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ATTACHMENTS

I. Overview of 2021 Pipeline System Integrity Adjustment ("PSIA") Initiatives

Public Service Company of Colorado's ("Public Service" or the "Company") PSIA is a rider established to give the Company accelerated cost recovery for work completed to comply with federal regulations governing the safety and integrity of natural gas pipeline systems. In 2021, the Company will undertake work falling within the following initiatives:

- Transmission Integrity Management Program ("TIMP"); and
- Distribution Integrity Management Program ("DIMP").

The Accelerated Main Replacement Program ("AMRP") Project falls under DIMP.

It is important to understand the Company's integrity management efforts in light of the applicable federal rules. These rules make clear that each individual pipeline operator is responsible for discovering and evaluating the risks on their own systems and for addressing those risks in a proactive manner. The foundation of an effective integrity management program consists of compliance with three directives:

1. Know your assets – materials, construction techniques, manufacturing information, asset health and conditions, *etc.*;
2. Identify the risks and threats to those assets; and
3. Be proactive in mitigating those threats.

Consistent with this mandate, the entire gas industry has transitioned from a historically reactive mode to a much more proactive mode. A successful progression to "best in class" status requires comprehensive system-wide compliance with the three fundamental directives mentioned above: know your assets; identify the threats and risks to those assets; and proactively mitigate those threats.

A. Integrity Management Planning

The Company stresses that federal requirements and the three directives cited above cannot and should not be pursued sequentially, but rather pursued continuously and simultaneously. At the same time the Company is gathering data on its assets, we must also actively assess the risks and threats to the assets for which data is available (*e.g.*, TIMP and DIMP assessments). Moreover, the Company must take steps to mitigate risks through repairs or renewals based on the knowledge it has gained to date and the results of its ongoing assessments.

One significant challenge in the Integrity Management Planning ("IMP") process is that the Company's plans must ensure that all specific federal requirements are satisfied. One such example is the TIMP requirements regarding the scope and timing of initial and subsequent assessments. This creates the need to plan initial assessments at the same time as developing subsequent assessment plans for assets that have been assessed.

A second major challenge is the timing and prioritization of both internal and external resources. Resource allocation must be such to provide the best value to customers in terms of safety and cost. This resource allocation, in turn, requires considerable analysis and judgment. The result is some projects are completed within a short period, while others must be completed over many years. Further, it is not cost-effective or practical to complete all the projects included under the PSIA during the course of one year. For the long-term projects, the Company develops schedules or milestones to ensure the ultimate goal is accomplished.

Additionally, not all of the projects under the PSIA lend themselves to finite completion dates. For example, TIMP pipeline assessments and the mitigation of identified risks represent an ongoing obligation. Pipeline and Hazardous Materials Safety Administration ("PHMSA") regulations require pipeline operators to reassess transmission lines on a frequency not exceeding every seven years.

A third major challenge is that the plans must be flexible enough to account for uncertainties and new developments. The litmus test of effective planning is not whether the activities are executed as forecasted, but whether the plans were based on the best information known at the time and were flexible enough to adapt successfully to unforeseen changes. As new information becomes available (*i.e.*, know your assets), the short-term and long-term plans should be modified to capture this knowledge.

For example, the Company's assessments, repairs and renewals must be coordinated with the communities in which the work occurs. This might include other planned utility work or street reconstruction or paving activities. When scheduling and executing projects in the field, the Company strives to minimize impacts on the affected communities; however, the requirements of local governmental bodies might change the scope, cost, and/or timing of various projects.

A variety of factors impact resource needs in any given year. While the Company uses its experience to forecast potential repairs and replacements, the results of the assessments themselves will drive the amount of repair and renewal work during the year. In addition, unforeseen weather and natural disasters, such as the 2013 floods or various wildfires, will also affect our ability to complete planned integrity work.

Another fundamental uncertainty is emerging or pending regulations. Such changes, particularly if they entail the completion of specific activities by certain dates, will usually require the Company to modify its long-term plans. The Company regularly reviews communications received from PHMSA in the form of advisory bulletins published in the Federal Register and considers this information when stepping through the phases of "know your system, identify threats and proactively mitigate risks."

Contained within 49 C.F.R. § 192 is Subpart O, Gas Transmission Pipeline Integrity Management regulations, and Subpart P, Gas Distribution Pipeline Integrity Management regulations, both of which contain rules for integrity management programs. Operators are expected to take prudent measures to know their assets, identify the risks and threats to their assets, and be proactive in mitigating those risks and threats.

The Company considers all of these challenges when developing its plan, including relative risk assessments, known or anticipated federal regulations, resource availability, and the requirements or preferences of local communities. We modify the plans during the year in response to the circumstances described above.

To this end, in March of 2016, "PHMSA" issued a Notice of Proposed Rulemaking ("NPRM") under Docket No. PHMSA-2011-0023. This NPRM proposes to revise the Pipeline Safety Regulations applicable to the safety of onshore gas transmission and gathering pipelines. PHMSA proposes changes to the integrity management ("IM") requirements as well as changes to non-IM requirements. The original NPRM was originally published as one rule in 2016 and was later split into three separate rules. The first of the three rules was published on October 1, 2019. The focus of the first rule is records retention, material verification, MAOP reconfirmation and integrity assessments outside of HCAs. The rule carries progressive effective dates, the first of which was July 1, 2020 but was extended to December 31, 2020 due to the impacts of COVID-19. The Company is in the process of completing work necessary to comply with the December 31, 2020 deadline. The second rule is scheduled to be published in 2020 and the third rule, which addresses expansion of regulated gas gathering pipelines is expected in 2021.

B. 2021 PSIA Budgets and Revenue Requirements

In the "Settlement Agreement on the Extension of the Pipeline System Integrity Adjustment" ("PSIA Settlement") approved by Decision No. C18-0983 issued in Proceeding No. 18A-0422G, the estimated spend on 2021 projects was $148.9 million, stated in 2018 dollars and without escalation. After accounting for 2021 escalation costs of 2.5 percent, 2021 projected spend of $152.6 million is presented within this filing.[1]

As discussed later in this Exhibit, on February 5, 2020, the Company filed a combined Phase I and Phase II rate case in Proceeding No. 20AL-0049G ("2020 Gas Rate Case"). That case was resolved through an approved Unopposed and Comprehensive Stipulation and Settlement Agreement ("2020 Gas Rate Case Settlement"), which contained several provisions affecting the PSIA, as well as this particular filing. Specifically, the rider calculation does not at this point include the approved transfer of certain PSIA projects in base rates to the PSIA ("PSIA Projects Base Amount")[2] or the transfer of certain PSIA project costs to base rates. These adjustments will be made as part of the agreed March 15, 2021 filing, to be effective April 1, 2021. Supporting workpapers for calculation of the PSIA rate will be included with that filing. As agreed by the settling parties as part of the 2020 Gas Rate Case Settlement:[3]

> The Company will adjust the PSIA and base rates simultaneously to transfer the aforementioned PSIA projects from the PSIA to base rates and move the PSIA Projects Base Amount to the PSIA, to ensure no double-recovery in the PSIA or

[1] See PSIA Settlement at Section IV.A and C, and PSIA Settlement Attachment A. Escalation costs for AMRP and DIMP initiatives are included within the Programmatic Pipe Replacement Program ("PPRP") Vintage Steel Project and escalation costs for TIMP initiatives are presented within the Maximum Allowable Operating Pressure ("MAOP") Project.
[2] The PSIA Projects Base Amount is $4,263,980
[3] 2020 Gas Rate Case Settlement at p. 11, Section III.D

base rates. These adjustments to the PSIA and base rates will occur at the time the base rate change is implemented on customer bills on April 1, 2021 under the agreed alternative rate implementation.

As discussed in the accompanying Advice Letter, the instant filing does, however, incorporate the new return on equity ("ROE") of 9.20 percent and depreciation rates, as well as estimated additional PSIA project spend for 2021.

Consistent with the foregoing, the 2021 PSIA Revenue requirement is $104,344,872. The 2021 PSIA Revenue Requirement reflects the difference between the total projected 2021 Pipeline System Integrity Costs of $120,016,557 and net adjustments in the amount of ($11,407,705), less the amount collected through Base Rates, as summarized below:

DIMP - AMRP		$28,843,901
DIMP		$40,844,191
TIMP		$39,247,941
West Main Replacement		$11,080,523
Total 2021 PSIA Costs		$120,016,557
Plus: 2019 Revenue Requirement True-Up Amount		($1,441,845)
Plus: 2019 Revenue True-Up Amount		($9,015,527)
Plus: Interest on 2019 Revenue True-Up		($950,333)
Total 2021 PSIA Amount		$108,608,852
Less: PSIA Projects Base Amount		($4,263,980)
Net 2021 Revenue Requirements in PSIA		$104,344,872

II. Key PSIA Changes Since November 2019 Filing

The purpose of this section is to discuss key PSIA changes since the last November PSIA filing resulting from proceedings before the Commission. Thus, PSIA history prior to November 2019 will not be reiterated here. In addition to incorporating the discussion contained in Section I.B. above, the Company provides herein additional information regarding the 2020 Gas Rate Case as relevant to the PSIA, information regarding the PSIA intervention filed by Staff on April 27, 2020 regarding 2019 PSIA spend and additional information included in this November filing.

2020 Gas Rate Case. As mentioned above, the 2020 Gas Rate Case was filed on February 5, 2020. As relevant to the PSIA, the Company proposed to include PSIA projects in the cost of service to the extent the PSIA projects were completed and in-service as of December 31, 2018 and have been through a prudence review under the annual PSIA report, consistent with the settlement agreement extending the PSIA approved by Decision No. C18-0983 in Proceeding No. 18A-0422G. The Company also proposed to, at the same time, transfer the PSIA Projects Base

Amount to the PSIA. In the 2020 Gas Rate Case Settlement, the parties agreed to these proposals, and also agreed that effective April 1, 2021, the Company will adjust the PSIA and base rates simultaneously to transfer the foregoing PSIA projects from the PSIA to base rates and to move the PSIA Projects Base Amount to the PSIA, to ensure no double-recovery in the PSIA or base rates. Thus, under the agreed alternative rate implementation, the PSIA rates will change again on April 1, 2021, through the March 15, 2021 compliance advice letter filing required by the 2020 Gas Rate Case Settlement.[4] In addition, the parties agreed that any true-up to the 2020 PSIA from the November 1, 2020 rate effective date through the end of 2020 will be captured and implemented in conjunction with the annual PSIA rider true-up process, which will separately be filed on April 1, 2021.[5]

As a consequence of the 2020 Gas Rate Case Settlement, certain PSIA tariff language changes have been implemented effective November 1, 2020,[6] and others will be implemented effective April 1, 2021, again through the March 15, 2021 compliance advice letter filing.

Staff 2019 Spend Intervention and Additional Included Information. On April 27, 2020, Staff filed an intervention in Proceeding No. 18AL-0803G regarding Public Service's 2019 PSIA Actuals Report ("2019 Actuals Report"). Staff and the Company resolved the issues raised by Staff, as reflected in the Notice filed in that proceeding by Staff and the Company on July 30, 2020.[7]

Pursuant to the Notice, the Company agreed to include additional information in its future annual November PSIA advice letter filings. Specifically, the Company agreed to include, in Exhibit 4, Attachment A to that filing, the stage gate status and description of each gate[8] for individual projects in the following Project categories, based on the financial forecast used to develop the filing:

- DIMP - Distribution Valve Replacement Program;
- TIMP - Automatic Shutoff Valve/Remote Control Valve (ASV/RCV) Valve Set Installation Project;
- TIMP - Maximum Allowable Operating Pressure ("MAOP") Validation Project;
- DIMP – Programmatic Pipe Risk-Based Replacement Program (previously defined as PPRP) - Coupled IP only; and
- DIMP – PPRP – Vintage Steel – Leadville project only.

The required information is included in Exhibit 4 Attachment A of this filing, including a description of each stage gate.

[4] *Id. See also* Decision No. R20-0673 at ¶¶54-55.
[5] Decision No. R20-0673 at ¶56.
[6] Proceeding No. 20AL-0431G.
[7] *See* the *Joint Status Report in Compliance with Decision No. R20-0525-I, Notice of Resolution, Withdrawal of Protest and Motion to Vacate Remaining Deadlines* filed on July 30, 2020 in Proceeding No. 18AL-0803G (the "Notice").
[8] There are multiple stage gates in a project's lifecycle where the project's scope of work, estimate and schedule, among other things, are evaluated.

The Company also notes that it is including in this filing, as part of Exhibit 2, a 2021 Forecasted Roll Forward demonstrating the path through which capital expenditures become plant additions.

III. Five Year Business Plan (2021-2025)

The continued goal of the PSIA is to ensure safety of the public and our employees in a cost-effective manner. This goal is best achieved by not only following the directives contained in the Code of Federal Regulations for TIMP and DIMP, but also by continuously improving our knowledge of the system. These fundamental elements were considered when developing the five-year business plan and estimating capital expenditures over that time horizon. Although the current PSIA extends through 2021, the five-year business plan summarizes the Company's anticipated project completion and capital expenditure levels (in escalated 2018 dollars) through 2025, consistent with the requirements of the 2018 Settlement. The five-year business plan is contained in Attachment D to this Exhibit, which provides preliminary information on planned activities for the next five years. The business plan itself, the projects included, and the actual timeline for execution of projects in the five-year plan, are subject to change.

The following sections provide a high-level overview of the five-year business plan for each current PSIA initiative. This includes discussion of scope, timelines, summary of future planned activities, key changes since the last filing, and code references at an initiative or Project level. Attachment A to this Exhibit contains more detailed information on the work scope for the 2021 PSIA Projects.

A. PHMSA Transmission Rule

As discussed earlier, a review of the first of the three new PHMSA Gas Transmission and Gathering Pipeline final rules, published October 1, 2019, is underway. The focus of the first rule is records retention, material verification, MAOP reconfirmation and integrity assessments outside of HCAs. The rule carries progressive effective dates, the first of which was July 1, 2020 but was extended to December 31, 2020 due to the impacts of COVID-19. The Company is in the process of completing work necessary to comply with the December 31, 2020 deadline and is assessing the future impacts of the new rule.

B. PSIA Project Five Year Summary

Projects to be Completed Within Five Year Business Plan

The majority of the original DIMP and TIMP PSIA Projects reflected in the current five-year business plan found in Attachment C to this Exhibit 4 go through 2024. At this time, the following TIMP Projects, as shown on Attachment C, are expected to continue beyond 2024: Transmission Pipeline Assessments and Repairs; and Maximum Allowable Operating Pressure Project, as presented within Attachment C.

C. <u>Project Prioritization</u>

Consistent with the 2018 Settlement, as well as the Commission's final Decision in the 2015 Phase I Gas Rate Case, Proceeding No. 15AL-0135G, Public Service has "work[ed] with Commission Staff to identify guidance with regard to determining whether an integrity initiative addresses risk factors." *See* Decision No. R15-1204 at ¶124 (requirement not changed by Decision No. C16-0123 issued in Proceeding No. 15AL-0135G). The resulting risk assessment methodologies are included as Attachment E to this Exhibit 4. The previously filed risk assessment methodologies continue to be implemented in the development of PSIA business plans. However, for 2021, the model utilized for the vintage and/or problematic steel projects within the DIMP PPRP has been updated from the Optimain DS commercial software to the J-DIMP™ model in alignment with the Company's Gas Distribution Integrity Management Program. With respect to risk-ranked Projects as reflected in the referenced Attachment E, the Company has, as committed to in Proceeding No. 17AL-0771G, supplemented risk reporting by providing additional narrative.[9]

D. <u>Distribution Programs</u>

1. Accelerated Main Replacement Program

<u>Program Overview</u>
AMRP is a multi-year renewal effort focused on cast iron, bare steel, and PVC mains and the associated services. This work is conducted to address the risks associated with these vintage assets. There are currently no federal requirements that specifically mandate replacement of vintage mains. However, 49 C.F.R. §192.1007(d) requires that operators identify and implement measures to address risks.

Cast iron and bare steel are susceptible to the time-dependent threat of corrosion. Furthermore, cast iron can also "graphitize." Conversely, PVC is not exposed to corrosion threats, but has unique material characteristics causing the plastic to become more brittle over time. The increased brittleness of PVC material exposes the pipe to increased risk of brittle-like cracking when the pipe has been disturbed by tree roots or other soil movement, such as frost heave or excavations. In addition, aging glue in PVC pipe joints can disbond as it degrades increasing the risk of joint separation. While PVC main and service leak rates perform better than other material types, the brittle nature of PVC causes additional operational conditions that are unique to PVC. For example, when performing repairs or main and service connections it is difficult to work on PVC due to the brittleness and a single, small leak on an asset can become several leaks as the material fails along the pipeline. These situations typically result in higher volumes of gas released and increased risk to public safety and our field operations employees during blowing gas situations. Repairs on steel assets can commonly be mitigated with a repair clamp without impacting service to customers, while leaks on PVC assets typically require full replacement of the pipe joint(s) increasing the time to repair the leak and potential for customer outages.

[9] *See* the *Notice of Resolution of Disputed Issues and Motion to Vacate Remaining Deadlines and Prehearing Conference* filed by the Company on August 12, 2019 in Proceeding No. 17AL-0771G, at paragraph 5(b).

Program Scope

Pressure System:

Cast iron, bare steel, and PVC pipe types that are exclusively within the Company's distribution pipeline system (and operate at less than 1 psi up to 66 psi).

Pipe Materials and Vintages Included:

Cast iron and bare steel mains were some of the first pipe types installed in gas distribution systems in the early part of the 20th Century and continued to be installed through the mid-1950s. PVC was primarily installed in the 1960s and 1970s. All known cast iron main in the Company's distribution system was replaced by the end of 2014. Additional cast iron main is occasionally identified during the normal course of business and scheduled for renewal.

Overall Program Status

This program began in 2008. Through December 31, 2019, 243 miles out of a targeted 540 miles of distribution main have been completed. Progress and financial updates for the program's current year are prepared quarterly and provided to Commission Staff and the Office of Consumer Counsel.

2021 Planned Activities and Financial Information

For 2021, the Company plans to replace an additional 30.87 miles of distribution main, perform 1,719 services renewals, and complete 109 service air-tests and tie-overs. Attachment A to this Exhibit 4 provides additional detail for the planned 2021 work scope. Table III-1 below provides a 2021 AMRP financial summary.

Table III-1: AMRP Financials Overview

	Capital Expenditures	13 Month Average Plant In-Service	Revenue Requirement
2021 Estimate	$40.1 M	$319.5 M	$28.8 M

Five Year Plan

This program will continue PSIA recovery through the end of 2024, if approved. Attachment C to this Exhibit 4 provides the original PSIA annual capital expenditure forecast for that time period. Attachment D provides a preliminary list of projects planned for execution each year. The actual timeline for execution of these projects is subject to change as knowledge of our assets evolves; threats are identified; and plans are adjusted to be proactive in threat mitigation.

Key Changes Since November 2019 Filing

There are no changes at this time to the original 5-year PSIA forecast. However, the Company continues to undertake ongoing evaluation efforts related to PVC mains that may be brought forward as part of the PSIA in the future.

Code Reference

- 49 C.F.R. § 192.1007(d)
- PHMSA Advisory Bulletin ADB-07-01
  http://www.gpo.gov/fdsys/pkg/FR-2007-09-06/pdf/07-4309.pdf

distribution systems given the diversity of distribution systems and the unique threats to which they may be exposed.

The eight fundamental threats to the Company's distribution system are as follows:

- Corrosion;
- Natural Forces;
- Excavation Damage;
- Other Outside Force;
- Materials, Weld or Joint Failure;
- Equipment Failure;
- Incorrect Operation; and
- Other Threats.

Program Description

The Company's DIMP includes a variety of projects focused on advancing the primary elements of the program: know your assets, understand the risks and threats to your assets, and proactively mitigate risks. DIMP initiatives include:

- Programmatic Risk-Based Pipe Replacement Program (previously defined as PPRP), exclusive of the AMRP; and
- Distribution Valve Replacements.

Planned Activities and Financial Information

For 2021, the Company plans to continue work on the two DIMP initiatives listed above.

Table III-3 is a high-level 2021 DIMP financial summary.

Table III-3: DIMP Financials Overview

Initiative	Estimated Capital Expenditures	13 Month Average Plant in Service	Revenue Requirement
PPRP	$45.4M	-	-
Distribution Valves	$6.0M	-	-
DIMP Total	**$51.4M**	**$420.6M**	**$40.8 M**

Note: Differences in totals due to rounding.

The following sections provide a detailed five year plan for each initiative.

a. Programmatic Pipe Replacement Program

Project Summary

This replacement program includes three pipe types: Vintage Steel mains, Coupled Intermediate Pressure ("IP") mains, and Aldyl-A mains and services. The pipe segments targeted for replacement are risk-ranked based on history of leakage, pipes with issues identified in the corrosion prevention coating or cathodic protection as identified through direct assessment, and materials addressed in PHMSA advisory bulletins such as Aldyl-A and those pipes utilizing compression couplings.

Project Scope

PPRP work is targeting Vintage Steel mains, Coupled IP mains, and Aldyl-A mains and services.

Overall Program Status

Through December 31, 2019, 185.6 miles out of a targeted 334 miles had been completed, bringing the program to 56 percent complete. Progress and financial updates for the program's current year are prepared quarterly and provided to Commission Staff and the Office of Consumer Counsel.

2021 Planned Activities

For 2021, the Company estimates 18.4 additional miles of main will be replaced, approximately 1,200 services will be renewed, and approximately 221 services will be transferred. Table III-4 provides a breakdown of 2021 replacement mileage by material type.

Table III-4: 2021 PPRP Activities by Material Type

Material	Main Renewals (Miles)	Service Renewals (Each)	Service Transfers (Each)
Vintage Steel	15.7	1,200	221
Polyethylene /Aldyl A	1.6	*	*
Coupled IP	1.1	-	-

*Quantities will be based on the rate at which materials that need remediation are identified.

Table III-5 provides a 2021 PPRP financial summary.

Table III-5: PPRP Financials Overview

Project	2021 Estimated Capital Expenditures
Vintage Steel	$29.2M
Polyethylene /Aldyl A	$2.4M
Coupled IP	$13.7M
PPRP Total	**$45.4M**

Note: Differences in totals due to rounding.

Additional detail is provided in Attachment A.

Five Year Plan

PPRP work will continue through the end of 2024, except Aldyl-A renewal efforts are not currently included in the PSIA past 2021. The Company does, however, expect to continue Aldyl-A replacement work beyond 2021. Attachment C provides the PPRP program's current annual expenditure forecast for the five-year planning window under the PSIA. Attachment D provides a preliminary list of projects planned for execution each year. The actual timeline for execution of these projects is subject to change as knowledge of our assets evolves; threats and risks are identified; and plans are adjusted to be proactive in threat mitigation.

Key Changes Since November 2019 Filing

No significant changes aside from the addition of escalation dollars, as discussed earlier. The Company has included an escalation factor for AMRP and DIMP initiatives within the estimated PPRP Vintage Steel Project capital expenditures. The escalation factor is based on the Company's corporate forecast of 2.5, 2.91, 2.97, 2.99 and 2.95 percent over years 2021 through 2025.

Code Reference

- 49 C.F.R. § 192.1007(d)
- The Aldyl-A replacement program was generated following an Advisory Bulletin on brittle cracking tendencies.
- ADB-07-01: http://www.gpo.gov/fdsys/pkg/FR-2007-09-06/pdf/07-4309.pdf
- ADB-02-07: http://www.gpo.gov/fdsys/pkg/FR-2002-12-03/pdf/02-30615.pdf
- PHMSA has released advisory bulletins concerning potential risks of mechanical compression couplings.

Changes in Pipeline Capacity

Similar to AMRP, PPRP encompasses many main replacements in established metropolitan areas of Colorado. Generally, projects are like-for-like replacements with little to no impact on capacity. The standard replacement sizes discussed under AMRP, **Table III-2**, also apply to PPRP. Only one PPRP related diameter change outside of those discussed in **Table III-2** is planned for 2021 and, a one page summary is included within Attachment A. Consistent with last year, the Company will continue with the planned diameter increase on the Leadville 2021 replacement project, in order to serve demand. The incremental portion of the Leadville 2021 project cost attributed to increasing the diameter size of the pipeline, estimated at 2 percent or approximately $79,000, will be excluded from recovery through the PSIA.

Change in ROW

PPRP encompasses many main replacements in established metropolitan areas of Colorado. As such, they are generally like-for-like replacements and are normally installed adjacent to existing lines with minimal ROW impact, when possible. In 2021, one ROW change is planned and, the one page summary is included within Attachment A. The 20" Coupled IP - Brighton to York (Central 70) project is anticipated to include a ROW change due to congestion within the exiting corridor for the new 20" pipe. Therefore, a new alignment is being pursued.

One Line Diagram

PPRP is composed of many defined projects. A list of those projects for 2021 is supplied in Attachment A. In addition, an electronic map file is available for viewing upon request.

b. Distribution Valve Replacements

Project Summary

This effort to replace key distribution valves using the Company's prioritization of valves was based on an evaluation of the operating characteristics of existing valves.

Project Scope

The Project replaces existing distribution system isolation valves (maximum operation pressure ≤285 psig), providing isolation capabilities. These valves are often located in buried vaults, within the road right-of-way. New valves are typically installed adjacent to existing valves by rerouting the main around the existing valve. New valves are direct buried and accessed via valve boxes. Existing valves and vaults are abandoned in place.

Overall Project Status
Through December 31, 2019, 82 valves across 43 locations have been completed.

2021 Planned Activities
For 2021, the Company plans to replace 13 additional valves across five locations. Table III-6 provides a 2021 financial summary for the Project.

Table III-6: Distribution Valve Replacements Financials Overview

Project	Estimated Capital Expenditures
Distribution Valve Replacements	$6.0M

Additional detail is provided in Attachment A.

Five Year Plan
The Distribution Valve Replacement work will continue PSIA recovery through December 31, 2021. Attachment C provides the program's estimated annual expenditure forecast for 2021. Attachment D provides a preliminary list of projects planned for execution. This is subject to change, as is the actual timeline for execution of these projects, as knowledge of our assets evolves; threats and risks are identified; and plans are adjusted to be proactive in threat mitigation.

Key Changes Since November 2019 Filing
No significant changes.

Code Reference
49 C.F.R. § 192.1015(b)(4)

Changes in Pipeline Capacity
No change in pipeline capacity.

Change in ROW
New valves are generally located adjacent to the existing valves by rerouting the main around the existing valve. Outside of this general realignment, no significant ROW changes are planned.

One Line Diagram
Distribution Valve Replacements is composed of many defined projects. A list of those projects for 2021 is supplied in Attachment A. In addition, an electronic map file is available for viewing upon request.

E. Transmission Programs

1. Transmission Integrity Management Program

Program Overview

The Company's TIMP complies with federal regulations that prescribe how operators validate the integrity of their gas transmission and gas gathering assets, with the highest priority given to those located in HCAs. The TIMP rules incorporate elements from a national standard for managing system integrity of gas pipelines -- the American Society of Mechanical Engineers ("ASME") 31.8S. ASME 31.8S contains principles and processes for pipeline operators to follow when developing and implementing an effective integrity management program. The Company has adopted this standard, as it is consistent with the requirements of the TIMP regulations.

Program Description

TIMP initiatives generally fall within the following Project categories:

- Transmission Pipeline Assessments and Repairs;
- Maximum Allowable Operating Pressure ("MAOP") Project;
- Automatic Shut-off Valves/Remotely Controlled Valves;
- Above Ground Facility Protection;
- Shorted Casings;
- External and Internal Corrosion Control; and
- Gas Gathering.

Planned Activities and Financial Information

For 2021, the Company plans to continue work on the three TIMP initiatives listed below on Table III-8, which also provides a high-level 2021 TIMP financial summary.

Table III-7: TIMP Financials Overview

Project	Estimated Capital Expenditures	13 Month Average Plant in Service	Revenue Requirement
Pipeline Assessments and Repairs	$6.6M	-	-
MAOP	$38.9M	-	-
ASV/RCV	$15.7M	-	-
TIMP Total	**$61.2M**	**$465.7M**	**$39.2M**

Note: Differences in totals due to rounding.

The following sections provide a detailed five year plan for each initiative.

a. Pipeline Assessments and Repairs

Project Summary

This project performs health and condition assessments of transmission pipelines under 49 C.F.R. Part 192 Subpart O, "Gas Transmission Pipeline Integrity Management." The federal code requires assessment of transmission pipelines using limited approved methods including In Line Inspection ("ILI"), Pressure Testing or Direct Assessment. The requirements are further defined in the Company's TIMP manual. The federal regulation requires operators to ensure the safe operation of pipelines on a repetitive interval of no more than seven years.

The Company has selected ILI as its primary assessment methodology, as this methodology yields the most comprehensive information to address transmission system threats. However, depending on the identified threat, alternative and/or additional complimentary methodologies may also be utilized. These additional methods include, but may not be limited to, External Corrosion Direct Assessment ("ECDA") and pressure tests. The TIMP rules require the Company to apply knowledge gained from assessments to all similar pipelines within the system.

Once all applicable threats are evaluated, a pipeline is classified as having a baseline assessment. TIMP is an ongoing program, and pipelines are required to be reassessed periodically based on risk at intervals not to exceed seven years. While the initial investment incurred to make the lines accessible to ILI tools can be significant, this investment provides long-term benefits by allowing the Company to monitor changes to the health and condition of a line well into the future. In addition, ILI tool technology continues to evolve at a rapid pace, and the Company expects further benefits based on this changing technology.

The Company evaluates anomalous conditions found during the assessment, including the location, severity, nature (threat cause), and type of feature (e.g., dent or metal loss). The Company then categorizes the anomaly into an immediate condition, a one–year condition, or a monitored condition, which establishes the priority of remediation. Typical remediation measures include excavation and repair or complete removal of the anomaly, and/or reducing the operating pressure of that section of the system.

Overall Project Status

This project began in 2002 with the federal requirement to perform a baseline assessment on pipelines within HCAs by December 17, 2012. The Company met those requirements, and is now focused on re-assessing pipelines in HCAs as well as assessing the transmission system beyond HCAs.

2021 Planned Activities

In 2021, the Company plans to complete capital ILI runs on four pipelines and modify two additional pipelines to accommodate ILI. Two of the four ILI runs will be completed on lines that the Company started make piggable modifications to in 2020. The Company has also allocated funds to address additional anomalies from previous transmission integrity assessments. Table III-9 provides a 2021 financial summary for the project.

Table III-8: TIMP Assessments and Repairs Financials Overview

Project	Estimated Capital Expenditures
TIMP Assessments and Repairs	$6.6M

Attachment A provides project level detail.

Five Year Plan

This program will continue throughout the current five-year planning window. Attachment C provides the program's annual expenditure forecast for the five-year planning window. Attachment D provides a preliminary list of projects planned for execution each year. The actual timeline for execution of these projects is subject to change as knowledge of our assets evolves; threats and risks are identified; and plans are adjusted to be proactive in threat mitigation.

Key Changes Since November 2019 Filing

No significant changes.

Code Reference

49 C.F.R. § 192 Subpart O

Changes in Pipeline Capacity

No change in pipeline capacity is planned. See Attachment A.

Change in ROW

No changes proposed. See Attachment A.

One Line Diagram

The TIMP Assessments and Repairs initiative is comprised of a variety of projects and work types. Attachment A contains a list of 2021 Pipeline Assessment and Repair projects.

b. Maximum Allowable Operating Pressure Project

Project Summary:

Construction practices, pipeline material and manufacturing methods have changed over the course of decades as the Company's transmission pipelines were installed. The codes and rules around material testing, welding standards, and pipeline record keeping have also evolved. Consequently, the Company's legacy assets have varying degrees of record gaps. Some record gaps are more critical than others. For instance, records supporting the construction and maintenance of gas transmission pipelines and operating pressures are critical to the safe operation of these assets.

PHMSA Advisory Bulletin (ADB-12-06, Docket No. PHMSA-2012-0068) issued in 2012 and contained in the Federal Register, specifically addressed Verification of Records. In 2013, PHMSA outlined the Integrity Verification Process ("IVP") in draft form (PHMSA-2013-0119-0047). These documents require operators to take action as appropriate to assure that all MAOP and Maximum Operating Pressure ("MOP") are supported by records that are traceable, verifiable and complete.

Pipelines in need of remediation are prioritized for renewal or pressure tests based on a variety of factors including, but not limited to: location (e.g. consequence factors such as HCA, Class Location and moderate consequence areas), type of missing documentation, criticality to system, whether health and condition assessments have occurred on the pipeline, and vintage. Remediation options include replacement, de-rate, or pressure test and material validation.

Overall Project Status

In 2014, the MAOP project developed a new standard filing system to allow all historic files relevant to MAOP to be collected and organized. The filing system ensures the Company meets or exceeds current regulations by PHMSA to have verifiable, traceable and complete data records to establish the MAOP for all transmission facilities.

In 2015, the Company continued collecting and organizing all available MAOP records using the standard filing system. The Company also worked on developing the MAOP Validation “Build” Tool. The Build Tool leverages the standard filing system to determine the MAOP (as supported by traceable, verifiable, and complete records) or determining the remediation needs.

In 2016, the Company completed collecting and organizing all records within the filing system. The Company also completed development of the Build Tool, and began using the Build Tool to evaluate historical records. The funding for the records analysis has been removed from PSIA and moved to base rates.

In 2017, the Company continued using the Build Tool to evaluate and place historical records. A two-phase approach was adopted, to first focus on strength test records given the increased importance in the NPRM published in 2016. The first phase was completed in Q3 2017, with strength test records for all transmission lines evaluated and placed within the Company’s system of record. The second phase commenced in Q4 2017 with a focus on evaluation of material records for all transmission lines. Remediation projects continue to be identified, planned, and executed based on gaps in the historical records.

The Company is currently completing a secondary review of pressure test documentation on pipelines containing Class 3, Class 4, High Consequence Areas (“HCA”), and piggable Moderate Consequence Areas (“MCA”) in accordance with the new PHMSA Gas Transmission Pipelines Final Rule (Docket No. PHMSA–2011–0023), published in October 2019. The review of pipeline records, including pressure test documents, is a continual process and is required to be reanalyzed based on changes such as class location, high consequence areas and regulatory requirements.

2021 Planned Activities

In 2021, the Company plans to complete six pipeline remediation projects. In addition, the Company will continue to proactively initiate a limited amount of long lead design, engineering and permitting activities in preparation for 2022 construction projects. Table III-10 provides an overview of MAOP remediation activities and planned expenditures. Figure III-1 provides a spatial overview of these activities. Attachment A provides project level detail.

Table III-9: 2021 MAOP Planned Remediation Projects and Activities

Line Name	Project Miles, Diameter & Vintage	Estimated 2021 Capital Expenditures
1. Southeast Metro Project (20” Parker)	5.0 mi of 20”, 1956	$9.6M
2. 10" Mesa-Boulder Westlake to Boulder Junction	7.5 mi of 10”, 1950	$3.3M
3. 10" Mesa-Boulder Skylake VS to I-76	1.6 mi of 10”, 1950	$4.8M
4. 10" Mesa-Boulder Gaylord	4.2 mi of 10”, 1950	$5.9M
5. 3” (4”) E Hayden to Steamboat	1.2 mi of 2.5”, 1966	$0.1M
6. 6” Estes Park-A	4.2 mi of 6”, 1968	$11.8M
7. 8” Battle Mountain to Minturn	0.5 mi of 8”, 1986	$2.7M
8. 6” Fort Lupton Elec Trans	1.1 mi of 6”, 1971	$0.1M
Pre-Engineering for 2022 Projects		$0.6M
	Total	**$38.9M**

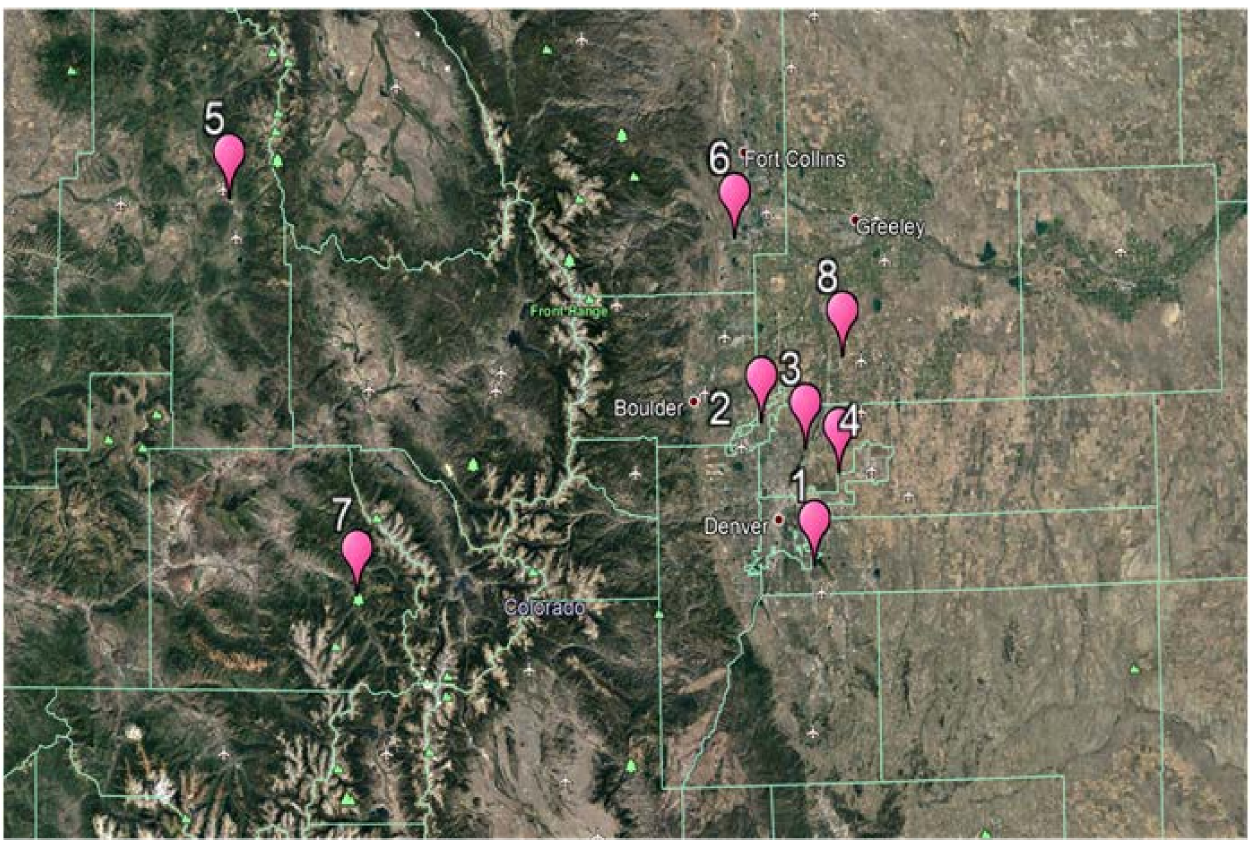

Figure III-1: MAOP Projects by Location

Five Year Plan

The program will continue throughout the current five-year planning window. The overall scope, schedule, and budget for the MAOP remediation is being reevaluated based on the recent federal regulatory code changes that were released by PHMSA October 1, 2019. The exact code requirements have now been established and there is more clarity around the required methods and historical documentation necessary for the reconfirmation of MAOP on pipelines lacking traceable, verifiable, and complete documentation. The code changes related to MAOP reconfirmation are effective as of July 1, 2020 but was extended to December 31, 2020 due to the impacts of COVID-19. The Company is currently completing a secondary review of pressure test documentation on pipelines containing Class 3, Class 4, High Consequence Areas ("HCA"), and piggable Moderate Consequence Areas ("MCA") in accordance with the new PHMSA Gas Transmission Pipelines Final Rule (Docket No. PHMSA–2011–0023). As such, a list of transmission lines identified to date as not having traceable, verifiable, and complete records is in progress and not included in Attachment D. Ongoing assessments will focus on the development of remediation strategies for these lines. Current assessments indicate the program may take 10-15 years to complete.

Key Changes Since November 2019 Filing

No significant changes aside from the addition of escalation dollars, as discussed earlier. The Company has included an escalation factor for TIMP initiatives within the MAOP Project capital expenditures. The escalation factor is based on the Company's Corporate forecast of 2.5, 2.91, 2.97, 2.99 and 2.95 percent over years 2021 through 2025.

Code Reference

- 49 C.F.R. § 192.619
- Advisory Bulletin (ADB-12-06, Docket No. PHMSA-2012-0068)
- IVP PHMSA-2013-0119-0047
- Docket No. PHMSA-2011-0023 Amdt. Nos. 191-26192-125

https://www.federalregister.gov/documents/2019/10/01/2019-20306/pipeline-safety-safety-of-gas-transmission-pipelines-maop-reconfirmation-expansion-of-assessment

Changes in Pipeline Capacity

In 2021, one change in pipeline capacity is planned and the respective one page summary is included within Attachment A. The 3" (4") E Hayden to Steamboat project includes replacement of 2 ½" with 4". The pipeline to be replaced is 2.5" which is not a common main size. In order to maintain capacity to the area, a 4" pipeline will be required to be installed. See Attachment A.

Change in ROW

No change in ROW is planned. See Attachment A.

One Line Diagram

See Attachment A.

c. Automatic Shut-off Valves/Remotely Controlled Valves

Project Summary

The goal of the ASV/RCV Project is to install actuation and controls on existing mainline valves, allowing faster shut down in the event of an unplanned gas release from gas transmission pipelines. The Company has been installing this type of equipment on various transmission pipelines to address existing TIMP requirements, which require the installation of ASV/RCV at locations where the valves provide an efficient means of adding protection in the event of an unplanned gas release, as well as in anticipation of potential new federal requirements.

49 C.F.R. § 192.935(c) requires each Company to perform a risk analysis considering the following criteria to determine if adding an ASV or RCV would be an efficient means of adding protection to a high consequence area in the event of a gas release:

- Swiftness of leak detection and pipe shutdown capabilities;
- Type of gas being transported;
- Operating pressure;
- Rate of potential release;
- Pipeline profile;
- Potential for ignition; and
- Location of nearest response personnel.

Subject matter experts worked with the Company's Quantitative Risk Services Department to identify and rank the identified sites. Further site-specific information was considered, including whether a pipeline was scheduled for replacement in the near future.

Section 4 of the 2011 Pipeline Safety Act (49 U.S.C. § 60102(n)) calls for the Secretary of the Department of Transportation ("DOT") to require by regulation the use of automatic or remotely controlled shutoff valves, or equivalent technology, where it is economically, technically, and operationally feasible. On February 6, 2020 PHMSA issued the Notice of Proposed Rulemaking (NPRM) to meet a congressional mandate calling for the installation of remote-control valves (RCV), automatic shutoff valves (ASV). The NPRM primarily proposes the installation of ASV/RCV on all newly constructed or entirely replaced pipelines that are greater-than-or-equal-to 6 inches in nominal diameter in high consequence areas (HCAs) or Class 3 or Class 4 locations or per the transmission valve spacing requirements listing in 192.179. The term ''entirely replaced'' is defined as when 2 or more contiguous miles are being replaced with new pipe. The proposed regulations are designed to identify ruptures on transmission pipelines more quickly and to reduce the response time to isolate the rupture segment in an effort to minimize potentially adverse safety or environmental concerns.

Overall Project Status

Based on current federal code requirements, 315 valves at 105 locations have been identified for install of actuation and controls. The number of valves to be converted at each respective valve set is assumed to be one until constructability visits are completed and the actual number and size is determined. Therefore, the forecasted number of valves is approximate. Through December 31, 2019, 217 valve projects were complete, bringing the project to 69 percent complete. Progress and financial updates for the program's current year are prepared quarterly and provided to Commission Staff and the Office of Consumer Counsel.

2021 Planned Activities

In 2021, the Company plans to complete 50 valve replacements across 19 locations. Table III- provides a 2020 financial summary for the project.

Table III-11: ASV/RCV Financials Overview

Project	Estimated Capital Expenditures
ASV/RCV	$15.7M

Attachment A provides project level detail.

Five Year Plan

The program will continue through the end of 2022. Attachment C provides the program's annual expenditure forecast for the five-year planning window. Attachment D provides a preliminary list of projects planned for execution each year. This is subject to change, as is the actual timeline for execution of these projects, as knowledge of our assets evolves; threats and risks are identified; and plans are adjusted to be proactive in threat mitigation.

Key Changes Since November 2019 Filing

No significant changes.

Code Reference

- 49 C.F.R. § 192.935(c)
- Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011, Section 4, codified at 49 U.S.C. § 60102(n)

Changes in Pipeline Capacity

No change in pipeline capacity is planned.

Change in ROW

One thousand linear feet of permanent pipeline easement is required for the Quincy Crossover VS and Mississippi & Chambers VS projects.

One Line Diagram

ASV/RCV is composed of many defined projects. A list of those projects for 2021 is supplied in Attachment A.