Exh. PCD-1T
Docket UG-21____
Witness: Patrick C. Darras

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, Complainant, v. CASCADE NATURAL GAS CORPORATION, Respondent.	DOCKET UG-21____

CASCADE NATURAL GAS CORPORATION

DIRECT TESTIMONY OF PATRICK C. DARRAS

September 30, 2021

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1. Exh. PCD-2 Summary of 2020 Capital Projects

I. INTRODUCTION

Q. Please state your name, business address, and position.

A. My name is Patrick C. Darras and my business address is 400 North Fourth Street, Bismarck, North Dakota 58501. I am the Vice President – Engineering & Operations Services for Cascade Natural Gas Corporation ("Cascade" or "Company"), a wholly-owned subsidiary company of MDU Resources Group, Inc. ("MDU Resources"). I am also the Vice President – Engineering & Operations Services for Intermountain Gas Company ("Intermountain"), Montana-Dakota Utilities Co. ("Montana-Dakota"), and Great Plains Natural Gas Co. ("Great Plains"), subsidiaries of MDU Resources.

Q. Please describe your duties and responsibilities with Cascade.

A. I have executive responsibility for the development, coordination, and implementation of Company strategies and policies related to engineering and operations, including design, construction, compliance, and pipeline integrity and safety.

Q. Please outline your educational and professional background.

A. I am a graduate of North Dakota State University with a Bachelor of Science Degree in Construction Engineering. I also hold a Master of Business Administration and a Master's Degree in Management, both from the University of Mary. In June 2014 I attended the Utility Executive Course at the University of Idaho.

I began my career in 2002 as a gas engineer with Montana-Dakota in Bismarck, North Dakota. I held that position for four years, primarily working with the construction and service group in day to day operations. In 2006, I was promoted to the role of Region Gas Superintendent in which I was responsible for the overall gas engineering,

construction, and service of the Dakota Heartland Region of Montana-Dakota. I worked in that capacity for two years and was then promoted to Region Director for Montana-Dakota's Dakota Heartland Region and Great Plains. In this role, I was responsible for oversight of all gas and electric operations for the Region. In January 2015, I accepted the promotion to Vice President of Operations for Montana-Dakota and Great Plains. My responsibilities in this role included gas and electric distribution operations and engineering across the five states of North Dakota, South Dakota, Montana, Wyoming, and Minnesota. In June 2018, I accepted my current role of Vice President – Engineering and Operations Services.

Prior to joining Montana-Dakota, I worked for a local industrial contractor specializing in refinery and power plant maintenance along with turn-key construction of industrial facilities such as refineries and food processing plants. I spent seven years with this group in various capacities in engineering, construction, and project management.

II. SCOPE AND SUMMARY OF TESTIMONY

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to:

(1) provide an overview of the Company's project selection and budgeting process;

(2) provide an overview of the Company's major capital projects that have been completed since the test year in the last rate case, which include:

- Wallula Gate Station and 12" High Pressure ("HP") Reinforcement,

- Othello Gate Station Reinforcement and Northwest Pipeline ("NWP") Lateral Upgrade project,
- Walla Walla Gate Station and 6" HP Line Reinforcement,
- Arlington Gate Station and 6" HP Reinforcement project,
- Bellingham 8" HP Relocation project,
- Moses Lake 4" Polyethylene (PE[1]) Reinforcement project,
- Walla Walla 6" Steel and PE Distribution Reinforcement project,
- Bremerton Regulator Station Replacement project,
- Kennewick and Richland Odorizer Replacement projects, and
- Bremerton District Office Remodel.

(3) describe the Company's blanket funding projects; and

(4) provide an update to the Company's Customer Care and Billing System Upgrade.

As I explain in detail in my testimony, the Company has carefully evaluated its system needs and potential alternatives and selected the proposed capital projects that will benefit the system and its customers.

Q. Are you sponsoring any exhibits in this proceeding?

A. Yes, I sponsor the following exhibit:

Exh. PCD-2 Summary of 2020 Capital Projects

[1] PE is polyethylene (plastic) pipe only used for distribution pressure, operating less than 60 psig.

III. OVERVIEW OF PROJECT SELECTION AND BUDGETING PROCESS

Q. Please describe how the Company selects and budgets for capital projects.

A. The Company prioritizes capital projects that improve safety and reliability. The bulk of Cascade's major capital projects are either pipeline replacement projects that have been identified for safety reasons and to reduce risk on Cascade's system, or system reinforcements or system expansions that are needed to ensure system reliability and to accommodate growth on the Company's system. A reinforcement is an upgrade to existing infrastructure or a new system addition, which increases system capacity, reliability, and safety. An expansion is a new system addition to accommodate an increase in demand. Collectively, reinforcements and expansions are known as distribution system enhancements. Distribution system enhancements do not reduce demand, nor do they create additional supply. Instead, enhancements can increase the overall capacity of a distribution pipeline system while utilizing existing gate station supply points. The two broad categories of distribution enhancement solutions are pipelines and regulators.

Q. How does the Company identify safety-related projects?

A. The Company uses the Distribution Integrity Management Program ("DIMP") and the expertise of its own engineers and district managers to identify areas of risk on its system and to develop the safety projects required to remediate risk. The DIMP informs Cascade's understanding of the system and its material characteristics and is used to identify, assess, and prioritize integrity risks to Company-owned and operated infrastructure. The Company reviews and analyzes the DIMP risk model outputs after

each model run to identify areas of highest risk and those areas where risk increased from the last model run.

Additionally, because the DIMP model does not perfectly capture all risk factors, the Company also considers input from its system engineers, district managers, and other subject matter experts ("SMEs") who have intimate knowledge of specific portions of Cascade's system to identify other areas of potential concern.

The Company then considers and analyzes existing and proposed measures to address identified threats to Cascade's pipeline system. The prioritization and selection of appropriate remediation actions depends on (i) the type of threat being addressed, (ii) whether the threat is current or potential, and (iii) the viability of the remedial action in managing the relevant risk factors.

Q. What types of projects are typically performed to address safety-related concerns?

A. Pipeline replacement is typically the most viable option to remediate risks associated with corrosion, natural forces, material, weld, joint, and/or equipment. If Cascade determines that replacement is an appropriate action to reduce the risk, the Company establishes a replacement project.

Q. How does the Company prioritize and select safety-related projects?

A. Once pipe segments requiring replacement have been identified via the DIMP, the Company plans and prioritizes specific projects within these segments based on risk. This process ensures that higher risk threats are mitigated in a timely manner.

Q. Please provide an overview of Cascade's identification and selection process for distribution enhancement projects.

A. Three primary inputs contribute to the Company's identification and selection of distribution enhancement projects. First, Cascade assesses new development in the district, which typically increases capacity needs. The engineering department regularly works closely with energy services representatives and district management to ensure the system is safe and reliable. As towns develop and add new homes and businesses, the need for pipeline expansions and reinforcements increases. Indeed, historically, system expansion projects have been driven by new city developments or new housing plats. Before expansions and installation can be constructed to serve these new customers, the Company performs engineering analysis using system modeling software, Synergi[2], to represent cold weather scenarios, and to predict the necessary capacity of the system. As new groups of customers seek natural gas service, the Synergi models provide feedback on how best to serve them reliably.

Second, Cascade analyzes gate capacity and forecasts constraints. Over time, each gate station will take on more and more demand, and it is Cascade's goal to stay ahead of potential reliability issues by predicting and identifying constraints on its system. The Company's Integrated Resource Plan ("IRP") growth data, along with design day modeling in Synergi, allows Cascade to forecast necessary gate upgrades. Supervisory

[2] Synergi® is used in conjunction with the GasWorks models that were built years ago and have been upgraded as needed. Synergi® is more advanced than GasWorks and is much more user-friendly. Synergi® is also the modeling software of choice for many other local distribution companies (LDCs).

Control and Data Acquisition ("SCADA") technology utilized by Cascade allows verification of models with real time and historic gate flow and pressure data.

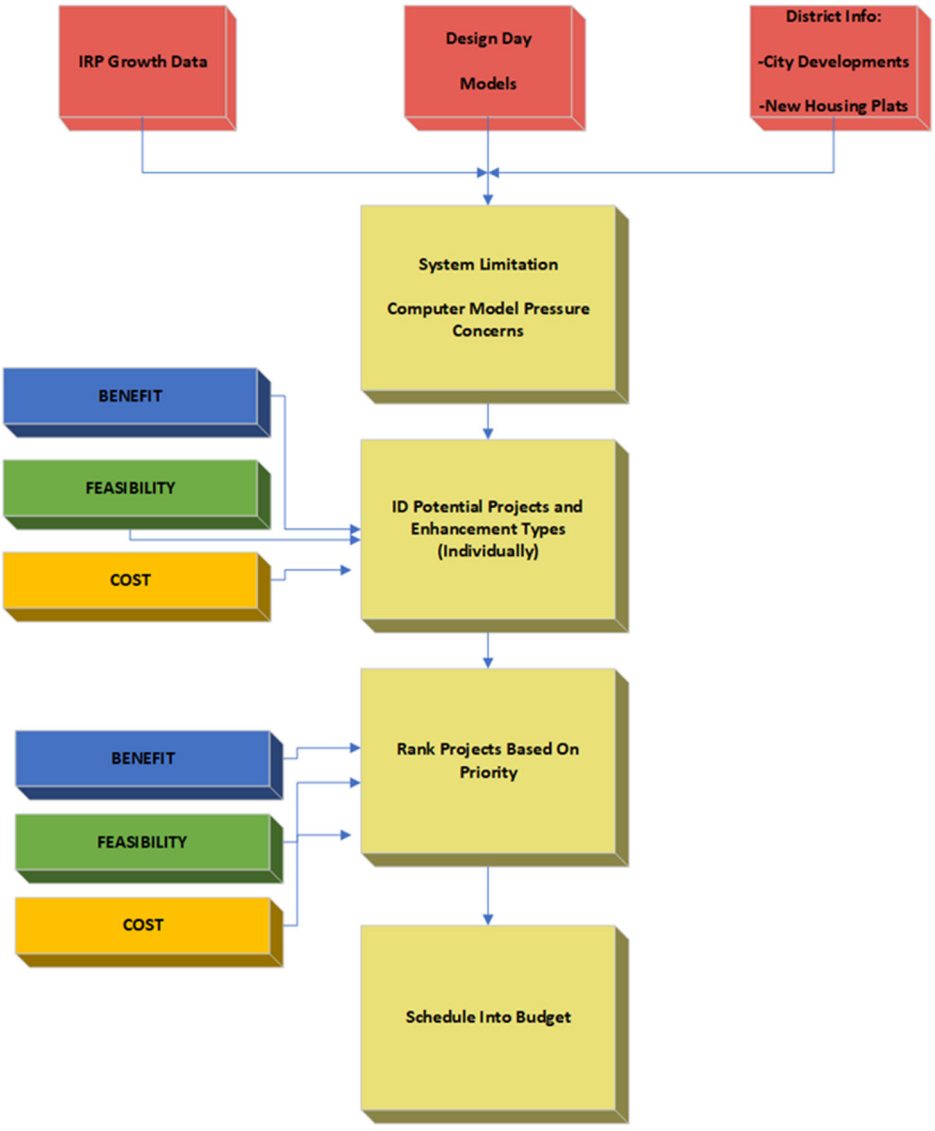
Third, the Company performs demand studies, modeling multiple demand forecasting scenarios to identify constraints and the corresponding optimum combinations of pipe-modification and pressure-modification solutions to maintain adequate pressures throughout the network. After developing a working demand study, the Company analyzes every system at design day conditions to identify areas where potential outages may occur. These constraint areas are then risk-ranked against each other to ensure the highest risk areas are corrected first and that others are properly addressed. Within a given area of constraint, projects/reinforcements are selected using the following criteria:

- The shortest segment(s) of pipe that improves the deficient part of the distribution system.
- The segment of pipe with the most favorable construction conditions, such as ease of access or rights or traffic issues, and minimal to no impacts to water, railroad, major highway crossings, etc.
- The segment of pipe that minimizes environmental concerns, including minimal to no impacts to wetlands, and minimizes impacts to local communities and neighborhoods.
- The segment of pipe that provides opportunity to add additional customers.
- Total construction costs including restoration.

Once a project/reinforcement is identified, the design engineer or energy services representative begins a more thorough investigation by surveying the route and filing for permits. This process may uncover additional impacts such as moratoriums on road

excavation, underground hazards, discontent among landowners, etc., resulting in another iteration of review of the above project/reinforcement selection criteria. Figure 1, below, provides a schematic representation of the distribution project process flow.

Figure 1. Distribution Planning Project Process Flowchart



Q. Does the Company also consider demand side management alternatives?

A. Yes. The Company also reviews the impacts of proposed conservation resources on anticipated distribution constraints. Although Cascade provides utility-sponsored conservation programs throughout its Washington service territory, there may be instances where a more targeted approach could reduce or delay the estimated need for reinforcement of a specific area. While Cascade attempts to influence these decisions through its conservation programs, the consumer is still the ultimate decisionmaker regarding the purchase and use of a conservation measure. Therefore, in the short term, Cascade does not anticipate that the peak day load reductions resulting from incremental conservation will be adequate to eliminate distribution system constraint areas. However, over the longer term, the Company plans to continue to explore opportunities for targeted conservation programs to provide a cumulative benefit that offsets potential constraint areas.

Q. How does the Company's IRP process inform project selection?

A. Cascade's IRP process helps identify priority projects to ensure adequate upstream pipeline and downstream distribution capacity to support the existing customer base and any growth. The IRP analyzes resource needs and evaluates projects based on factors such as safety, economics, and reliability to ensure full-path delivery of natural gas from basin to the customer meter. Analyzing resource needs in the IRP ensures adequate upstream capacity is available to the city gates, especially during a peak event. Securing adequate natural gas supply and ensuring sufficient pipeline transportation capacity to Cascade's city gates are necessary elements for providing gas to the customer.

The other essential element that informs project selection is ensuring the distribution system growth behind the city gates is not constrained. Distribution planning focuses on determining if adequate pressure will be available during a peak hour. Given this nuance, distribution planning addresses many of the same goals, objectives, risks, and solutions as resource planning. For example, important parts of the distribution planning process include forecasting local demand growth, determining potential distribution system constraints, analyzing possible solutions, and estimating costs for distribution system enhancements. Individual distribution system projects are then developed and evaluated by Engineering Services with input from local field personnel.

Q. Are all major projects identified in the Company's IRP?

A. No. Generally, the projects that are included in the IRP are distribution enhancement projects, which address system capacity and growth. Safety-related projects are not typically included in the IRP, as they are not driven by system capacity or growth, but rather are required by Federal and State Pipeline Safety regulations and to ensure Cascade is operating its gas system in the safest means possible.

Q. Please provide an overview of Cascade's process for budgeting, planning, and managing capital investments.

A. Capital additions and changes are planned through the annual budget process using PowerPlan ("PP"). The budget process begins with an individual (originator) creating specific funding projects in PP for all new projects to be included in the five-year capital budget. Originators are generally managers at the district level or engineering staff at the corporate level. Sources of information for capital projects include the IRP, DIMP, TIMP ("Transmission Integrity Management Program"), state and local government agencies,

and internal Cascade personnel. Funding projects are used to hold the capital budget estimates and will be linked to the capital work orders to be created when actual costs commence. A Fixed Asset Financial Analyst reviews the funding projects for proper setup. If the project as submitted is not considered a capital expenditure, it is rejected and sent back to the originator for revision, cancellation, or a move to Operations and Maintenance ("O&M") Expense. After the review has been completed, the Fixed Asset Financial Analyst will add appropriate overheads and approve the funding project.

Once all the funding projects have been updated with expenditures, various Company operating managers generate reports to show estimated expenditures and justification for each project. The managers review funding projects and ensure that any necessary changes are made to the estimate and that the project is supported. Reports are then generated by the budgeting personnel for review and approval by the Directors and Vice Presidents of the Utility Group. Any final budget changes are made, and the budgets are then presented to the Utility Group's President for review and approval. The final Utility Group budget is then presented to the MDU Resources Chief Executive Officer ("CEO") for review and approval. If the budget is approved by the MDU Resources CEO, the final review and approval occurs with the Board of Directors. At each stage of the review and approval process, a project (or projects) can be challenged for appropriateness and removed from the capital budget or moved to another year within the five-year budget. The addition or removal of projects can also be impacted by other factors such as available capital and/or borrowing capacity.

After final approval, an approved budget version is created in PP and locked for entry, and the funding projects and estimated amounts in the approved budget version are

copied back to the working budget version. Project managers are notified that the budget has been approved, and the funding projects are opened for work order creation. Projects are monitored and updated throughout the year as part of the review process and to ensure, as best as possible, that projects are completed on time and within the approved budget.

Q. Have there been any changes to these processes in the past few years?

A. Yes. Beginning in January 2019, the Company's parent, MDU Resources, moved toward a "one utility" model. As a result, the engineering department was reorganized, and more consistent tasks and processes were defined. Within this effort there is a new internal requirement to develop a more robust analysis for any project with a cost estimate over $1 million. As part of that analysis, the Company develops documentation supporting the project, including a substantial executive summary, Synergi model snapshots, alternatives considered, and timing and justification. The engineering managers and directors collaboratively review all projects and determine which are the most important from a risk standpoint and what the timing of the projects should be to best mitigate risks.

IV. MAJOR CAPITAL PROJECTS

Q. Does the Company propose to include any pro forma capital additions in this case?

A. No. In its 2020 general rate case, Docket UG-200568, Cascade proposed recovery for several pro forma plant additions, and the Commission approved certain investments and rejected others because they were not yet "used and useful". The major capital investments included in this proceeding were all in service during the test year. I will first

provide an overview of the major projects completed in 2020 that are included in this proceeding and then discuss each project in detail.

Q. Please provide a brief overview of the major capital projects that are included for recovery in this case.

A. The Company is requesting recovery for the following major capital projects that were completed in 2020:

1. **Wallula Gate Station and 12" HP Reinforcement ("Wallula Gate Project")**. The Wallula Gate Project involved installing a new gate station at the southernmost point of the Company's Attalia pipeline. The feed to the Attalia line was to the far north and was undersized to handle the largest load on the line at the southern end. This new gate station and HP pipeline has brought a new feed and HP pipe closer to the large loads in the southern system. Design and construction started in 2019, and the project was placed in service in December 2020.

2. **Othello Gate Station Reinforcement and Northwest Pipeline ("NWP") Lateral Upgrade ("Othello Gate Project")**. The Othello Gate Project upgraded the gate station equipment to accommodate the increase in the NWP Othello lateral pipe and pressure. These upgrades were required due to insufficient capacity in the lateral and at the gate station to accommodate increased industrial load and overall historical flows. The project was completed and fully placed in service in September 2020.

3. **Walla Walla Gate Station and 6" HP Reinforcement ("Walla Walla Gate Project")**. The Walla Walla Gate Project is a reinforcement project

designed to eliminate the need for the district to bypass during cold weather events and to address the supply issues presented by the ongoing growth in the southern area of Walla Walla. The Walla Walla Gate Project was completed and placed in service in December 2020.

4. **Arlington Gate Station and 6" HP Reinforcement ("Arlington Gate Project")**. The Arlington Gate Project upgrades the existing Arlington Gate station, takes over regulation from NWP, and upgrades the outlet pipe from the station to meet current winter capacities and to accommodate increased gas load in the Arlington system. The Arlington Gate Project was fully placed in service in September 2020.

5. **Bellingham 8" HP Relocation ("Bellingham 8" HP Project")**. The Bellingham 8" HP Project involved relocating the existing 10" HP main attached to the Bellingham State Street Bridge due to the City of Bellingham rebuilding the State Street Bridge. The project was started in early 2019, and the project was completed and placed in service in January 2020.

6. **Moses Lake 4" PE Reinforcement ("Moses Lake 4" PE Project")**. The Moses Lake 4" PE project included installing approximately 1,800 feet of new 4" PE pipe to loop the northwestern Moses Lake system and improving the pressures to be above design criteria during peak usage. This system reinforcement also improves capacity to allow for ongoing growth in this area of Moses Lake. The project was completed and placed in service in April 2020.

7. **Walla Walla 6" Distribution Steel and PE Reinforcement ("Walla Walla 6" Distribution Project")**. The Walla Walla 6" Distribution Project was needed to reinforce the existing 4" gas main that has reached maximum capacity based on current models and historic gas usage. The project was completed and placed in service in October 2020.

8. **Bremerton Regulator Station Replacement ("Bremerton Reg Station Project")**. The Bremerton Reg Station Project included installing one new regulator station to eliminate five smaller regulator stations that were difficult to access and maintain and had a history of leaks. The project was placed in service in November 2020.

9. **Kennewick Odorizer Replacement ("Kennewick Odorizer Project")**. The Kennewick Odorizer Project involved replacing a vintage odorizer with obsolete parts with a new odorizer that performs correctly and can be safely maintained. The project was placed in service in November 2020.

10. **Bremerton District Office Remodel ("Bremerton Office Project")**. The Bremerton Office Project included remodeling the existing district office located at 6313 Kitsap Way, Bremerton, Washington, 98312. The office remodel was necessary to accommodate added district staff and to reconfigure the outdated space to better meet the current needs of the district operations. This project was completed and placed in service in December 2020.

Table 1, below, is a summary of the projects in a table format**.**

TABLE 1

Line No.	*Description / Project Name*	*Actual In Service Date*	*Actual Cost*
	A	B	C
	Major Capital Projects		
1	Wallula Gate Project	12/29/2020	$ 16,969,017
2	Othello Gate Project	9/28/2020	$ 5,314,207
3	Walla Walla Gate Project	12/10/2020	$ 7,551,516
4	Arlington Gate Project	9/3/2020	$ 6,058,267
5	Bellingham 8" HP Project	1/23/2020	$ 1,568,956
6	Moses Lake 4" PE Project	4/23/2020	$ 213,958
7	Walla Walla 6" Distribution Project	10/26/2020	$ 402,969
8	Bremerton Reg Station Project	11/12/2020	$ 134,782
9	Kennewick Odorizer Project	11/20/2020	$ 156,796
10	Bremerton Office Project	12/21/2020	$ 781,146
11	**Total Major Capital Projects**		**$ 39,151,614**
12			

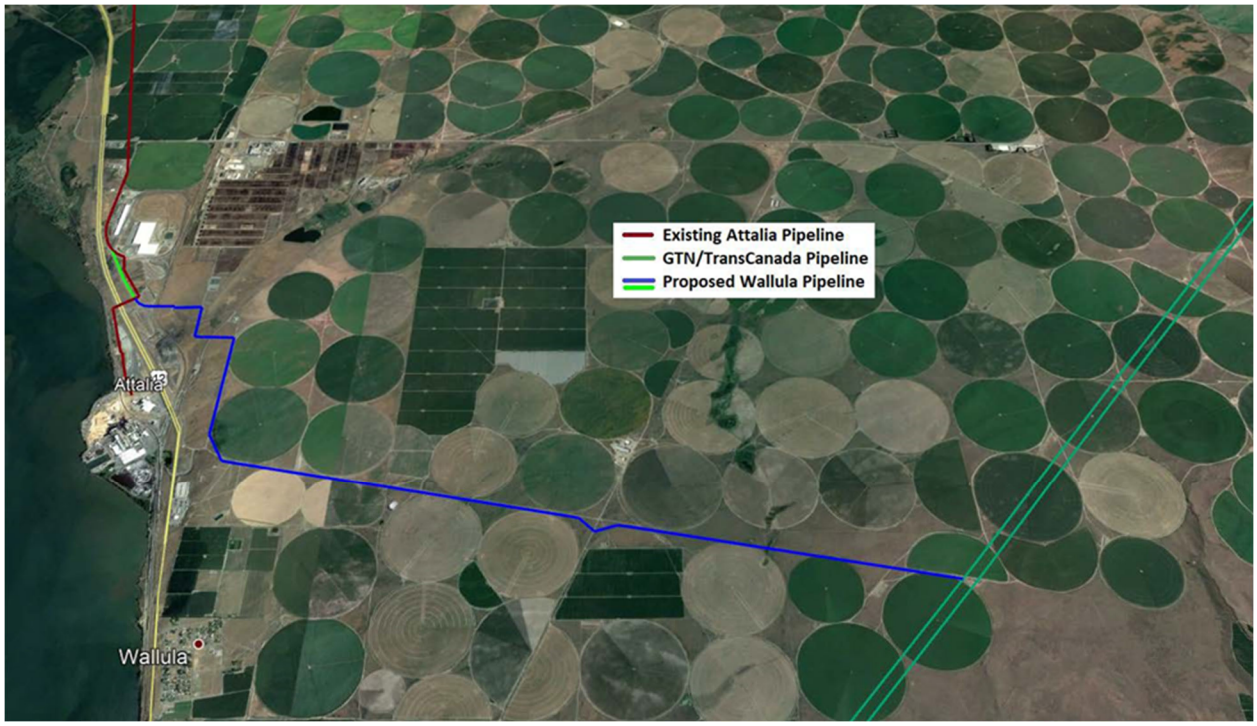
A. Wallula Gate Project

Q. Please describe the Wallula Gate Project.

A. This project included installation of a new gate station and 12" HP pipeline connecting to the south end of the Attalia pipeline. The Wallula gate station is fed from GTN/TransCanada, and the pipeline connecting to the southernmost part of the existing Attalia line is roughly 5.5 miles of 12" and 0.5 miles of 8" high-pressure steel pipeline.

The overall project area is shown on the map below in Figure 2.

Figure 2. Wallula Gate Project



Q. Why did the Company undertake the Wallula Gate Project?

A. The Attalia pipeline, in the Kennewick District, was an 8" HP pipeline that was installed in 1958. The pipeline begins at the gate station north of Pasco, Washington, and ends at the Boise Cascade facility along Highway 12 north of the Wallula Junction, covering approximately 17 miles and serving east Pasco and Burbank. The Attalia pipeline provides service to several industrial and large commercial customers. The pipeline operates at an assumed maximum allowable operating pressure ("MAOP")[3] of 300 psig. However, since this pipe is considered "pre-code," this MAOP had not yet been validated

[3] MAOP means the maximum pressure at which a pipeline or segment of a pipeline may be operated under 49 CFR Part 192.

and this pipeline is part of Cascade's MAOP validation plan. Cascade discovered coating damages to the Attalia pipeline, which led the Company to review the remediation measures in the MAOP validation plan to determine if there was a better way to address MAOP validation. Other issues related to the Attalia pipeline included concerns with shallow bury depth, under-rated fittings, recent damages, material concerns as noted in Cascade's DIMP model, reliability for industrial and commercial customers at the end of the pipeline, the ability to provide for growth in the area, and the possibility that there may be other issues with the aging pipeline that may be unknown. Due to so many unknown variables related to validating the Attalia pipeline MAOP, Cascade determined that the Wallula Gate project best addressed these unknowns and resolved the other system capacity and system integrity issues of the Attalia pipeline.

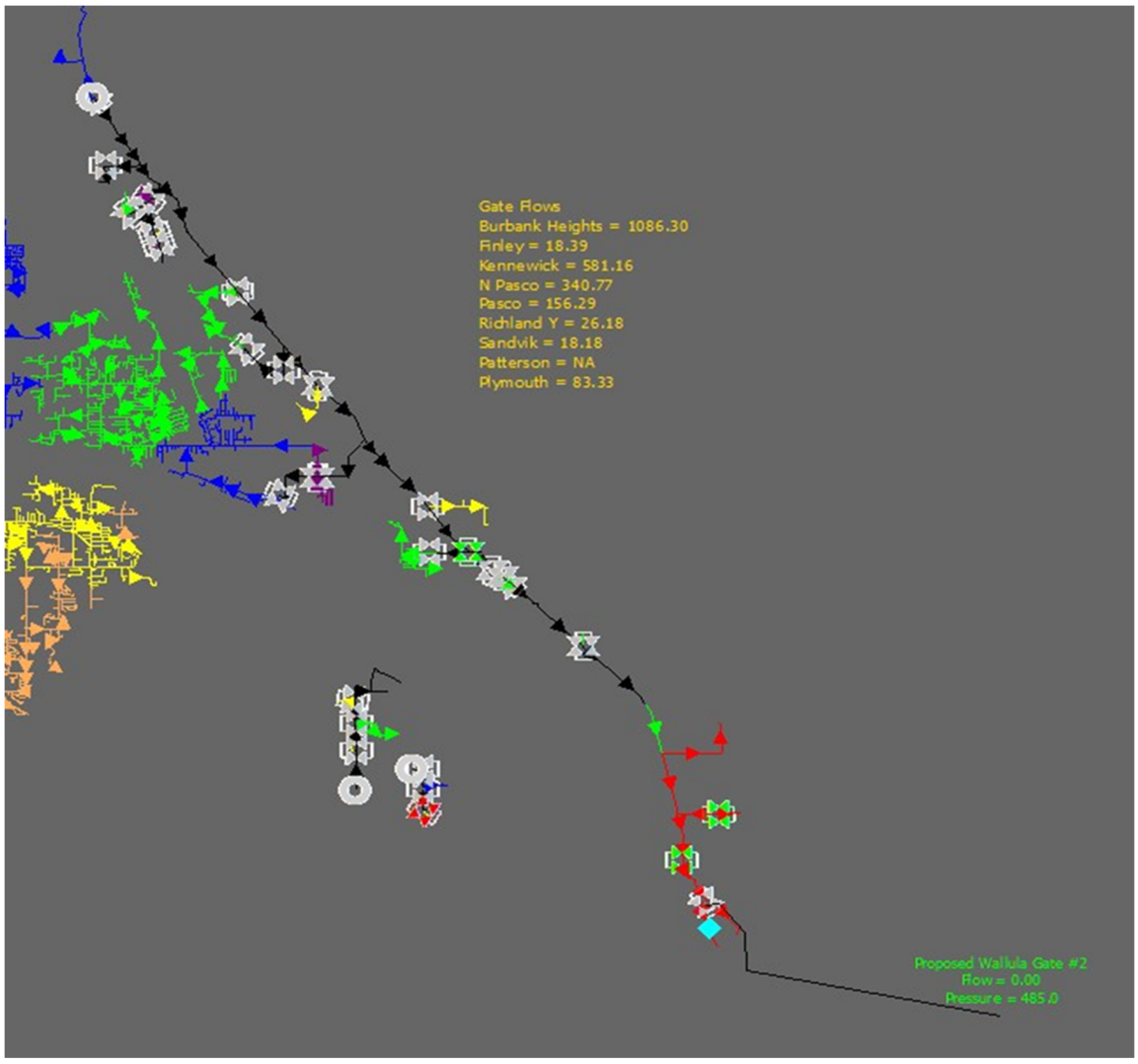
Q. How do Cascade's customers benefit from the Wallula Gate Project?

A. The new gate station, HP pipeline, and regulator station reinforce the Attalia line that had low pressures during peak usage at the south end of the line. This project relieves the Burbank Heights gate station that was running over capacity and required manual bypass during cold weather events. This project allows Cascade to reduce the MAOP of the existing Attalia line to under 20 percent of the specified minimum yield strength ("SMYS")[4] and allow for future testing of the line without any interruption of service if needed. With the addition of the Attalia Gate Station, the Pasco/Burbank/Wallula distribution system is now double fed, protecting the system against failures or risks of outages during future maintenance projects. The increased capacity that this project

[4] SMYS is the minimum yield strength, expressed in pounds per square inch, prescribed by the specification under which the material is purchased from the manufacturer.

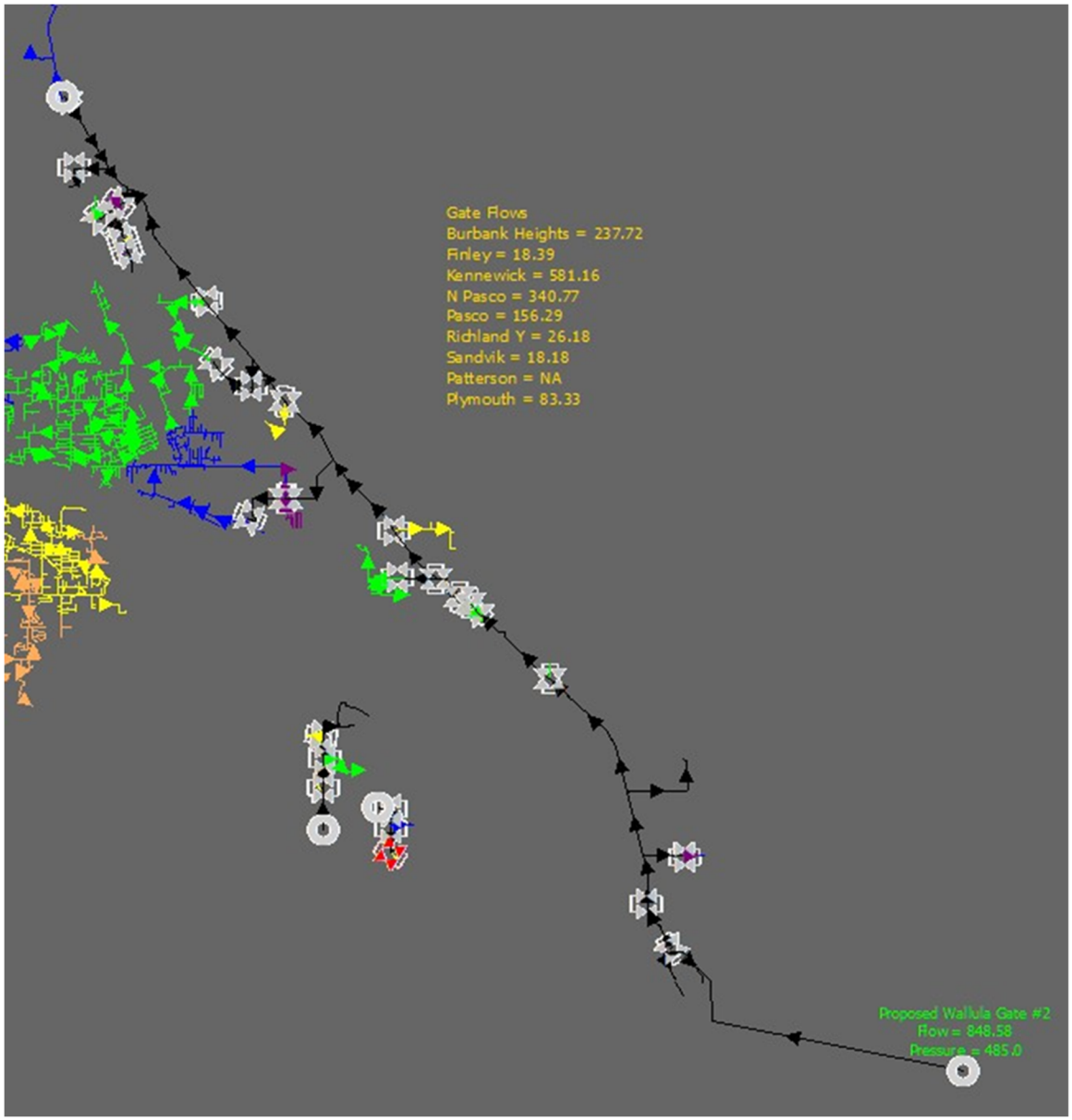
provides also allows for new growth opportunities including the expanded demand for new and existing industrial customers.[5] The Synergi diagrams below in Figures 3 and 4, below, illustrate the improvements to the Pasco/Burbank/Wallula system resulting from the Wallula Gate project.

Figure 3. Synergi Model: Pasco/Burbank/Wallula – Current Model



[5] There is a developing industrial park at the southernmost section of the Attalia line, which the new pipeline is running through and will be able to serve. This is also the alignment for the new Highway 12, which will parallel the new pipeline and further attract new customers to this area.

Figure 4. Synergi Model: Pasco/Burbank/Wallula –
Improved Model Upon Project Completion



The area in red at the end of the high-pressure pipeline in Figure 3 indicates insufficient pressure to support the existing loads on the system. After the reinforcement

in Figure 4, the model shows sufficient pressure to maintain existing customers and provide adequate pressure for new customers.

Q. Did the Company consider alternative ways to meet the need for system reinforcement in the Pasco/Burbank/Wallula system?

A. Yes. In addition to the Wallula Gate Project described above, the Company considered the following alternatives to address the system reinforcement needs:

1. Replace the Attalia pipeline: Under this alternative, the Company would replace the Attalia pipeline in its entirety with a 12" HP steel pipeline operating at 500 psig. Replacing the pipeline would eliminate all the MAOP and integrity concerns and increasing the diameter and pressure would allow for future growth. It is likely that the existing right-of-way ("ROW") and easements would be able to be utilized, and any issues with the ROW or easements could be corrected during the replacement project.
2. Dodd Rd installation with new gate station: Under this alternative, Cascade would install the new proposed gate station and pipeline in a different location and route.
3. Replace the Burbank Heights gate and validate the Attalia Line: Under this alternative, Cascade would address the capacity issues of the existing gate station by replacing the existing gate and would perform the MAOP validation of the Attalia line.

Q. Why did the Company reject these alternatives and select the Wallula Gate Project?

A. None of the alternatives that the Company considered would adequately meet the Company's need to provide reliable service in the Pasco/Burbank/Wallula area, resolve

the MAOP validation and integrity issues of the existing Attalia line, and accommodate future load growth.

The Company determined that it could not pursue the first alternative (replace the Attalia pipeline) because the crossings that would be required presented significant challenges. Surveying, permitting, and planning would be needed for crossing the Snake River, McNary Wildlife Refuge, Casey Pond, Hood Park, and Highways 12 and 395. Permits for some of these crossings could take up to two years to acquire, therefore doubling the length of the project, which would extend the project beyond the MAOP validation commitment. Constructing a pipeline through the populated areas of Burbank and tying over existing regulator stations to the new pipeline would also present challenges.

The Company determined that it could not pursue the second alternative (Dodd Rd installation with new gate station) because the alignment would have extended the pipeline distance by over two miles as compared to the Wallula Gate Project and would have had much greater restoration costs because it is located at or near a concrete road with greater elevation challenges.

The Company determined that it could not pursue the third alternative (replace Burbank Heights gate and validate the Attalia line) because this option would have addressed only the capacity issues of the gate station and the validation of the Attalia line, and the Company would still have the major concerns of maintaining adequate pressures to serve the existing customer base and allowing new growth. The MAOP validation plan

called for *in situ* testing[6] for pipe grade in 2017 and pressure testing in 2019 at an estimated cost of $784,000 and $2,000,000, respectively. Thus, Cascade would likely have needed to spend close to $3,000,000 on testing alone, without performing the needed upgrades.

As a result, the Company determined that the Wallula Gate Project was the best option to meet the Company's need for reinforcement in the area, resolve the MAOP validation issues and integrity concerns with the existing Attalia line, and accommodate future growth.

Q. Was the Wallula Gate Project included in the Company's IRP analysis?

A. Yes. The analysis of the Wallula Gate Project (Attalia Pipeline) in the 2018 IRP was completed in 2017 and the cost estimates and timing of the Wallula Gate project described in the 2018 IRP were revised due to minor scope changes and increases in costs for materials and construction.

Q. What was the timing of the project?

A. Design, drafting, permitting and easement acquisitions for the pipeline were completed by February 2019. Construction of the project began in mid-2019, but final completion was delayed due to unexpectedly difficult drilling conditions. The unanticipated drilling conditions resulted in two failed bores while attempting to cross a private rail spur. The failed bore attempts resulted in increased costs associated with additional materials, change orders, and re-mobilizing crews, equipment, and materials. Construction was

[6] *In situ* testing refers to pipe wall thickness and grade tests performed on installed piping in the field. Such testing is considered a direct means of establishing existing steel grade of the pipe to inform pipe strength calculations.

completed in December 2020, and the project was placed in service on December 29, 2020.

Q. What was the cost for the project?

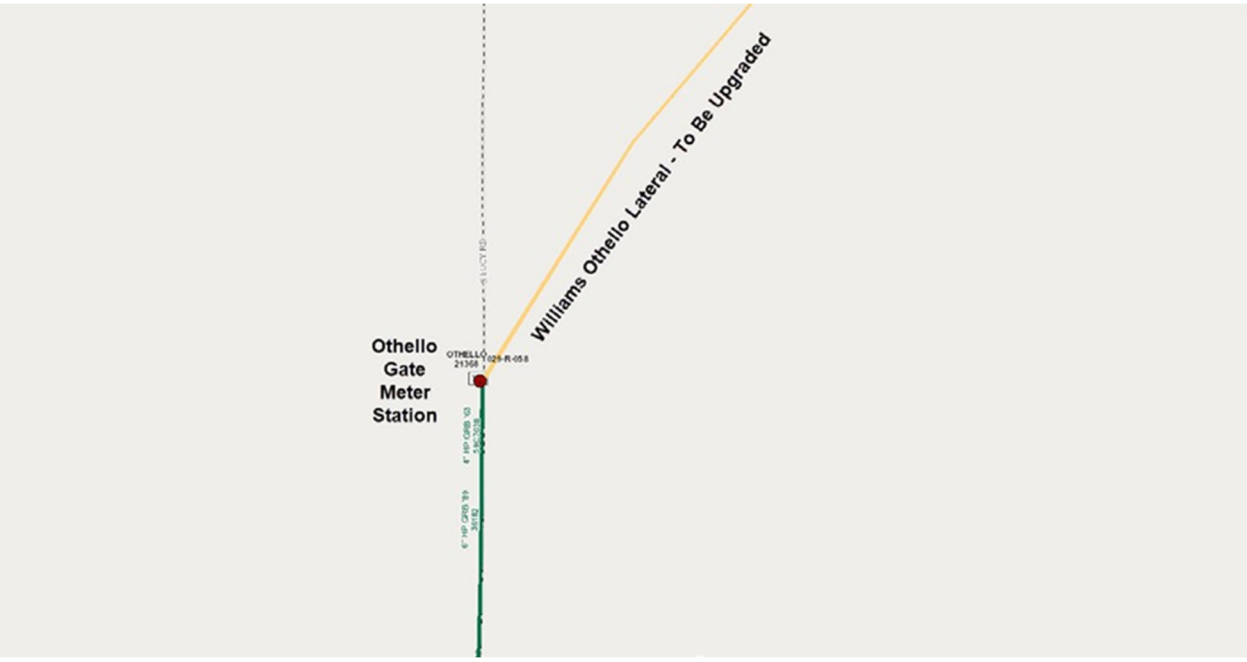
A. The total actual cost was $16,969,017, as detailed in Exh. PCD-2.

B. <u>Othello Gate Project</u>

Q. Please describe the Othello Gate Project.

A. This project includes upgrading and taking over pressure regulation from NWP at the existing Othello Gate Station. The project also includes NWP upgrading their Othello lateral pipeline to accommodate the increased capacity in the Othello system. The project is located in Adams County, Washington, approximately one mile north of the intersection of W Herman Rd and Lucy Rd. The project area is shown on the map below in Figure 5.

Figure 5. Othello Gate Project



Q. Why did the Company undertake the Othello Gate Project?

A. This project increases the Othello Gate Station's capacity and, combined with the upgrade to NWP's Othello lateral, increases the system capacity of the Othello distribution system. The Othello area has experienced overall customer growth and increased large volume customer demand, which has surpassed the physical design and contract capacities of the Othello Gate Station. Given NWP's planned upgrade to increase capacity and pressure in the Othello lateral pipeline, this upgrade will ensure Cascade's Othello Gate facilities continue to operate below 20 percent SMYS and are rated for the new inlet MAOP. By operating facilities below 20 percent SMYS, these facilities do not become designated as gas transmission facilities per state and federal pipeline safety regulations, which would require additional maintenance and other programs applicable to transmission facilities.

Q. How will Cascade's customers benefit from the Othello Gate Project?

A. This project will improve the physical capacity of the Othello system to meet the design day demands of Cascade's core customers and contract demands of Cascade's large volume customers. In addition, ensuring Cascade's Othello Gate facilities will continue to operate below 20 percent SMYS and are rated for the new inlet MAOP reduces the operating costs associated with operating and maintaining gas transmission facilities and ensures continued compliance with state and federal pipeline safety regulations.

Q. Did the Company consider alternative ways to meet the need for the system reinforcement in Othello?

A. Yes. In addition to the Othello Gate Project as described above, the Company considered the following alternatives to address the system reinforcement needs:

1. No reinforcement: Under this alternative, the Company would not perform any reinforcement.

2. Postponing reinforcement: Under this alternative, Cascade would postpone reinforcement for two years.

Q. Why did the Company reject these alternatives and select the Othello Gate Project?

A. None of the alternatives that the Company considered would adequately meet the Company's need to provide reliable service in the Othello distribution system and accommodate future load growth.

The Company determined that it could not pursue the first alternative (no reinforcement) because it would result in operating the Othello Gate Station below capacity, reducing the ability to keep the gas pressure deliverable to existing customers. Operating the station and the lateral below capacity could also result in damaging NWP's meter equipment at the station and a loss of metering the inlet gas to the station.

The Company determined that it could not pursue the second alternative (postponement) because it would also result in the possibility of loss of service to core and large volume customers due to operating the Othello gate station and pipeline lateral below capacity.

As a result, the Company determined that the Othello Gate Project was the best option to meet the Company's need for reinforcement in the area and accommodate future growth.

Q. Was the Othello Gate Project included in the Company's 2020 IRP?

A. Yes, the analysis supporting this project was included in the Company's 2020 IRP, which was submitted to the Commission in February 2021.

Q. What was the timing of the Othello Gate Project?

A. Construction began in early summer 2020 and the project was placed in service on September 28, 2020.

Q. What was the cost of the Othello Gate Project?

A. The total actual cost was $5,314,207, as detailed in Exh. PCD-2.

C. Walla Walla Gate Project

Q. Please describe the Walla Walla Gate Project.

A. The Walla Walla Gate Project is a system reinforcement project that included installing a new gate station located at NWP's interstate pipeline, approximately 2 miles of new 6" HP steel pipe, 2 new regulator stations, and approximately 2 miles of 6" distribution PE pipe. The project site starts at Pranger Road and heads north to Old Milton Highway then goes east and west along Old Milton Highway to connect to the existing Walla Walla distribution system.

Q. Why did the Company undertake the Walla Walla Gate Project?

A. The pressure in the southern Walla Walla distribution system during peak usage was below design criteria, which required the district to bypass during cold weather events. This area is the outer edge of the Walla Walla distribution system, farthest from existing high-pressure pipelines and regulation. The customers in the southern Walla Walla system are a mix of residential and commercial, and most are large homes or wineries with higher gas demand. In addition, the existing distribution system does not allow for ongoing growth in the southern Walla Walla area.

Q. How do Cascade's customers benefit from the Walla Walla Gate Project?

A. The new HP pipeline and regulator station bring the southern Walla Walla distribution system above design criteria during peak usage and cold weather events, eliminating the need for bypass operations. Additionally, this project allows Cascade to bring high pressure gas closer to the areas of Walla Walla with larger residential and commercial gas load and allows gas service to be offered to new growth occurring in this area of development. The Synergi diagrams below in Figures 6 and 7 illustrate the improvements to the Walla Walla system resulting from this project.

Figure 6. Synergi Model: Walla Walla – Current Model

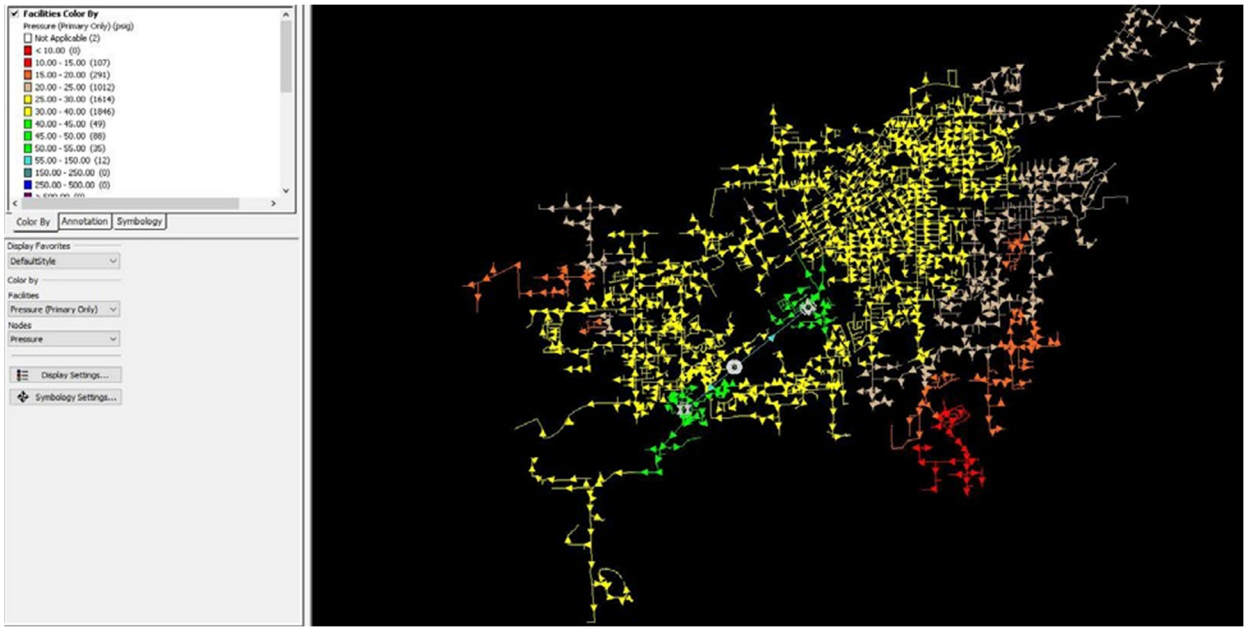
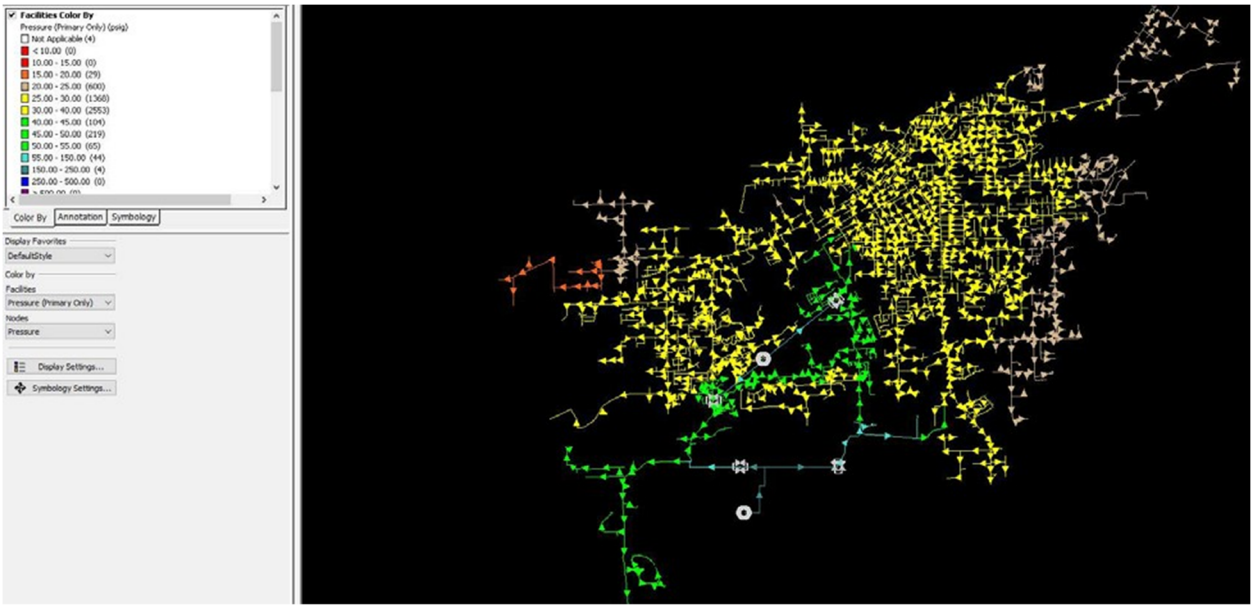


Figure 7. Synergi Model: Walla Walla – Improved Model Upon Project Completion



As indicated in the legends for both diagrams, the areas of the map in red and orange indicate pressures below 20 psig. Operating at pressures below 20 psig can result in outages, especially during cold weather events. The improved model after the reinforcement is completed (Figure 7) shows these areas now operating at pressures above 20 psig (as shown by the yellow and green colors), therefore removing the need for remedial action during cold weather events and also providing adequate pressure for new gas load.

Q. Did the Company consider alternative ways to meet the need for system reinforcement in the southern Walla Walla area?

A. Yes. In addition to the Walla Walla Gate Project as described above, the Company considered the following alternatives to address the system reinforcement needs:

1. No reinforcement: Under this alternative, the Company would not perform any reinforcement.

2. Postponing reinforcement: Under this alternative, Cascade would postpone reinforcement for five years.

3. Shorter reinforcement: Under this alternative, Cascade would install only high- pressure pipeline and regulator stations, which would put the high-pressure pipeline and new regulator stations farther away from the existing and new load.

Q. Why did the Company reject these alternatives and select the Walla Walla Gate Project?

A. None of the alternatives that the Company considered would adequately meet the Company's need to provide reliable service in the southern Walla Walla area and accommodate future load growth.

The Company determined that it could not pursue the first alternative (no reinforcement) because it would not address the Company's need to bypass during cold weather events to keep system pressures in the southern Walla Walla system deliverable to customers. There are many factors that affect the decision to bypass regulation, and some of these factors are dependent on current temperatures, inlet pressure from the transmission company, time of day, and flow rates. Due to these fluctuating variables, it is difficult to make a concrete rule for when bypass needs to occur, and it instead requires close on-site system observation, often occurring in extreme weather conditions. There are risks involved with bypass operations with personnel required to manually bypass regulation and closely monitor system pressures to prevent over pressuring the

downstream pipeline systems and customer services and meters. Other risks include not performing bypass operations soon enough and potentially losing gas service to thousands of customers.

The Company determined that it could not pursue the second alternative (postponement) because it would require Walla Walla District personnel to continue to bypass during cold weather events until a reinforcement is in place. Additionally, Cascade needs to bring higher pressure and regulation closer to the load to provide service to new residential and commercial customers in the southern Walla Walla area. There are efficiencies and cost savings that can be achieved by installing gas mains while developments and construction are in progress, and it can be more difficult and expensive to install main and services at a later date when the system capacity is increased and new neighborhoods are built out with finished infrastructure (roads, sidewalks, storm, sewer, water, phone, cable, and power).

The Company determined that it could not pursue the third alternative (shorter reinforcement) because this option would not adequately meet the Company's needs for reliability. While the Company's modeling showed that a shorter reinforcement option would provide some improvements in the southern Walla Walla distribution system, there still would be customers in the southern Walla Walla distribution system that would experience pressures below design criteria, which would result in a continuing need to bypass during peak usage and cold weather events.

As a result, the Company determined that the Walla Walla Gate Project was the best option to meet the Company's need for reinforcement in the area and to accommodate future growth.

Q. Was the Walla Walla Gate Project included in the Company IRP analysis?

A. Yes. The analysis and timing of the Walla Walla Gate project in Cascade's 2018 IRP remains consistent with the current project as described in this section.

Q. What was the timing of the project?

A. Construction began in July 2020 and was completed in December 2020. The actual in-service date was December 10, 2020.

Q. What was the cost of the project?

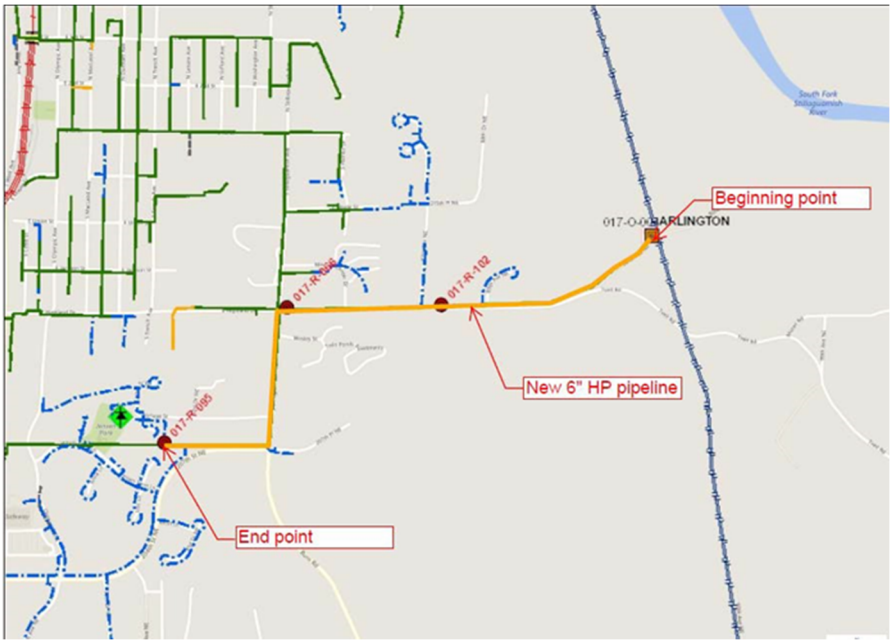
A. The total actual cost was $7,551,516, as detailed in Exh. PCD-2.

D. Arlington Gate Project

Q. Please describe the Arlington Gate Project.

A. This project includes upgrading the existing Arlington Gate Station, taking over pressure regulation at the station from NWP, and replacing 1.15 miles of existing 4" HP outlet pipeline with a 6" HP pipeline in Arlington, Washington. The gate station upgrade includes the installation of a heater, odorizer, and regulation equipment. The overall replacement project area is shown on the map below in Figure 8, below.

Figure 8. Arlington Gate Project



Q. Why did the Company undertake the Arlington Gate Project?

A. The pressure in the Arlington distribution system during peak usage was below design criteria, which required the District to perform remedial measures during cold weather events. In addition, the existing system did not allow for ongoing residential and commercial growth occurring in the City of Arlington.

Q. How will Cascade's customers benefit from the Arlington Gate Project?

A. This project allows for an increase in the Arlington Gate Station capacity to meet cold-weather capacity needs and to accommodate the growing demand in the City of Arlington. This project will increase the efficiency of Cascade's HP system by establishing a larger volume capacity, resulting in improved delivery pressures for existing customers and the ability to accommodate new growth in the area. The Synergi

diagrams below in Figures 9 and 10 illustrate the anticipated improvements to the Arlington system resulting from this project.

Figure 9. Synergi Model: Arlington – Current Model

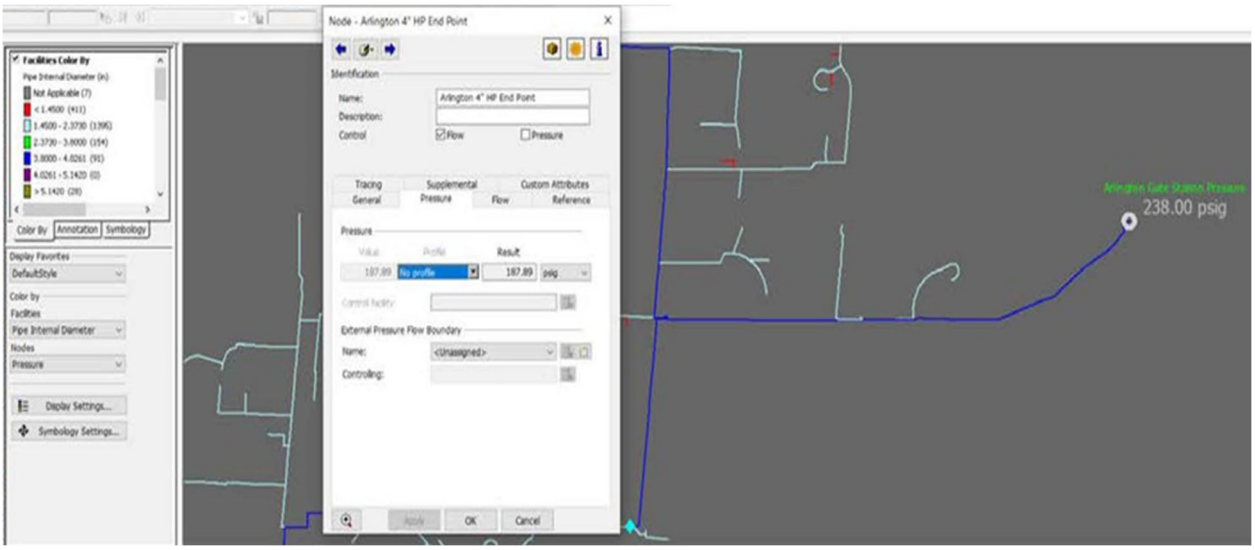
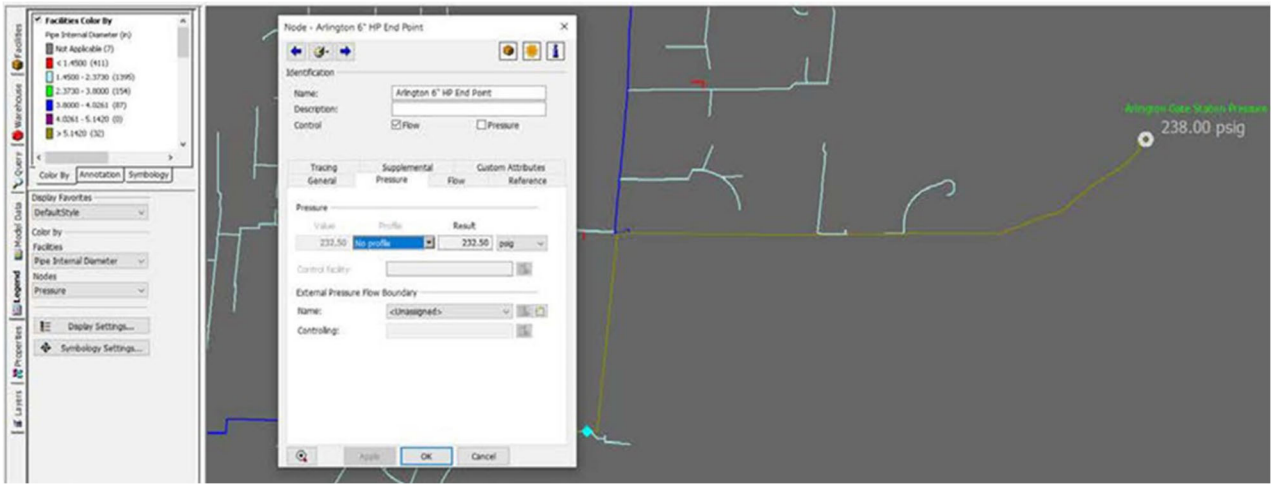


Figure 10. Synergi Model: Arlington – Improved Model Upon Project Completion



As shown in the improved model (Figure 10), the improved pressure and capacity in the pipeline removed the need for remedial action during cold weather events and provide adequate pressure for new gas load.

Q. Did the Company consider alternative ways to meet the need for system reinforcement in the Arlington area?

A. Yes, in addition to the Arlington Gate Project as described above, the Company considered the following alternatives:

1. No reinforcement: Under this alternative, the Company would not perform any reinforcement.
2. Postponing reinforcement: Under this alternative, Cascade would postpone reinforcement for 2 years.
3. Gate station upgrade only: Under this alternative, Cascade would upgrade the gate station but would not replace the HP pipe, which would not improve the capacity of the Arlington distribution system.

Q. Why did the Company reject these alternatives and select the Arlington Gate Project?

A. None of the alternatives that the Company considered would adequately meet the Company's need to provide reliable service in the Arlington area and accommodate future growth.

The Company determined that it could not pursue the first alternative (no reinforcement) because the Arlington distribution system would continue to experience low pressures during peak usage and cold weather events, and without installing a reinforcement, Cascade would be unable to provide gas service to new residential and commercial customers in the Arlington distribution system.

The Company determined that it could not pursue the second alternative (postponement) because the Arlington distribution system would continue to experience

low pressures during peak usage until the project is completed. In addition, residential and commercial growth is occurring in the City of Arlington currently and is anticipated to continue to increase. By not increasing the capacity of the higher-pressure pipeline, Cascade would not have the ability to provide service to new residential and commercial customers in the Arlington distribution system.

The Company determined that it could not pursue the third alternative (gate station upgrade only) because the Synergi modeling for this option showed some improvements in the Arlington distribution system, but did demonstrate adequate reinforcement for the remaining areas experiencing low pressure and did not provide adequate reinforcement to accommodate requests for additional load.

As a result, the Company determined that the Arlington Gate Project was the best option to meet the Company's need for reinforcement in the area and to accommodate future growth.

Q. Was the Arlington Gate Project included in the Company's IRP analysis?

A. Yes. The analysis of the Arlington Gate Project was included in the Company's 2018 IRP, which was completed in 2017. The cost estimates and timing of the Arlington Gate project described in the 2018 IRP were revised due to minor scope changes and increases in costs for materials and construction.

Q. What was the timing of the Arlington Gate Project?

A. Construction started in late 2019 and was completed in September 2020. The actual in-service date was September 3, 2020.

Q. What was the cost of the project?

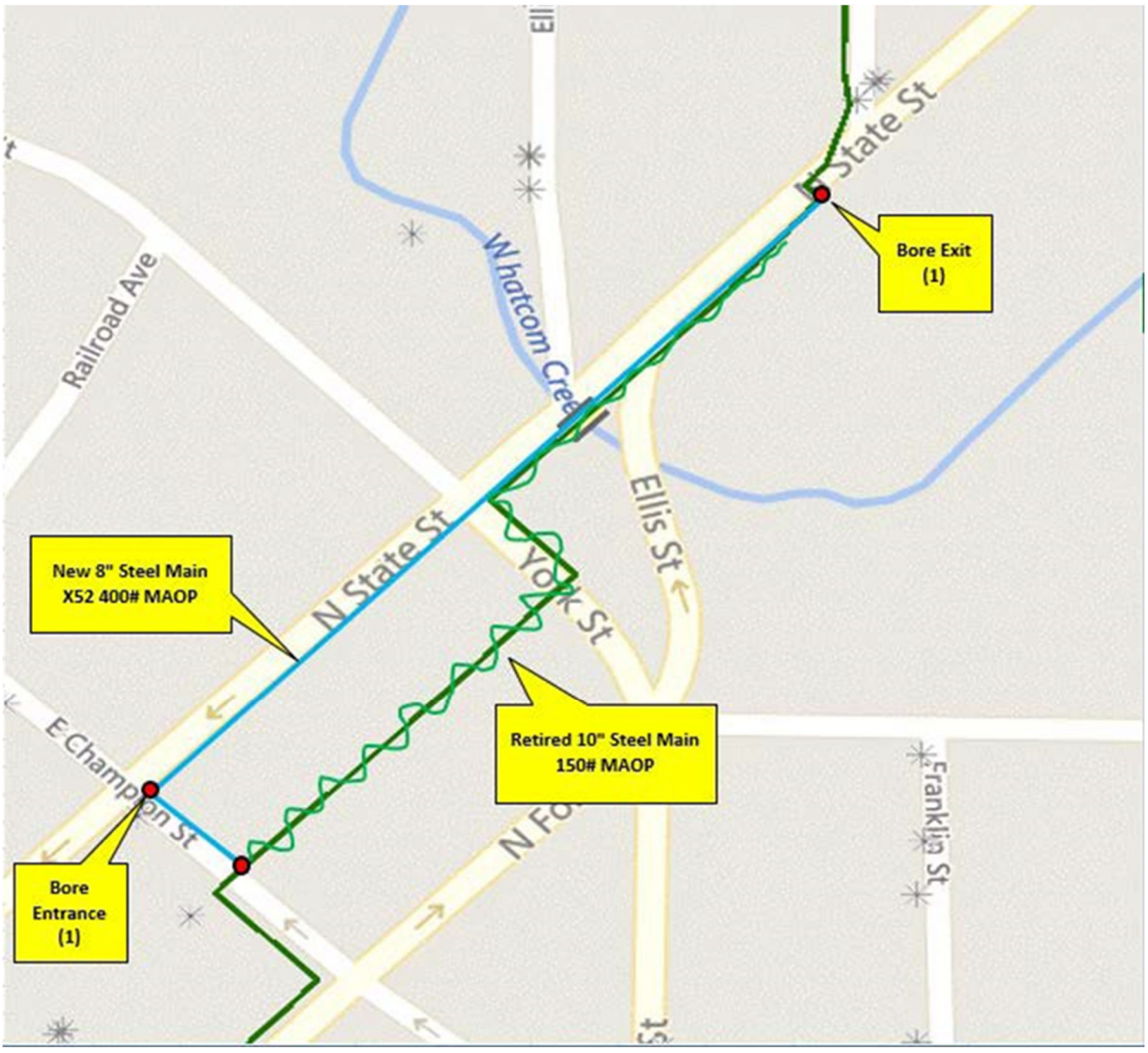
A. The total actual cost was $6,058,267, as detailed in Exh. PCD-2.

E. Bellingham 8" HP Project

Q. Please describe the Bellingham 8" HP Project.

A. This project involved installing 1,200 ft of 8" HP steel pipe via horizontal directional drill ("HDD") and retiring the existing 10" HP steel pipe attached to the State Street Bridge in Bellingham, Washington. The overall replacement project area is shown on the map below in Figure 11, below.

Figure 11. Bellingham 8" HP Project



Q. Why did the Company undertake the Bellingham 8" HP Project?

A. The City of Bellingham rebuilt the Whatcom Creek crossing bridge ("State Street Bridge") in Bellingham. Cascade has 10" HP steel pipe attached to this bridge that required relocation due to the City's efforts to rebuild the bridge.

Q. How will this project benefit customers?

A. This project safely relocated the pipeline prior to the bridge reconstruction and upgraded the Bellingham HP line. Specifically, the project established a higher design pressure, allowing for a future uprate of the Bellingham HP system to improve the Bellingham distribution system capacity.

Q. Did the Company consider alternative ways to meet the need for this project?

A. Yes. The original proposed reroute location was identified to avoid having to bore under Whatcom Creek by relocating the pipeline along a route running to the east, allowing for a tie-in to the existing 4" HP line.

Q. Why did Cascade reject this alternative and select the Bellingham 8" HP Project as the best way to meet the Company's needs in the Bellingham area?

A. Upon analysis of the Bellingham system models, this line was shown to have inadequate pressure to provide reliable service south of tie-in location. This alternative route would also have required an additional 1,900 ft of 8" HP pipe to ensure reliable system operation, thereby doubling the cost of the project. The reroute alternative considered was more costly and overall less beneficial to the Bellingham distribution system than the chosen route via HDD under Whatcom Creek.

Q. What was the timing of the Bellingham 8" HP Project?

A. Design for this project began in February 2019, construction began in December 2019, and the project was completed and in service in January 23, 2020.

Q. What was the cost of the Bellingham 8" HP Project?

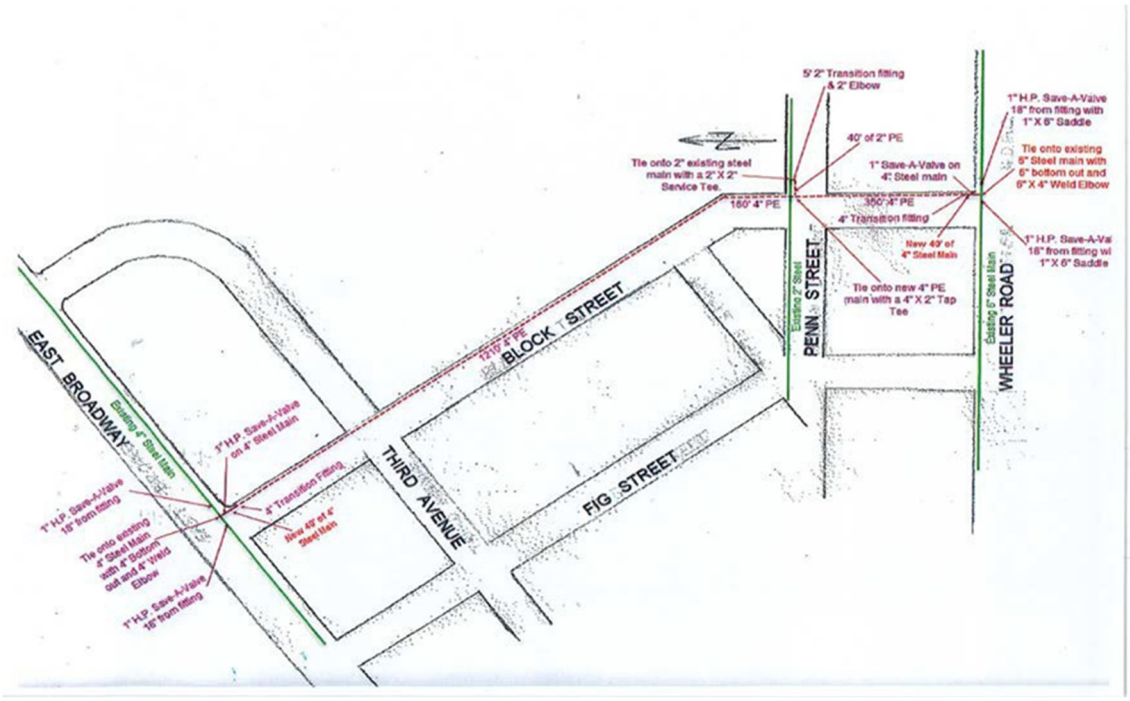
A. The actual, completed cost of the project was $1,568,956, as detailed in Exh. PCD-2.

F. Moses Lake 4" PE Project

Q. Please describe the Moses Lake 4" PE Project.

A. This project installed approximately 1,800 ft of 4" PE main along Block Rd in Moses Lake, Washington, to loop the existing Moses Lake northwest distribution system. The overall project area is shown on the map below in Figure 12.

Figure 12. Moses Lake 4" PE Project



Q. Why did the Company undertake the Moses Lake 4" PE Project?

A. The Company's Synergi modelling showed that design day pressures for the northwest Moses Lake distribution pressure system were below design criteria. The reinforcement brought the pressures in the northwestern system above design criteria, which will allow Cascade to better serve the existing core and commercial customers and provide capacity to accept further growth.

Q. How will this project benefit customers?

A. The new 4" PE pipeline brought the Moses Lake northwestern distribution system above design criteria during peak usage and cold weather events. Additionally, this project allows for new commercial and residential growth occurring in the area. The Synergi diagrams below in Figures 13 and 14 illustrate the anticipated improvements to the Moses Lake system resulting from this project.

Figure 13. Synergi Model: Moses Lake – Current Model

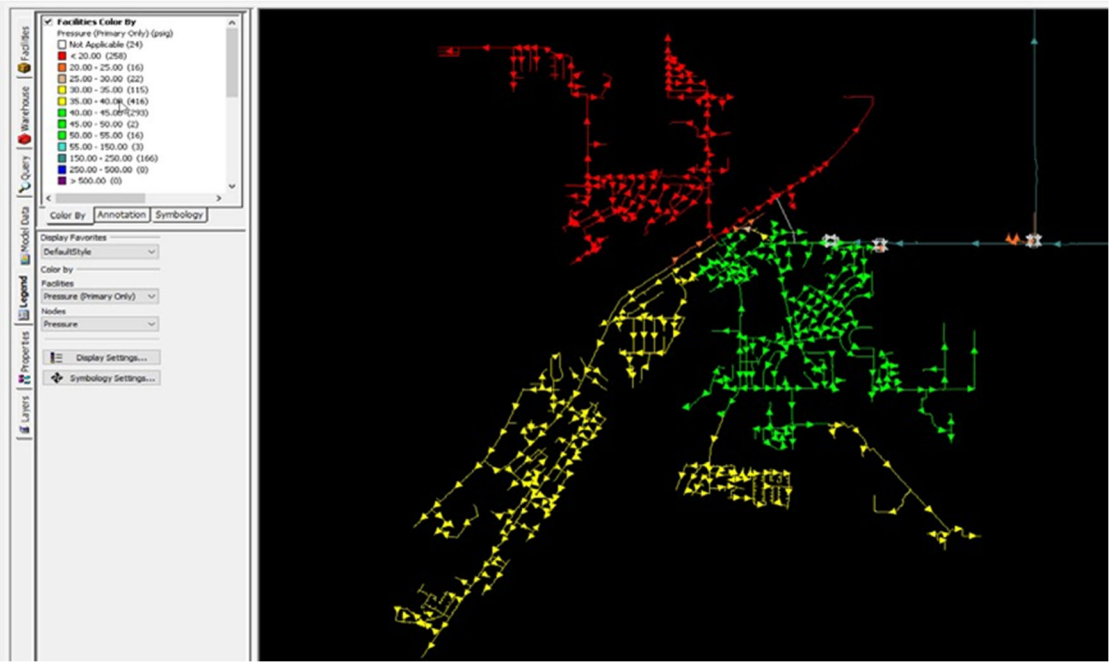
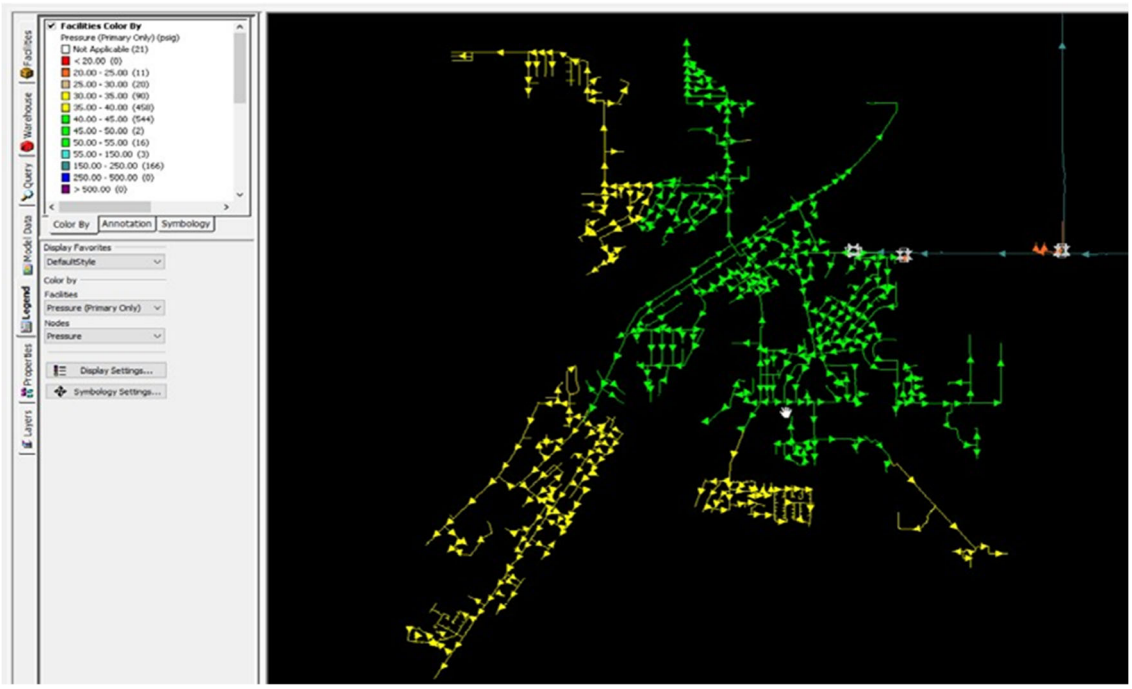


Figure 14. Synergi Model: Moses Lake – Improved Model Upon Project Completion



As indicated in the legends for both diagrams, the areas of the map in red and orange indicate pressures below 20 psig. Operating at pressures below 20 psig can result in outages, especially during cold weather events. The improved model after the reinforcement is completed (Figure 14) shows these areas now operating at pressures above 20 psig (as shown by the gray, yellow and green colors), therefore removing the need for remedial action during cold weather events and providing adequate pressure for new gas load.

Q. Did the Company consider alternative ways to meet the need for this project?

A. Yes, in addition to the Moses Lake 4" PE Project described above, the Company considered the following alternatives:

1. No reinforcement: Under this alternative, the Company would not perform any reinforcement.

2. Postponing reinforcement: Under this alternative, Cascade would postpone reinforcement for 2 years.

3. Pipe replacement: Under this alternative, Cascade would replace existing pipe with larger pipe.

Q. Why did Cascade reject these alternatives and select the Moses Lake 4" PE Project as the best way to meet the Company's needs in the Moses Lake area?

A. None of the alternatives that the Company considered would adequately meet the Company's need to provide reliable service in the Moses Lake area.

The Company determined that it could not pursue the first alternative (no reinforcement) because the northwestern Moses Lake distribution system would continue to experience low pressures during peak usage and cold weather events, and Cascade would be unable to provide gas service to new residential and commercial customers and existing customers wanting to increase their commercial gas load in the northwestern Moses Lake distribution system without installing a reinforcement.

The Company determined that it could not pursue the second alternative (postponement) because the northwestern Moses Lake distribution system would continue to experience low pressures during peak usage. In addition, residential and commercial growth is occurring in the City of Moses Lake currently and growth is anticipated to continue to increase. By not looping the Moses Lake system and thus improving capacity, Cascade would not have the ability to provide service to new residential and commercial customers and existing customers wanting to increase their commercial gas load in the northwestern Moses Lake distribution system.

The Company determined that it could not pursue the third alternative (pipe replacement) because the Synergi modeling for this option showed some improvements in the northwestern Moses Lake distribution system, but did demonstrate adequate reinforcement for the remaining areas experiencing low pressure and did not provide adequate reinforcement to accommodate requests for additional load.

As a result, the Company determined that the Moses Lake 4" PE Project was the best option to meet the Company's need for reinforcement in the area and accommodate future growth.

Q. Was the Moses Lake 4" PE Project included in the Company's IRP?

A. Yes, the analysis supporting this project was included in the Company's 2020 IRP, which was submitted to the Commission in February 2021.

Q. What was the timing of the Moses Lake 4" PE Project?

A. The project was estimated for completion in July 2020, and it was placed in service on April 23, 2020.

Q. What was the cost of the Moses Lake 4" PE Project?

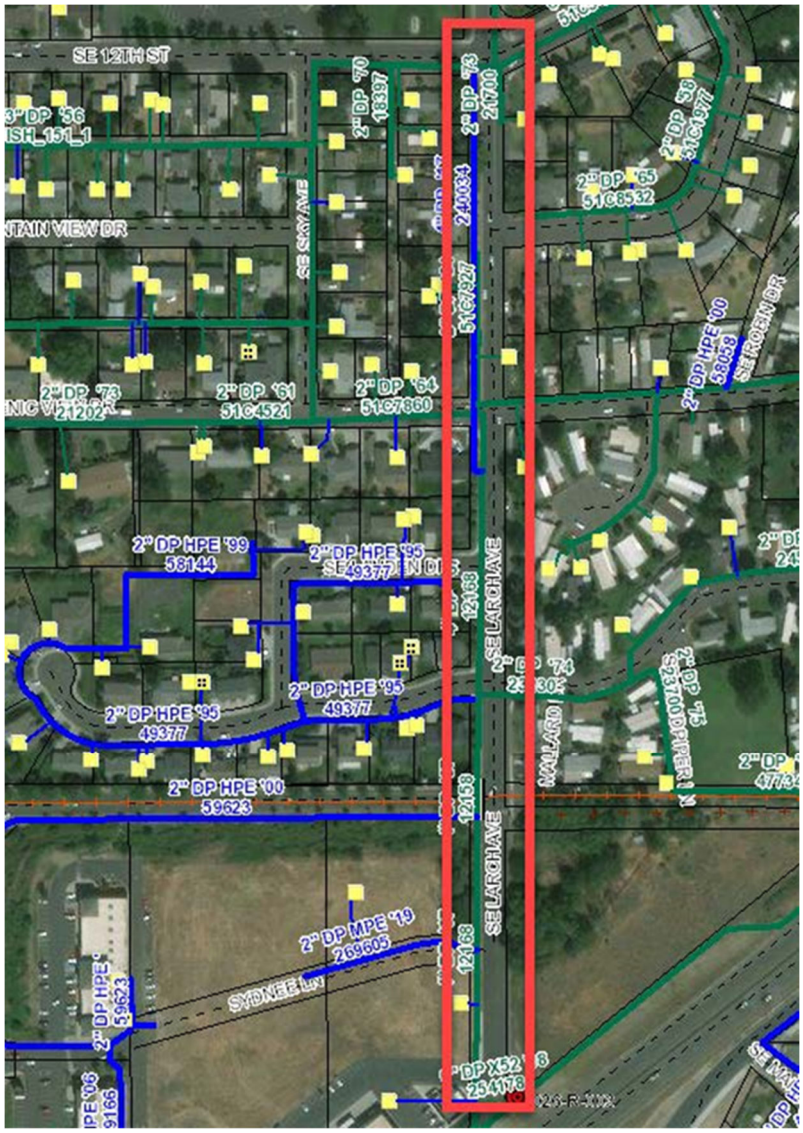
A. The total actual cost was $213,958, as detailed in Exh. PCD-2.

G. Walla Walla 6" Distribution Project

Q. Please describe the Walla Walla 6" Distribution Project.

A. This project consisted of installing approximately 1,800 ft of 6" PE distribution pressure pipe. The pipeline extends from the 6" steel outlet piping of the R-3 regulator station to the 6" steel pipe at SE 12th Street. The overall project area is shown on the map below in Figure 15.

Figure 15. Walla Walla 6" Distribution Project



Q. Why did the Company undertake the Walla Walla 6" Distribution Project?

A. Prior to installing this project, the route had 4" steel and 4" PE installed, and it was the largest pipe bottleneck in the Walla Walla/College Place gas system, leading to substantial pressure loss on a design day. The new 6" PE pipe was installed parallel to the existing 4" gas main. Leaving the existing pipe in place eliminates the potential for isolated steel pipe, which could lead to cathodic protection issues.

Q. How will this project benefit customers?

A. This project increases the system capacity in the northeast Walla Walla distribution system, bringing the system above design criteria during peak usage and cold weather events. The R-3 regulator station will take full advantage of the added capacity of the 6" pipe, resulting in an increased maximum demand of almost 20%. Synergi diagrams below in Figures 16 and 17 illustrate the anticipated improvements to the Walla Walla system resulting from this project.

Figure 16. Synergi Model: Walla Walla – Current Model

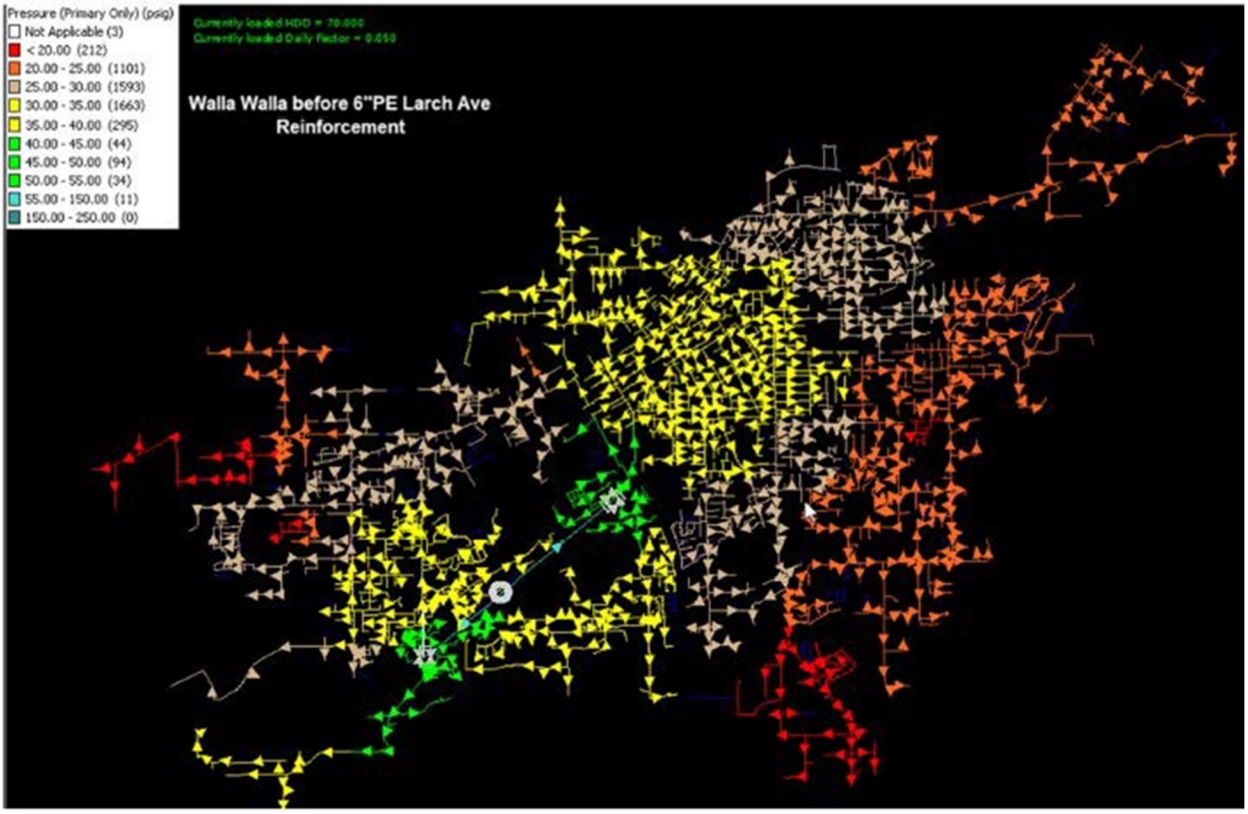
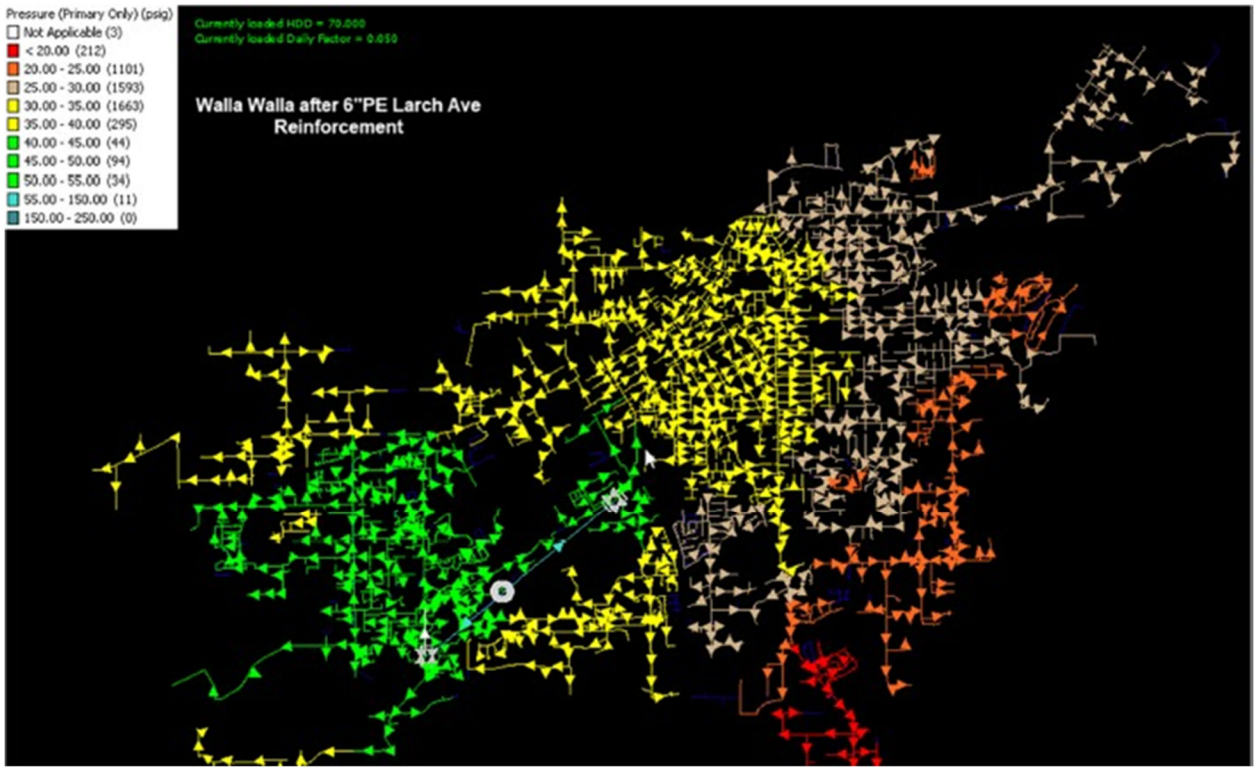


Figure 17. Synergi Model: Walla Walla – Improved Model Upon Project Completion



As indicated in the legends for both diagrams, the areas of the map in red and orange indicate pressures below 20 psig. Operating at pressures below 20 psig can result in outages, especially during cold weather events. he improved model after the reinforcement is completed (Figure 17) shows some[7] of these areas now operating at pressures above 20 psig (as shown by the gray, yellow and green colors), therefore providing adequate pressure for new gas load and removing needs for remedial action during cold weather events.

[7] The southeastern system still in red and orange are resolved with the Walla Walla Gate Station project described in section 3 of this testimony.

Q. Did the Company consider alternative ways to meet the need for this project?

A. Yes. In addition to the Walla Walla 6" Distribution Project as described above, the Company considered the following alternatives to address the system reinforcement needs:

1. No reinforcement: Under this alternative, the Company would not perform any reinforcement.
2. Replacement: Under this alternative, Cascade considered retiring the existing pipe and installing new pipe.

Q. Why did Cascade reject these alternatives and select the Walla Walla 6" Distribution Project as the best way to meet the Company's needs in the Walla Walla area?

A. None of the alternatives that the Company considered would have adequately met the Company's need to provide reliable service in the northeastern Walla Walla area.

The Company determined that it could not pursue the first alternative (no reinforcement) because the northeastern Walla Walla distribution system would continue to experience low pressures during peak usage and cold weather events, and Cascade could lose service to the existing customers in this area unless it installs a reinforcement.

The Company determined that it could not pursue the second alternative (retire the existing pipe and replace with 6" PE) because if the existing pipe is retired, new steel pipe would be required for a portion of the route to ensure continuity with the cathodic protection system. This alternative is more expensive and results in decreased capacity when compared to the current proposal, due to the capacity difference between a single

6" pipeline and a dual-fed system consisting of a new 6" pipeline and an existing 4" pipeline.

As a result, the Company determined that the Walla Walla 6" Distribution Project was the best option to meet the Company's need for reinforcement in the area and to accommodate future growth.

Q. Was the Walla Walla 6" Distribution Project included in the Company's 2020 IRP?

A. Yes, the analysis supporting this project was included in the Company's 2020 IRP, which was submitted to the Commission in February 2021.

Q. What was the timing of the Walla Walla 6" Distribution Project?

A. The project was estimated for completion on November 2020 and was completed a month earlier than expected. The project was placed in service on October 26, 2020, as shown in Exh. PCD-2.

Q. What was the cost of the Walla Walla 6" Distribution Project?

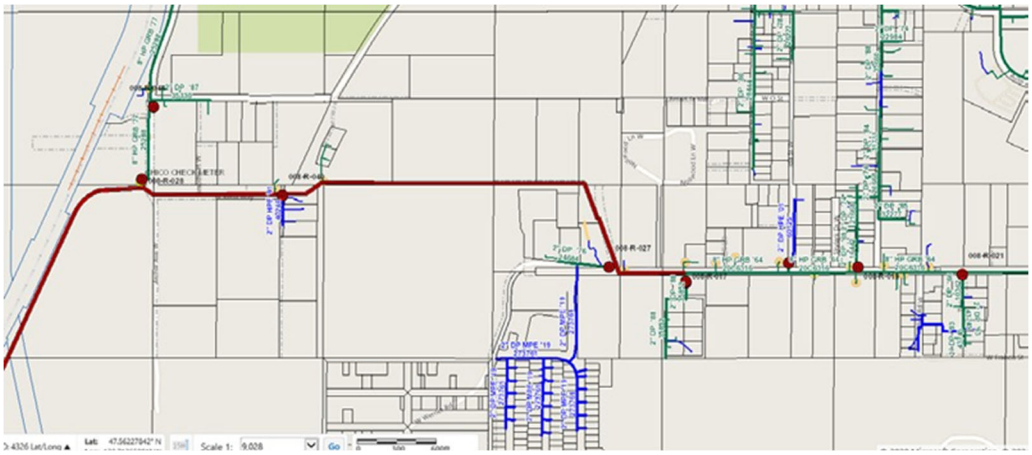
A. The total cost of the project was $402,969, as detailed in Exh. PCD-2.

H. Bremerton Reg Station Project

Q. Please describe the Bremerton Reg Station Project.

A. The gas distribution system along Werner Road in Bremerton, Washington had several regulator stations of various sizes. Some of these stations were located in vaults, and some had a leak history. The stations in question also did not operate at the same pressure, which prevented these systems from being looped or further reinforced. This project installed a single large regulator station in the area of the existing R-038. The project location is shown on the map below in Figure 18.

Figure 18. Bremerton Reg Station Project



Q. Why did the Company undertake the Bremerton Reg Station Project?

A. The new station was sized to accommodate the loads currently spread out through the following stations: R-021, R-019, R-119, R-038, and R-027. Installing one larger-capacity regulator station and eliminating multiple small regulator stations reduces maintenance costs and improves overall system reliability.

Q. How will this project benefit customers?

A. This new station replaces five smaller stations, thereby increasing the safety and reliability of the gas distribution system in this area. Additionally, migrating the distribution system to a single operating pressure will allow for other pipeline reinforcement opportunities in the future. While all these smaller stations operate at different pressures, these systems cannot be looped or supplied by other nearby pipelines, providing the necessary back feed to ensure reliability of the system. The new above-ground station will also increase system capacity, allowing for gas service to be offered to new growth occurring in this area.

Q. Did the Company consider alternative ways to meet the need for this project?

A. The Company determined that no alternatives adequately addressed the maintenance difficulties with the regulator stations in vaults and leak hazards or continued to provide the capacity needs for the City of Bremerton that this one regulator station provides. In addition, it is more cost effective to install one larger regulator station than to replace five smaller regulator stations.

Q. What was the timing of the Bremerton Reg Station Project?

A. The Bremerton Reg Station Project was placed in service on November 12, 2020.

Q. What was the cost of the Bremerton Reg Station Project?

A. The total actual costs was $134,782, as detailed in Exh. PCD-2.

I. <u>Kennewick Odorizer Project</u>

Q. Please describe the Kennewick Odorizer Project.

A. This project included replacing the existing vintage odorizer with an updated injection odorizer. The existing pad, inlet, and injection points can be reused. The overall project area is shown on the map below.

Figure 19. Kennewick Odorizer Project 7

Q. Why did the Company undertake the Kennewick Odorizer Project?

A. The existing odorizer located at the Kennewick gate station was an old Wilroy injection-style odorizer. This style of odorizer is no longer supported because the manufacturer no longer exists, and became increasingly difficult to find replacement parts. The site gauge for the existing odorizer no longer worked, and therefore it was hard to determine how much odorant has been used or was in the tank for fill-ups.

Q. How will this project benefit customers?

A. This project mitigates the risk of Cascade being unable to repair or maintain the aging, unsupported odorizer to the gate station. Installing a new odorizer at this station that has a working site gauge enables Cascade to accurately track odorant usage, will help safely fill the odorant tank without overfilling or underfilling, and will prevent the risk of running the tank dry and leaving the pipeline unodorized.

Q. Did the Company consider alternative ways to meet the need for this project?

A. The Company determined that no alternatives adequately addressed the pipeline-safety risk or met the odorizing needs for the Kennewick distribution system as the new odorizer does.

Q. What was the timing of the Kennewick Odorizer Project?

A. The project was placed in service on November 20, 2020.

Q. What was the cost of the Kennewick Odorizer Project?

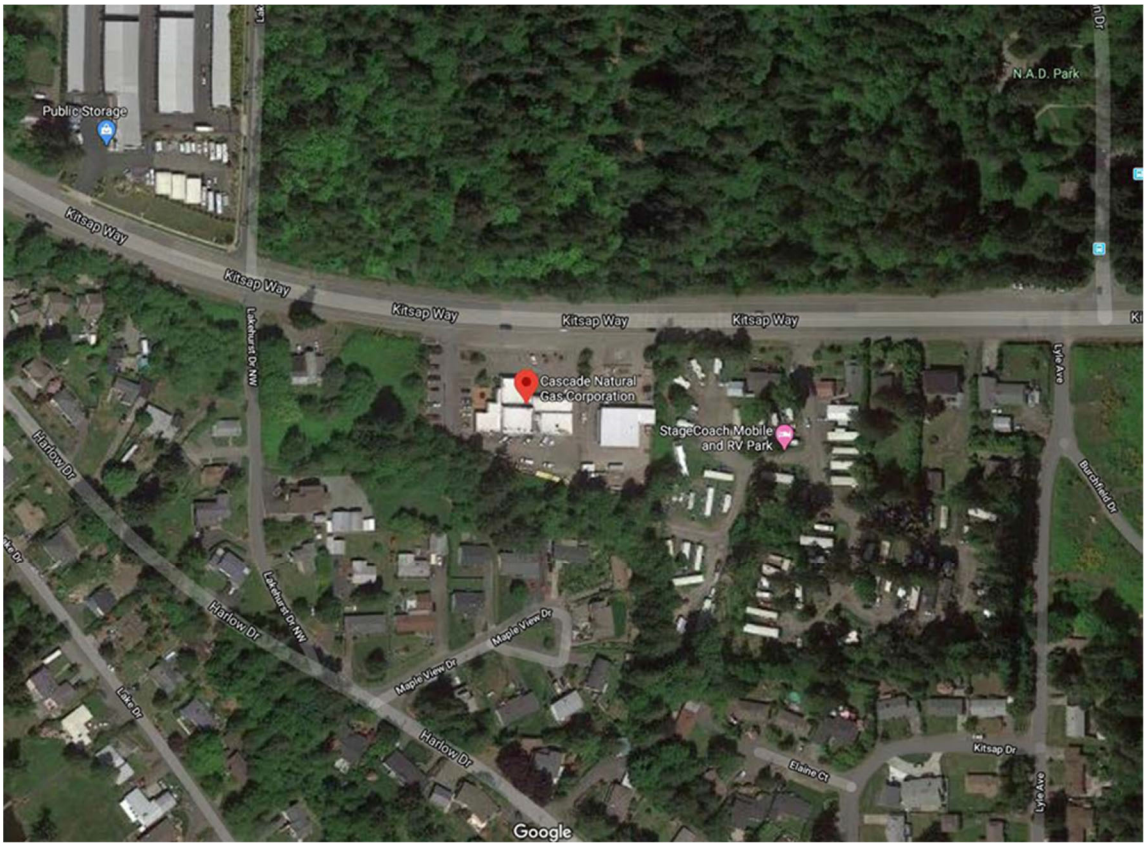
A. The total actual cost was $156,796.

J. Bremerton Office Project

Q. Please describe the Bremerton Office Project.

A. This project involved remodeling the existing Bremerton District office. The address of the Bremerton District office is 6313 Kitsap Way, Bremerton, Washington. The overall project area is shown on the map below in Figure 20.

Figure 20. Bremerton Office Project



Q. Why did the Company undertake the Bremerton Office Project?

A. Before the project, there was not enough space or offices to accommodate the number of Bremerton District employees on staff. The office space also needed to be reconfigured to improve space usage and efficiency for the Bremerton District Operations.

Q. How will this project benefit customers?

A. The remodeled office space provides a safer work environment for Cascade's Bremerton Employees and increases the efficiency of the office staff with an updated design and larger workspace.

Q. Did the Company consider alternative ways to meet the need for this project?

A. The Company determined that no alternatives adequately addressed the office needs for the Bremerton District employees that this minor remodel provides. Relocating or purchasing new property were less cost-effective means of improving the current office conditions.

Q. What was the timing of the Bremerton Office Project?

A. The Bremerton Office Project was placed in service on December 21, 2020.

Q. What was the cost of the Bremerton Office Project?

A. The total actual cost was $781,146.

V. OTHER MAJOR CAPITAL PROJECTS

Q. Please provide a brief update of the major capital projects that were discussed in the 2020 GRC, but that are not included for recovery in this case?

A. In its 2020 general rate case, Docket UG-200568, Cascade proposed recovery for three major capital investments that were expected to be placed in service by 2020. However, due to delays, two were not in service in 2020, and one has been cancelled. Therefore, Cascade is not including them for recovery in this case. The status of these projects are discussed in more detail below.

1. **Aberdeen 8" HP Reinforcement ("Aberdeen 6" HP Project")**. The Aberdeen 8" HP Project includes installing approximately 2.8 miles of 8" HP steel pipe that will provide a second feed to the City of Aberdeen. This project will increase capacity of the Aberdeen system to meet current winter capacity constraints and enable future expansion near the Aberdeen

Port. This is a multi-year project that was started in 2018 and was initially expected to be in service by July 2020. In its 2020 rate proceeding, UG-200568, Cascade updated the Commission on the timing of this project, explaining that the Company was delaying completion until 2021 to reduce the 2020 capital budget considering the ongoing COVID-19 pandemic. The project is estimated for completion in September 2022. The estimated cost of the project is still $4,257,740.

2. **Mount Vernon Regulator Station Relocation ("Mount Vernon Reg Station Project")**. The Mount Vernon Reg Station Project includes replacement and relocation of two existing pressure regulation stations and metering equipment in Anacortes, Washington. The replacement of these stations is necessary due to equipment maintenance issues, accessibility of the stations, and the existing facilities being undersized for the increased load in the area. Design for the project is underway, and construction was expected to begin in late summer 2020 with the project complete in late fall 2020. The project was delayed until 2021, however, because the Company was unable to secure the necessary easements. The project is estimated for completion in November 2021. The total estimated cost of the project is still $352,513.

3. **Richland Odorizer Replacement ("Richland Odorizer Project")**. The Richland Odorizer Project anticipated replacing a vintage odorizer with obsolete parts with a new odorizer that performs correctly and can be

safely maintained. This funding project has been cancelled; instead a subsequent project is replacing this funding project within its scope.

VI. BLANKET FUNDING PROJECTS

Q. Please describe the Company's use of "blanket" funding for capital projects.

A. Blanket funding is used for certain types of capital work that historically occurs every year but is not specifically known at the time of budgeting. Examples of blanket funding projects include: 1) replacement of regulator stations due to location, damage or capacity; 2) new regulator stations due to growth; and 3) distribution pipe replacement projects in city, state or county roadways due to road widening projects. Replacement of pipe in roadways is heavily dependent upon funding from various state and federal agencies, and it is not known what projects may be required or how much funding will be available from these agencies at the time the Company creates its capital budget.

For blanket funding, work orders that are estimated at less than $100,000 are created within a Funding Project. Work orders greater than $100,000 require their own Funding Project number.

Q. How does the Company budget for blanket funding?

A. The Company reviews certain types of capital work that historically occur each year in each state and also communicates with local governing agencies to help determine what projects are planned and/or scheduled locally. The Company then estimates a reasonable budget cost for each state based on current known or scheduled work and historical average annual costs.

Q. In total, how much of the Company's Washington capital budget is attributable to blanket funding projects?

A. Out of the Company's Washington capital budget of $96.2 million, approximately $33.1 million is attributable to blanket funding projects.

Q. What is the total amount the Company spent on blanket funding projects during the test year?

A. The Company spent $33,067,806 on gas meters, regulator station, services, and mains that represent growth, replacement, and reinforce blanket funding projects.

VII. CUSTOMER CARE AND BILLING SYSTEM UPGRADE

Q. Please describe the Company's Customer Care and Billing System Upgrade ("CC&B Upgrade").

A. The MDU Resources Utility Group was running Oracle's Customer Care & Billing ("CC&B") version 2.4 as its Customer Information and Billing System. This project involved upgrading the CC&B to a newer version, v2.6. This was primarily a technical upgrade to the base architecture of CC&B.

Q. Why did the Company perform the CC&B Upgrade?

A. Cascade's prior version of CC&B was written in COBOL, which is an outdated application development language. The majority of our custom modules were also written in COBOL when CC&B was implemented. We converted these modules into Java, which is a modern high-level programming language that is primarily used for creating web-based applications. The newer version of CC&B will only support Java modifications, and therefore the Company needed to convert its COBOL custom modifications to the

Java platform. This was accomplished as an "In-place upgrade," which means Cascade deployed the new code into the existing environment while testing it in both v2.4 and v2.6 environments, thus greatly reducing the time it took to do the actual CC&B version changes. In addition to the code changes, the Company re-configured all the billing rates in the system since v2.6 introduced a new rate engine methodology.

Q. Did the Company consider alternatives to the CC&B Upgrade?

A. The Company determined that there were no other options available unless it no longer wished to stay current with the vendor's upgrade cycle. As a result, Cascade decided to pursue the upgrade to keep current with the vendor's version releases in order to take advantage of new features and functions, continued vendor technical support, and, more importantly, vendor security patch management.

Q. How will customers benefit from the CC&B Upgrade?

A. Customer benefits will include continual access to future enhancements, improved performance, continual vendor support and security patches that protect their personally identifiable information data.

Q. What is the total cost for the CC&B Upgrade?

A. On a Washington-allocated basis, the total cost of the CC&B Upgrade was $730,309.

Q. What was the timing for the CC&B Upgrade?

A. The upgrade went into production on December 31, 2020.

Q. Does this conclude your direct testimony?

A. Yes, it does.