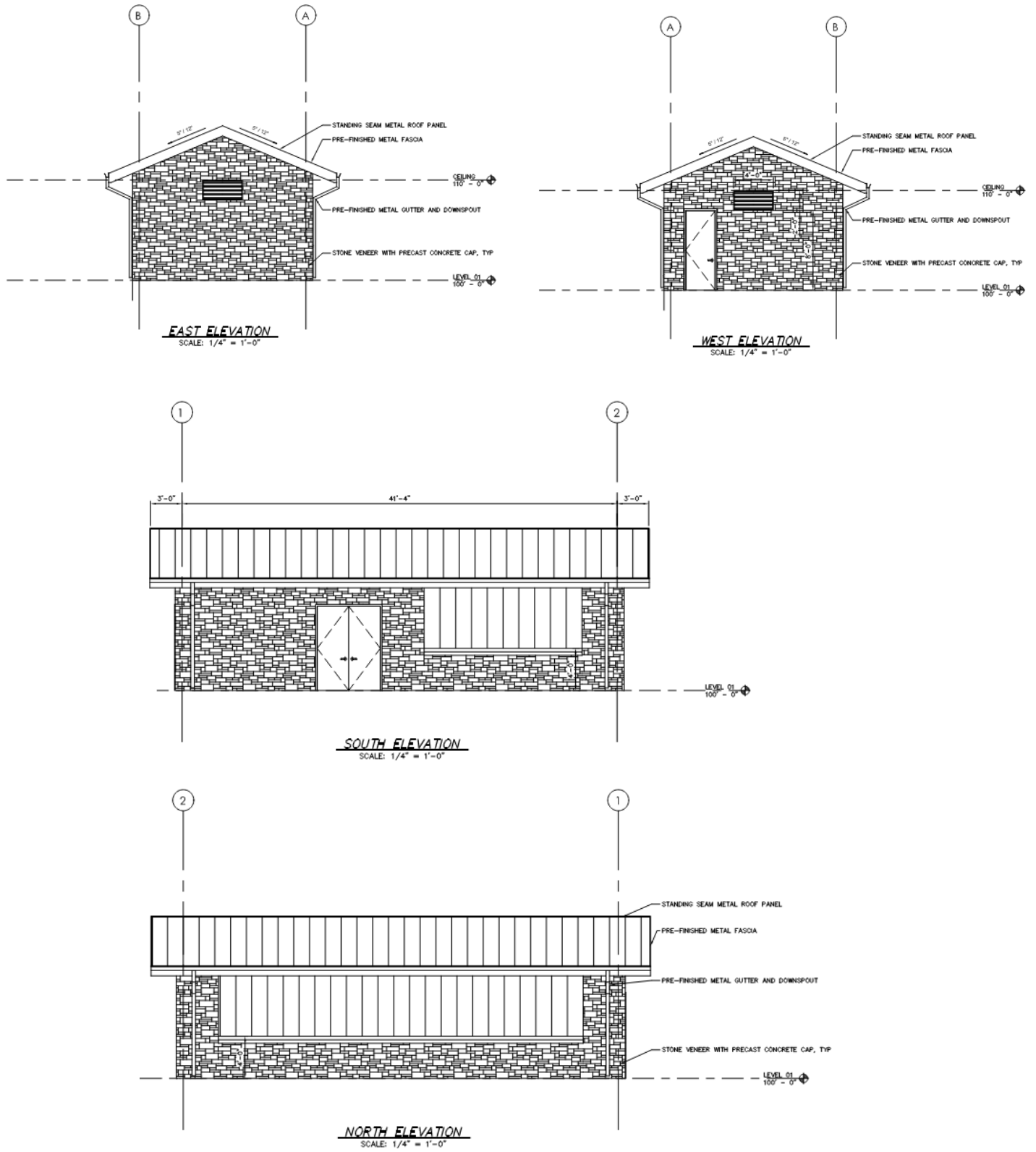
### **5.1 HARMONY AND COMPATIBILITY WITH SURROUNDING AREA**

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The PWPS2 site has one building that was architecturally designed to maintain the feel and harmony of the future developments. This design was approved by Commerce City through a Site Development Permit. This project is adding a new building, approximate size of 43' by 18', as well as three above-ground backflow preventers. The backflow preventers are necessary to prevent untreated raw water from entering the potable water stream being fed by the DIA supply connection.

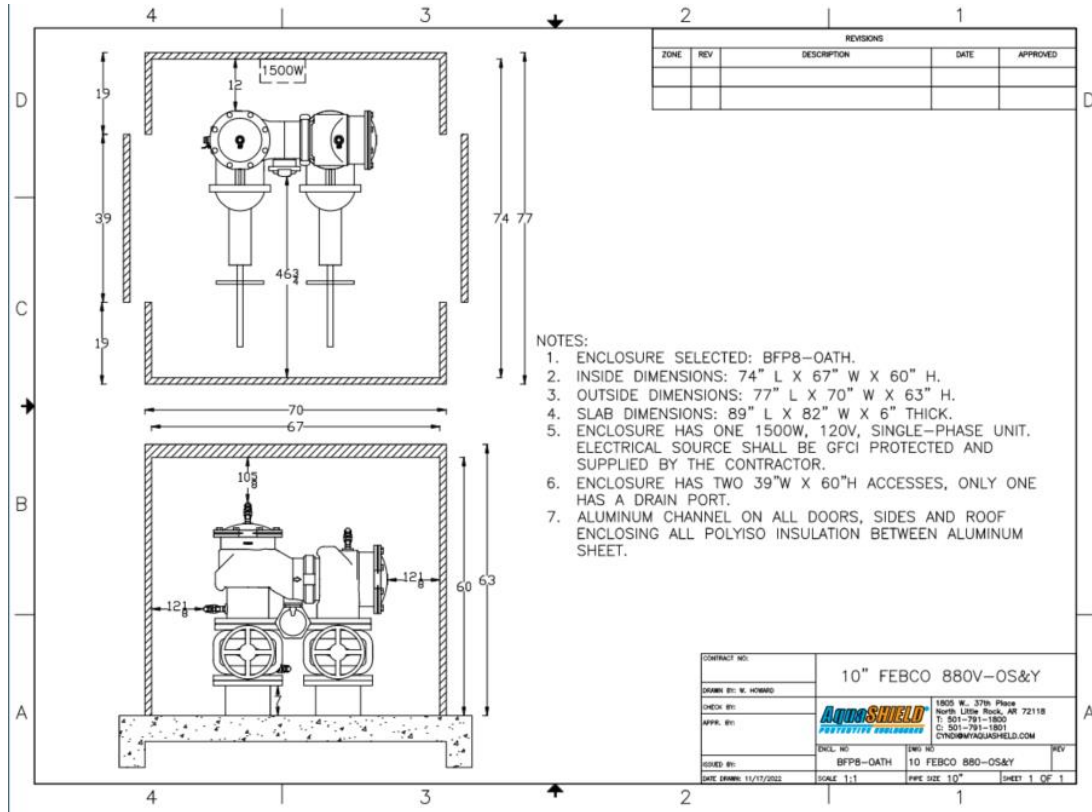
The new building will match the architectural design by using the same brick and stone veneer and metal paneling that was used on the other building at the site. By utilizing the same color and style veneer and paneling, the feel of the site will be maintained and compatibility with the surrounding area will be upheld. The building exterior elevations are provided in Figure 5-1. Veneer and panel samples can be provided at the request of Commerce City.

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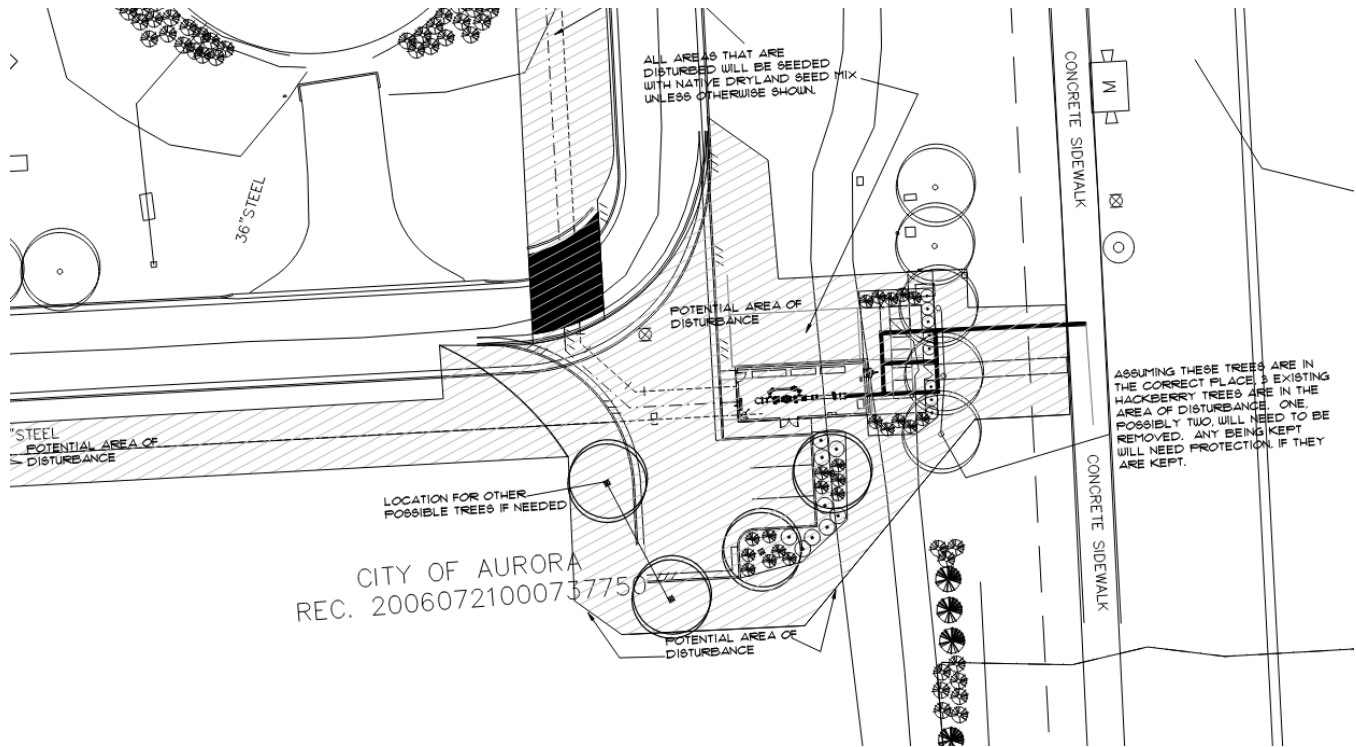


**Figure 5-1: Architectural Building Elevations**

The backflow preventers are above-ground but reside in AquaShield protective enclosures. There will be landscaping screening in accordance with Commerce City standards to block out the above-ground piping appurtenances. The AquaShield enclosures for the backflow preventers are provided in Figure 5-2. The landscaping plan showing the screening being provided around the enclosures is provided in Figure 5-3.



**Figure 5-2: Backflow Preventer Aquashield Enclosures**



**Figure 5-3:** Landscaping Screening Plan and Details

## 5.2 COMMUNITY NEED FOR THE PROPOSED PROJECT

Water scarcity and potential droughts will continue to affect development and quality of life in the Denver Metro Region. This project improves water efficiency throughout the region and will help deliver water supply to residents and businesses now and into the future. Improving water infrastructure for the benefit of the general public provides an environmental and economic benefit to the community.

## 5.3 EFFECTS ON ADJACENT PROPERTIES

There will be no long-term effects on adjacent properties. All construction activities will be constrained to the Right-of-way, Aurora owned property, and the E-470 highway. In addition, these adjacent properties are all undeveloped so there won't be any disturbances to residents or businesses on these properties.

## 5.4 EFFECTS ON PUBLIC IMPROVEMENTS AND CITY SERVICES

Public improvements and City services may be impacted by minor traffic associated with the installation of the water main. There will be an open cut installation under 96<sup>th</sup> Ave, however a full road closure is not expected. The project will be designed for shoulder closures for to allow for one lane of traffic to remain during construction.



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## 5.5 SITE CHARACTERISTICS

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The water main alignment will be buried underground and result in minimal visual or physical impacts. After the water main is installed the grades will be returned to preconstruction conditions. Existing trees are not expected to be impacted with the selected alignment outside of the PWPS2 site. Disturbed areas will be fully revegetated in accordance with project specifications and local requirements.

The above-ground building will match existing architecture of the PWPS2 site. The above-ground backflow preventers will be properly screened utilizing landscaping features and fencing.

## 5.6 LANDSCAPING AND SCREENING THAT ENSURE HARMONY WITH ADJACENT USES

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The PWPS2 site upgrades will require screening with landscaping features. These features were designed to provide harmony with the existing PWPS2 site and future adjacent neighborhoods. The proposed landscaping plan is provided in Figure 5-3 and in Appendix A.

## 5.7 VISUAL IMPACTS

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Visual impacts associated with the Project are limited to construction activities. The PWPS2 adjacent area and pipeline alignment is largely undeveloped, therefore visual impacts are expected to be minor. Visual impacts for the Project are temporary and may include:

- Construction equipment
- Construction fencing
- Silt fencing
- Erosion control inlet/outlet protection
- Materials stockpiling including but not limited to:
  - Piping
  - Precast structures
  - Valves, Meters, other appurtenances
  - Stone bedding
  - Fittings
- Trench excavation
- Tunneling pits
- HDD operations
- Excavated soil stockpiles
- Main installation, backfilling and compaction operations.

The above-ground flow control building and added landscaping screening will architecturally match the existing on-site buildings and vegetation. These are the only permanent changes associated with this Project.

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## 5.8 NOISE, DUST, VIBRATIONS, ODOR, AND OTHER NUISANCES

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During construction activities there will be minimal temporary nuisances, primarily consisting of construction noise and dust. Due to the nature of this Project, potable water infrastructure, odors are not anticipated during construction activities or related to the permanently installed infrastructure.

Dust control methods such as water spray down techniques will be employed when necessary. Due to the limited physical area necessary for construction, dust suppression techniques will easily prevent dust related issues.

There are two areas of pipeline trenchless installation, the first crossing beneath Highway E-470. This crossing will be completed by jack and bore methods. This trenchless installation is expected to take 6 to 8 weeks. The second trenchless HDD installation will be completed beneath Third Creek which is anticipated to take approximately 2 weeks to complete. There will be minor noise and vibration disruptions. The surrounding areas of the trenchless installation locations are largely undeveloped, it's not expected that this will directly impact the public.

## 6.0 STATEMENT OF OPERATIONS

Pipeline construction installation operations are summarized below. This effort will be largely dependent on the selected Contractor that is selected. In addition, there will be regular maintenance and operations associated with the pipeline and the flow control facility once they are completed.

### 6.1 HOURS AND DAYS OF OPERATIONS

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Construction of the WISE DIA Connection is scheduled to begin in May 2024 and be complete by the end of 2025. It's expected that there will be separate crews for the construction of the open cut pipeline, trenchless installations, and the flow control facility. An estimated construction schedule is specified in the Gantt chart provided in Figure 6-1.

### 6.2 NUMBER OF EMPLOYEES

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The number of employees actively constructing this project will vary. It's expected that two pipe crews will be utilized for the pipeline installation, averaging between 5 to 30 employees at any given time.

There will be regular maintenance activities once the system is operational. A two-man CCTV crew will do regular inspections every 10 years utilizing the access manholes along the pipeline alignment. There will also be regular maintenance activities at the flow control facility which will be monitored by Aurora Water remotely and the existing on-site personnel at the PWPS2 site. The original site plan assumed one employee for the pump station. There will be no additional employees required for the new facility on the PWPS2 site.

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## 6.3 NUMBER OF REQUIRED PARKING SPACES

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Most of the construction workers will be stationed at the PWPS2 facility for the flow control facility and the E-470 crossing. Half of the PWPS2 site is undeveloped and reserved for future expansion. This area, approximately 6 acres, can be utilized for staging/storage of materials and parking for the employees. The staging area is shown in Figure 6-1. Along the pipeline route, there will be access agreements with the Denver International Airport which will allow for intermittent parking and staging of materials along the route. This agreement will not require permanent or temporary easements.

There are three permanent parking spaces provided next to the new flow control facility for operation and maintenance purposes. There will be no additional trucks required for operation of the flow control facility.



**Figure 6-1:** Construction Staging Area

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## 6.4 AVERAGE DAILY PEAK TRIPS GENERATED

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While the pipeline is being constructed, there will be regular construction traffic. The estimated number of trips are:

- Pickup Trucks: 100 per week
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- Earth hauling dump trucks: 33 per week
  - Water trucks: 20 per week
  - Stone bedding dump trucks: 140 per week
  - Miscellaneous construction equipment: 5 per week

These trips will be localized based on the construction progress along the alignment. During normal operations of the system, there will be inspection crews at least once per year.

The flow control facility will not require any additional employees or special trips once construction is complete.

## 6.5 EQUIPMENT AND PROCESSES

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The anticipated construction activities and associated equipment are summarized below:

- Clearing/Grubbing/Demolition: Bulldozer, loader, jackhammers, backhoe
- General Purpose: Concrete mixer, concrete pump, forklift, generator, pickup truck, equipment service truck
- Open Cut Installation:
  - Excavation: Excavator, backhoe, hauling dump truck
  - Bedding Installation, subgrade preparation: Vibratory compactor, roller, excavator, backhoe
  - Pipe Installation and Backfill: Excavator, bulldozer, loader, hauling dump truck, roller
- Trenchless Installation:
  - Jack and Bore: Boring machine
  - HDD: Boring machine
- Flow Control Facility: Excavator, crane, backhoe, hauling dump truck, roller, bulldozer, grader
- Restoration:
  - Grading: Bulldozer, grader
  - Seeding: Drill seeder, mulcher
  - Paving: Paver, roller

Once construction is complete, there will be no additional equipment at the PWPS2 site for the Flow Control Facility.

## 6.6 MAINTENANCE

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Denver Water will maintain all facilities east of the flow control facility outside of the PWPS2 site while Aurora Water will maintain everything within the flow control facility and within the PWPS2 site. The general maintenance plan is as follows:

- Isolation valves will be checked every 4 years to evaluate condition and exercise the valves.
  - Backflow preventers will be checked annually for condition and function.
  - Air Release Valves will be checked every 5 years for condition and operation.
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- Blowoff Valves have no regular maintenance schedule and are used only when the line needs to be drained.

## **6.7 HAZARDOUS MATERIALS**

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The Contractor will be responsible for developing a Health and Safety Plan and a Hazardous Materials Management Plan in accordance with CPDHE Environmental Spill Reporting. Soil sampling was completed on the alignment and no hazardous materials were discovered.

## **6.8 REGULATORY AGENCIES**

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This 6-mile pipeline falls under the jurisdiction of ten permitting agencies. Below is a list of the jurisdictions and their requirements.

### **6.8.1 Denver Water Requirements**

The pipeline shall conform to Denver Water Capital Improvement Construction Standards and Engineering Standards unless noted otherwise. In addition, design drawings conform to Denver Water CAD standards. The construction contract is managed and executed by Denver Water.

### **6.8.2 Aurora Water Requirements**

The flow control facility will conform to Aurora Water standards. Electrical and I&C work will conform to Aurora Water Electrical and I&C DEGs with the exception of the new Denver Water panel being installed in the facility. For the pipeline on Aurora Water property, a license agreement has been arranged between Aurora and Denver Water.

### **6.8.3 Denver County Requirements**

The pipeline has a short segment that is within Denver County along E 112<sup>th</sup> Avenue. Because this segment is on DEN Property, Denver County relinquished jurisdictional domain to DEN. DEN permitting requirements are presented below.

### **6.8.4 Adams County Requirements**

The majority of the pipeline alignment resides within Adams County jurisdiction, including the tunneled Third Creek crossing. The Third Creek Crossing is outside of the floodplain so a floodplain development permit is not required. Remaining permitting requirements were deemed unnecessary and jurisdictional domain was relinquished to DEN.

### **6.8.5 Commerce City Requirements**

The following known permits have been obtained or are in the final certification process for this work within Commerce City:

- 1041 Permit (CUP23-0002)
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- Site Development Plan (D23-0006)
  - Grading Permit (GRD23-00022)
  - Right of Way Permit (along 96<sup>th</sup> Avenue)
  - Commercial New Construction (CNEW23-00028)

The submittal of this document will satisfy requirements of the 1041 Permit. The Site Development Plan was originally approved during construction of the PWPS2 site. Required documentation for each permit has been provided.

### **6.8.6 DEN Requirements**

DEN (DIA property) will require a license agreement for the pipeline to be installed on their property. DEN is also concerned about contaminated soils on their property. During the geotechnical investigation it was determined that the soils were not contaminated and could be used on site. DEN also requires a Stormwater Management Plan which has been submitted and is pending certification by the selected Contractor.

### **6.8.7 E-470 Requirements**

The trenchless crossing at E-470 will conform to the E-470 Public Highway Authority Permit Manual. Coordination with the Highway Authority is ongoing and nearing completion.

### **6.8.8 USACE Requirements**

The current design for an HDD installation should have no impact on the Third Creek. Therefore, only a notification will be provided to the U.S. Army Corps of Engineers (USACE). If there are any impacts to Third Creek and the wetlands a Pre-Construction Notification (PCN) in conformance with Nationwide Permit 58 – Utility Line Activities for Water and Other Substances will be required.

### **6.8.9 CDPHE Requirements**

CDPHE requires a dewatering permit for anticipated groundwater discharges associated with the Third Creek Crossing. The selected Contractor is responsible for finalizing and submitting this permit. A Construction Stormwater Permit was obtained from CDPHE for the purposes of Project construction (Permit No. COR4000000, Certification No. COR421830).

### **6.8.10 FAA Requirements**

Project construction requires the submittal of a Notification of Proposed Construction or Alteration on Airport Part 77. The submittal is required for the following:

- Any construction or alteration exceeding 200 ft above ground level
  - Any construction or alteration
    - within 20,000 ft of a public use or military airport which exceeds a 100:1 surface from any point on the runway of each airport with at least one runway more than 3,200 ft.
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- within 10,000 ft of a public use or military airport which exceeds a 50:1 surface from any point on the runway of each airport with its longest runway no more than 3,200 ft.
  - within 5,000 ft of a public use heliport which exceeds a 25:1 surface
  - Any highway, railroad or other traverse way whose prescribed adjusted height would exceed that above noted standards
  - When requested by the FAA
  - Any construction or alteration located on a public use airport or heliport regardless of height or location

The proposed project alignment will be located within 2,700 feet of an existing runway at DIA. The submittal has been completed and approved.

## **6.9 SEVERED MINERAL RIGHTS**

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There are no property acquisitions as part of this construction. The PWPS2 site is owned and operated by the City of Aurora and the new pipeline will be installed in public right-of-way or properties with obtained access agreements. Because of this, the examination of mineral rights is not required.

## **6.10 DEVELOPMENT PLAN**

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There is an existing development plan for the PWPS2 site that was approved on June 15, 2007. The Owner does not have official record of the previously approved development plan approved by Commerce City. If Commerce City has record of this development plan, please provide this in your response letter. The proposed improvements for this project will be incorporated into this site plan for the City's records.

## **7.0 CONCLUSION**

This 1041 Permit is being submitted to convey the project's conformance to the City's short term and long term goals. Overall, this project is required to improve efficiency of the water supply system to the Denver Metropolitan Area. With improved efficiency, an increased water supply can be delivered to residents around Denver Metro Area including Commerce City, while also keeping rates as low as possible. This project will improve the lives of all customers and residents in the short-term and long-term while also maintaining the City's goals of maintaining harmony with the community.

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<b>To:</b>	Dalton Guerra, City Planner City of Commerce City
<b>From:</b>	Tetra Tech – Dan Phipps, PE Denver Water – Jessica Barbier, Mike Davies Aurora Water – Dean Bedford South Metro Water Supply Authority – Chris Muller
<b>Date:</b>	February 26, 2024
<b>Subject:</b>	City of Commerce City - 1041 Permit Narrative Addendum (CUP23-0002) Referral Agency Comment Responses WISE Denver International Airport (DIA) Connection

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The City of Commerce City staff has requested references to pertinent sections of the Municipal Code to be addressed within the 1041 Permit Narrative submitted via Commerce City eTrackit on February 19, 2024 for the Water Infrastructure and Supply Efficiency (WISE) Denver International Airport (DIA) Connection project. Provided below is a summary of those requirements and the summary of the sections of the 1041 Permit Narrative that was submitted for reference.

#### **Sec. 22-30. - Standards for approval of a permit application**

(b) Approval criteria. The city council shall approve an application that meets the requirements of subsection (a)(2) above and, in addition, meets all of the following criteria:

(1) The applicant has obtained or will obtain all property rights, permits and approvals necessary for the project, including surface, mineral and water rights. The city council may, in its discretion, defer making a final decision on an application until all necessary property rights, permits and approvals for the project are obtained.

**The proposed pipeline is located in City of Aurora Property, E-470 Easements, and public Right-of-Way (ROW). This project is a joint venture between Denver Water and Aurora Water which has permitted access to their property through a license agreement. The rest of the project is included in Public ROW. Property rights are provided in Appendix C of the 1041 Permit Narrative.**

(2) The applicant has the necessary expertise and financial capability to develop and operate the project consistent with all requirements and conditions.

**Denver Water has been a water service provider in the state of Colorado for over 100 years and have executed thousands of projects in the greater Denver Area. Tetra Tech has been working as an engineering firm since 1966 and has been ranked number 1 in water by the Engineering News Record for the last 20 years. Further information on fiscal stability is provided in Section 4.4 of the 1041 Permit Narrative.**

(3) Adequate water supplies are available for the project if applicable.

**Denver Water has the capacity to convey water to the Prairie Waters Pump Station at the maximum established rate of 5.9 MGD. Denver Water owns the water rights for delivery of this water to its WISE partners.**

(4) The project will not cause unreasonable loss of significant agricultural lands as identified in the Comprehensive Plan or on or near the site.

**Due to the project's location within existing easements and public ROW, there will not be a significant loss of agricultural lands.**



(5) The project will not significantly degrade or pose a significant hazard to any aspect of the environment, including environmental resources and open space areas as identified in the Comprehensive Plan, and other features or elements that are deemed to be significant components of the natural environment worthy of preservation. For purposes of this section, the following aspects of the environment shall be considered:

a. The project will not significantly deteriorate air quality.

**The project will not provide a new, permanent source of air pollution. It is a water conveyance project without motors, generators, or other polluting elements. Dust control methods for project construction are provided in Section 5.8 of the 1041 Permit Narrative.**

b. The project will not significantly degrade visual quality.

**The majority of this project will be installed underground as it is a pipeline project. There will be a new building on the Aurora Prairie Waters Pump Station No. 2 site that will match the existing architectural design of the site. New landscaping will be provided to screen the building from E-470. Additional discussion of visual Impacts provided in Section 5.1, 5.5, 5.6, 5.7, and appendix A of the 1041 Permit Narrative.**

c. The project will not significantly degrade surface water quality. In determining impacts to surface water quality, the city council shall consider the following:

1. Changes to existing water quality, including patterns of water circulation, temperature, conditions of the substrate, extent and persistence of suspended particulates and clarity, odor, color or taste of water;

**This project improves water quality by decreasing water age near the Denver International Airport and reducing the need for flushing at stagnant locations.**

2. Increases in point and nonpoint source pollution loads;

**This project does not include any new point source pollution. There is limited impervious area added to the site. Non-point source pollution will be detained at the existing detention pond on site.**

3. Increase in erosion;

**This project will not result in increased erosion. A Stormwater Management Plan (SWMP) has been submitted for review to Commerce City that documents Best Management Practices for preventing erosion during construction. BMPs will include silt fence, vehicle tracking control, inlet protection, concrete washout areas, mulching, and seeding.**

4. Increases in sediment loading to water bodies;

**This project will not result in increased erosion. A Stormwater Management Plan (SWMP) has been submitted for review to Commerce City that documents Best Management Practices for preventing erosion during construction. BMPs will include silt fence, vehicle tracking control, inlet protection, concrete washout areas, mulching, and seeding.**

5. Changes in stream channel or shoreline stability;

**There are no streams impacted by this project.**

6. Changes in stormwater runoff flows;

**Stormwater runoff flows will be detained in the existing detention pond as detailed in the SWMP.**

7. Changes in trophic status or in eutrophication rates in lakes and reservoirs;

**This Project's construction or permanency will not alter the trophic state of surface waters or functioning capacity of surface water retention due to it not residing in the vicinity of any surface waters.**

8. Changes in the capacity or functioning of streams, lakes or reservoirs;

**There will be no impact to streams, lakes, or reservoirs. Stormwater runoff flows will be detained in the existing detention pond as detailed in the SWMP.**

9. Changes in dilution rates of mine waste, agricultural runoff and other unregulated sources of pollutants.

**There will be no impact to dilution rates as this project does not involve mines, agricultural or other unregulated pollutants.**

d. The project will not significantly degrade groundwater quality

**This project is a conveyance project that will not affect groundwater quality.**

e. The project will not significantly degrade the quality of wetlands and riparian areas.

**There are no wetlands and riparian areas affected by this project.**

f. The project will not significantly degrade the quality of terrestrial and aquatic animal life. In determining impacts to terrestrial and aquatic animal life, the city council shall consider the following:

1. Changes to habitat and critical habitat, including calving grounds, mating grounds, nesting grounds, summer or winter range, migration routes or any other habitat features necessary for the protection and propagation of any terrestrial animals;

**The project will not impact critical habitat. Prior to the project, surveys were performed for protected species and passive relocation methods will be used if any Burrowing Owls are discovered during construction. Further discussion is provided in Section 1.3 of the 1041 Permit Narrative and the survey results are provided in Appendix B of the 1041 Permit Narrative.**

2. Changes to habitat and critical habitat, including stream bed and banks, spawning grounds, riffle and side pool areas, flushing flows, nutrient accumulation and cycling, water temperature, depth and circulation, stratification and any other conditions necessary for the protection and propagation of aquatic species; and

**This project does not impact in water ways or aquatic life or cross any water ways. Further discussion is provided in Section 1.3 of the 1041 Permit Narrative.**

3. Changes to the aquatic and terrestrial food webs.

**This project does not impact food webs of aquatic or terrestrial species as it does not create any permanent impact to animals in the area. Further discussion is provided in Section 1.3 of the 1041 Permit Narrative.**

g. The project will not significantly degrade soils and geologic conditions. In determining impacts on soils and geologic conditions, the city council shall consider the following:

1. Changes to the topography, natural drainage patterns, soil morphology and productivity, soil erosion potential and flood hazard areas;

**This project does not change the topography of the area. Grades will be restored to existing conditions.**

2. Changes to stream sedimentation, geomorphology and channel stability;

**This project will restore all areas to vegetated cover to prevent sediment from entering streams. It does not cross any streams or change channel stability.**

3. Changes to lake and reservoir bank stability and sedimentation, and safety of existing reservoirs.

**There are no water bodies that are near to or affected by this project.**

(6) The project will not have a significant adverse effect on the quality or quantity of recreational opportunities and experience.

**This project is located on Aurora property or within easements or public ROW. There are no recreational areas that are impacted by this project. Further discussion is provided in Section 4.9 of the 1041 Permit Narrative.**

(7) The project will not cause unreasonable loss or impairment of significant cultural resources, including but not necessarily limited to historic resources or sites and archaeological artifacts or sites.

**This project will have no impact to historical or archeological sites. No sites were discovered during field visits.**

(8) The project or its associated transmission, collector or distribution system will not create blight or cause other nuisance factors such as excessive noise or obnoxious odors.

**The project will be installed underground and will not create nuisance factors once completed. Further discussion of control of nuisance factors is provided in Section 5.8 of the 1041 Permit Narrative.**

(9) The project will not be subject to significant risk from floods, fires, earthquakes or other disasters or natural hazards.

**This project is not located in a flood zone nor does it promote fire hazards. This pipeline is an interruptible source of water which may be shut down during a natural disaster if needed.**

(10) The project or its associated transmission, collector or distribution system will not create an undue financial burden on existing or future residents of the city.

**This project will not cause any payment increase to City residents. It includes and extension for future South Adams County Water and Sanitation District (SACWSD) connections. This is a shared cost between Denver Water and SACWSD which results in a net savings for SACWSD and City residents. Further discussion is provided in Section 4.3 and 4.4 of the 1041 Permit Narrative.**

(11) The project will not have a significant adverse effect on the capability of local government to provide services or exceed the capacity of service delivery systems.

**This project does not negatively affect local governments services and provides additional capacity of water supply through the use of shared resources.**

(12) The planning, design and operation of the project will reflect appropriate principles of resource conservation, energy efficiency and recycling or reuse.

**The WISE partnership is founded on the goals of increased efficiency for water resources. This project promotes sharing of resources and does not require increases to energy use once installed. Further discussion of impacts described in Section 5 of the 1041 Permit Narrative.**

(13) Construction of the project will be in compliance with all city standards and regulations governing noise, dust and traffic delays.

**The project has been designed in coordination with City staff. A ROW permit will be secured by the Contractor prior to executing work and the Contractor will follow city standards and regulations for construction. Further discussion of traffic impacts are provided in Section 4.7 of the 1041 Permit Narrative. Discussion of transportation impacts and safety and wellness are provided in Section 4.8 and 5.8 respectively.**

(14) As to those applications for which the manager has required information on the environmental impacts and costs of alternatives under subsection [22-24\(c\)\(9\)](#) above, the project represents the least damaging alternative of reasonable cost among the alternatives analyzed.

**Alternative alignments through Commerce City were not possible due to the PUD zoning designation of the property on the southeast corner of 96th Avenue and E-470 which prohibits installation of public utilities. Following the right-of-way of 96th avenue and crossing E-470 would have the least impact to property owners in Commerce City.**

(15) The project is in accordance with the Comprehensive Plan, zoning and any other applicable land use designations and requirements and any applicable intergovernmental agreement affecting land use and development.

**The project is in compliance with land use requirements for the proposed area of installation. Detailed discussion of compliance with the City's comprehensive plan is provided in Section 4.0 of the 1041 Permit Narrative.**

(16) The project represents the complete, reasonably foreseeable development for the subject property as required above, except that the city council may approve development constituting less than the complete project, provided that the applicant clearly demonstrates that a lesser development constitutes a discrete phase of the complete project as supported by the applicable master planning document required herein, which can be logically and adequately reviewed as a separate project under the applicable criteria of these regulations.

**This project is not being constructed for a proposed development. This project is a water infrastructure project which will deliver water to customers in Commerce City and the Denver Metro Area.**

#### **Sec. 22-66. - Additional permit-approval criteria applicable to major domestic water treatment systems and major extensions of such systems**

(a) The project shall be reasonably necessary to meet projected community development and population demands in the areas to be served by the project, or to comply with regulatory or technological requirements. The determination of whether the project is reasonably necessary may include, but is not limited to, the following considerations:

- (1) Relationship to reasonable growth projections and local land use plans.

**The project is necessary to share water resources in the Denver Metropolitan area amongst the WISE partners. It also provides an extension of the SACWSD service area to the east side of E-470. Refer to Section 4.5 Housing and Neighborhoods and Section 5.2 Community Need for the Proposed Project in the 1041 Permit Narrative for further discussion.**

- (2) Relationship to other water providers' service areas.

**The project does not encroach on any water provider service areas. It extends the SACWSD service area as mentioned above. Refer to Section 1.2 Project Background and Summary of the 1041 Permit Narrative for further details.**

- (3) Whether the project is not in compliance with regulatory or technological requirements or will not be in compliance in the near future.

**The project is in compliance with regulatory requirements for water infrastructure projects of this nature. Refer to Section 1.1 Land Use Planning Requirements and Section 6.8 Regulatory Agencies of the 1041 Permit Narrative for further details.**

(b) To the extent feasible, water treatment facilities shall be consolidated with existing facilities within the area. The determination of whether consolidation is feasible shall include, but is not limited to, the following considerations:

- (1) Whether there is an opportunity for consolidation.
- (2) The environmental, financial and social feasibility of consolidation.

**The project includes consolidation of a trenchless crossing for both Denver Water and SACWSD. Further discussion is provided in Section 1.0 Introduction and Section 2.1 Pipeline Alignment of the 1041 Permit Narrative.**

(c) New domestic water treatment systems shall be constructed in areas that will result in the proper use of existing treatment plants and the orderly development of domestic water and sewage treatment systems of adjacent communities. The determination shall include, but is not limited to, the following considerations:

- (1) Relationship to reasonable growth projections and local land use plans.

**This project provides infrastructure that reduces the need for construction of new plants in the Denver Metro Area by sharing water resources across different municipalities. Refer to Section 4.5 Housing and Neighborhoods and Section 5.2 Community Need for the Proposed Project of the 1041 Permit Narrative for further details.**

- (2) Proximity to other water and wastewater providers' service areas

**The project does not encroach on any water provider service areas. It extends the SACWSD service area as mentioned above. Refer to Section 1.0 Introduction and Section 2.1 Pipeline Alignment of the 1041 Permit Narrative for further details.**

(d) The project shall be permitted in those areas in which the anticipated growth and development that may occur as a result of such extension can be accommodated within the financial and environmental capacity of the area to sustain such growth and development. The determination shall include but is not limited to the following considerations:

- (1) Relationship of the project to approved land use plans for the area.

**This project does not include any development or residences. Refer to Section 2.1 Pipeline Alignment and Section 4.2 Land Use Growth of the 1041 Permit Narrative for further details.**

- (2) The environmental, financial and social impacts related to such development.

**This project does not include any development or residences. Refer to Section 1.3 Environmental Assessments, Section 4.0 Compliance with Commerce City Comprehensive Plan, and Section 5.0 Community Considerations of the 1041 Permit Narrative.**