414 Nicollet Mall
Minneapolis, MN 55401

October 29, 2021

—Via Electronic Filing—

Will Seuffert
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101

RE: GAS UTILITY INFRASTRUCTURE COST RIDER
TRUE-UP REPORT FOR 2020, UPDATED COSTS FOR 2021,
REVENUE REQUIREMENTS FOR 2022, AND REVISED ADJUSTMENT FACTORS
DOCKET NO. G002/M-21-____

Dear Mr. Seuffert:

Northern States Power Company, doing business as Xcel Energy, submits the enclosed Annual Report and Petition for approval of recovery of updated gas utility infrastructure costs (GUIC) through the GUIC Rider for 2022.

Pursuant to Minn. Stat. § 216.17, subd. 3, we have electronically filed this document with the Commission, which also constitutes service on the Minnesota Department of Commerce, Division of Energy Resources and the Minnesota Office of the Attorney General, Residential Utilities Division. A copy of this filing has been served on all parties on the attached service lists.

If you have any questions regarding this filing, please contact Brandon Kirschner at (612) 215-5361 or brandon.m.kirschner@xcelenergy.com or Mary Martinka at (612) 330-6737 or mary.a.martinka@xcelenergy.com.

Sincerely,

/s/

LISA R. PETERSON
MANAGER, REGULATORY ANALYSIS

Enclosures

c: Service Lists

State of Minnesota
before the
Minnesota Public Utilities Commission

Katie Sieben	Chair
Joseph K. Sullivan	Vice-Chair
Valerie Means	Commissioner
Matthew Schuerger	Commissioner
John Tuma	Commissioner

IN THE MATTER OF THE PETITION OF NORTHERN STATES POWER COMPANY FOR APPROVAL OF A GAS UTILITY INFRASTRUCTURE COST RIDER TRUE-UP REPORT FOR 2020, UPDATED COSTS FOR 2021, REVENUE REQUIREMENTS FOR 2022, AND REVISED ADJUSTMENT FACTORS

DOCKET NO. G002/M-21-____

PETITION, COMPLIANCE FILING, AND ANNUAL REPORT

INTRODUCTION

Northern States Power Company, doing business as Xcel Energy, submits this Petition, Compliance Filing, and Annual Report to the Minnesota Public Utilities Commission (Commission) to request recovery of our 2022 Gas Utility Infrastructure Cost (GUIC) Rider revenue requirement.

For 2022, we request recovery of a GUIC Rider revenue requirement of approximately $27.3 million. This request amounts to an impact of about $3.51 per month for an average residential natural gas customer's bill. Our request includes integrity management project costs that are consistent with the eligibility requirements set forth in the GUIC statute.[1] These costs are incurred to continue important infrastructure work that promotes the safety of our natural gas system.

We are dedicated to operating a safe and reliable gas system for our customers. With aging gas infrastructure that runs primarily through high-density urban and suburban areas, it is of critical importance that the Company invests in assessing the integrity of our system and repairing and replacing problematic equipment. Integrity management projects address our gas infrastructure's structural integrity, facilitating efficient assessments going forward, and ensuring a safer gas system that will reduce the likelihood of incidents within the community.

[1] Minn. Stat. § 216B.1635.

To promote the continued safety and reliability of our gas system through our GUIC work, since 2015 the Company has completed the replacement of over 320 miles of high- and medium-risk, aging, corroded, and otherwise damaged gas distribution pipeline as well as the replacement of over 15,400 aging distribution service lines.

In addition to main and service replacements, the Company has completed a sewer and gas line conflict remediation program. As a part of this completed program, the Company performed over 248,000 inspections and identified and cleared over 150 conflicts. In addition, at this time we have completed all work currently needed for automatic shut-off valves and remote-controlled valves. As a part of the completed valve replacement program, we have replaced 18 valves. The result of this GUIC work is a gas infrastructure system that is safer and more reliable.

Upcoming Transmission Integrity Management Programs (TIMP) work will include continued in-line inspections (ILI), programmatic replacement and maximum allowable operating pressure (MAOP) remediations, and casing renewals. Our MAOP project includes reconfirmation work and other costs required to meet new federal requirements.[2]

Upcoming major renewal and replacement projects include the replacement of approximately 50 miles of poor performing distribution mains and 3,000 poor performing services. In addition, we will complete major replacement projects on two distribution intermediate pressure line segments—the County Road B Line from Rice Street to Hamline in Roseville and the northern portion of the Langdon Line in St. Paul Park. These replacement projects address several risk factors including external corrosion, legacy manufacturing and construction techniques, and third-party damage. Beyond main and service replacement projects, upcoming Distribution Integrity Management Programs (DIMP) work will include distribution pipeline assessments and replacements, valve replacements, and casing renewals.

The Company is planning to file a natural gas general rate case on November 1, 2021. As a part of that case, we intend to roll all GUIC costs incurred prior to December 31, 2021 into base rates at the time final rates are implemented. Overall, we expect that roll-in revenue requirement to be about $25 million.[3] We have structured this rider filing with no adjustments to account for a base rate adjustment that may result with a final Order and implementation of final rates in the natural gas rate case. Due to the anticipated length of time until final rates will be implemented at the conclusion

[2] New rule is the first of three parts of a Notice of Proposed Rulemaking issued by the Pipeline and Hazardous Materials Safety Administration in Docket No. PHMSA-2011-0023. The first part was published October 1, 2019 and carries progressive effective dates, the first of which is December 31, 2020. A greater discussion of this rule is provided in Attachment C.

[3] This amount is calculated at the approved GUIC Rider capital structure and return on equity. The amount shown in the Company's upcoming rate case filing may differ, as the revenue requirement will be based on a different capital structure and return on equity.

of the rate case, we propose to continue recovery of these projects through the GUIC Rider until final rates are implemented in the rate case. These projects will not be included in our interim rate request for the 2022 test year, so there will be no double recovery between interim rates and the GUIC Rider.

At the time of this filing, our request for recovery of the 2021 GUIC Rider revenue requirement is pending at the Commission. Our request in this docket mostly reflects positions similar to those we have taken for our 2021 GUIC Rider request. However, we modified our current proposal based on comments regarding our 2021 GUIC Rider request and additional Commission rulings made since we initially submitted our 2021 petition. For example, our 2022 GUIC Rider request excludes internal capitalized costs[4] and uses 12 months of actual sales data to calculate our initially-proposed rate factors, rather than forecast sales data as we have used in previous filings.

We expect the Commission to hear our 2021 request in Docket No. G002/M-20-799 before the conclusion of the present docket. If the resolution of our 2021 request requires any carryover into our 2022 request, we will update the latter accordingly.

The balance of this Petition is organized as follows:

- *Section I* – identification of the parties and state agencies that are being served with the filing
- *Section II* – general information that is required under the Commission's rules
- *Section III* – background of our GUIC Rider, including the applicable Minnesota State Statute, applicable standard of review, and GUIC Rider recovery as a part of our overall natural gas recovery
- *Section IV* – a summary of the planned 2022 TIMP projects
- *Section V* – a summary of the planned 2022 DIMP projects
- *Section VI* – a summary of the planned 2022 Mandated Relocation projects
- *Section VII* – demonstration that our request to recover costs through the GUIC Rider complies with the applicable standard of review and complies with previous Commission orders
- *Section VIII* – discussion of our proposed 2022 revenue requirement, rate factor calculations, timing of rate implementation, status of GUIC Rider tracker account, and proposed tariff sheet and customer notice
- *Section IX* – support for our proposed capital structure and return on equity (ROE)
- *Section X* –a summary of performance metrics

[4] Includes overheads, transportation, and other costs.

To aid the review of this filing, we provide, as Attachment A, a compliance matrix setting forth the requirements of the enabling GUIC statute and relevant Commission Orders and directing readers to the part of the filing that addresses each requirement. We also provide an index of the included attachments as Attachment B to this filing.

I. SERVICE ON OTHER PARTIES

Pursuant to Minn. R. 7829.1300, subp. 2, the Company has served a copy of this filing on the appropriate general service list, the Minnesota Department of Commerce, Division of Energy Resources (Department) and the Minnesota Office of the Attorney General, Residential Utilities Division.

II. GENERAL FILING INFORMATION

Pursuant to Minn. R. 7829.1300, subp. 3, the Company provides the following information.

A. Name, Address, and Telephone Number of Utility

Northern States Power Company, doing business as:
Xcel Energy
414 Nicollet Mall
Minneapolis, MN 55401
(612) 330-5500

B. Name, Address, and Telephone Number of Utility Attorney

Mara Ascheman
Principal Attorney
Xcel Energy
414 Nicollet Mall (401-8th Floor)
Minneapolis, MN 55401
(612) 215-4605
mara.k.ascheman@xcelenergy.com

C. Date of Filing and Proposed Effective Date

The date of this filing is October 29, 2021. The proposed effective date for the 2022 GUIC Rider factors is March 1, 2023. A one-paragraph summary is attached to this filing pursuant to Minn. R. 7829.1300, subp. 1.

D. Statutes Controlling Schedule for Processing the Filing

Minn. Stat. § 216B.1635 governs the Company's submission of a petition to recover gas infrastructure costs. The provision does not establish an explicit timing requirement for Commission action.

E. Utility Employee Responsible for Filing

Lisa R. Peterson
Manager, Regulatory Analysis
Xcel Energy
414 Nicollet Mall (401-7th Floor)
Minneapolis, MN 55401
(612) 330-7681
lisa.r.peterson@xcelenergy.com

F. Miscellaneous Information

Pursuant to Minn. R. 7829.0700, the Company requests that the following persons be placed on the Commission's official service list for this proceeding:

Mara Ascheman
Principal Attorney
Xcel Energy
414 Nicollet Mall (401-8th Floor)
Minneapolis, MN 55401
mara.k.ascheman@xcelenergy.com

Lynnette Sweet
Regulatory Records
Xcel Energy
414 Nicollet Mall (401-7th Floor)
Minneapolis, MN 55401
regulatory.records@xcelenergy.com

Any information requests in this proceeding should be submitted to the Regulatory Records email address above.

III. GUIC Rider Background

Minnesota Statute § 216B.1635 (the GUIC Statute) allows a utility to petition the Commission for the recovery of "gas utility infrastructure costs." As explained in this petition, TIMP and DIMP work makes up the majority of "gas utility infrastructure costs" we request to recovery through the GUIC Rider. The Commission has recognized that our TIMP and DIMP work is reasonable and in the public interest, noting:

> *The Commission concurs with the Department that the investments proposed for rider recovery […] meet the statutory requirements for rider recovery as gas utility infrastructure costs. These*

> *costs were incurred in the replacement or modification of existing facilities required by federal and state agencies. They were not included in Xcel's last rate case. And the costs are reasonable and prudent in view of the public safety purpose served by the TIMP and DIMP initiatives.*[5]

Recovery of costs through the GUIC Rider continues to be in the public interest, as it provides annual regulatory review of the Company's natural gas safety investments. The Commission signals continued regulatory support for investing in the safety of our natural gas system by allowing for efficient rider recovery of costs.

A. Applicable Minnesota Statutes

As mentioned above, the GUIC Statute allows a utility to petition for the recovery of "gas utility infrastructure costs." According to the GUIC statute, GUIC costs can relate to two different types of "gas utility projects"—generally speaking, (1) replacement of natural gas facilities located in the public right-of-way by the construction or improvement of a highway, road, street, public building, or other public work by or on behalf of the United States, the state of Minnesota or a political subdivision, or (2) replacement or modification of existing natural gas facilities as required by a federal or state agency. For reference, the full text of Minn. Stat. § 216B.1635 is provided as Attachment E.

The importance of safety-related cost recovery is also specifically mentioned in Minnesota's pipeline safety statutes. Minn. Stat. § 216B.16, Subd.11 states:

> *All costs of a public utility that are necessary to comply with state pipeline safety programs under sections 216D.01 to 216D.07, 299F.56 to 299F.64, or 299J.01 to 299J.17 must be recognized and included by the commission in the determination of just and reasonable rates as if the costs were directly incurred by the utility in furnishing utility service.*

As the Commission has previously recognized, the Company's TIMP and DIMP activities are precisely the type of expenditures for which Minn. Stat. § 216B.1635 authorizes recovery. With this request, the Company asks the Commission to allow continued recovery of our projected TIMP and DIMP expenses for 2022. This year, our TIMP and DIMP plans include the same programs that were included in our 2021 GUIC Rider request. The Company also requests GUIC Rider recovery of incremental mandated relocations that are necessary because of public works improvements being done by or on behalf of the municipalities in which our infrastructure is located.

[5] *See* Docket No. G002/M-15-808, ORDER REQUIRING UPDATED REPORT, APPROVING RIDER RECOVERY, AND REQUIRING METRICS TO EVALUATE GUIC EXPENDITURES at 6 (August 18, 2016).

The GUIC Statute explicitly authorizes the timely recovery of GUIC expenditures through a rider mechanism. As stated in the statute, the legal standard of review for this petition is:

> *Upon receiving a gas utility report and petition for cost recovery under subdivision 2 and assessment and verification under subdivision 4, the commission may approve the annual GUIC rate adjustments provided that, after notice and comment, the costs included for recovery through the rate schedule are prudently incurred and achieve gas facility improvements at the lowest reasonable and prudent cost to ratepayers.*[6]

The Company's revenue requirement reflects the impact of ongoing integrity management projects already approved by the Commission in previous GUIC Rider filings, as well as new requests associated with casing renewals and mandated relocations. We are not proposing any change in rate of return, and our request reflects the rate of return authorized by the Commission in our previous GUIC Rider filings.

B. GUIC Rider as a Part of Overall Gas Utility Cost Recovery

The recovery of GUIC Rider revenue requirements is a critical component in the Company's gas utility business and facilitates construction and assessment activities that help keep the gas system operating safely and efficiently. However, the total GUIC Rider revenue requirement related to integrity management project work represents only a portion of the overall gas utility recovery. At a high level, the Company's gas utility recovery can be broken down into four components. These components are:

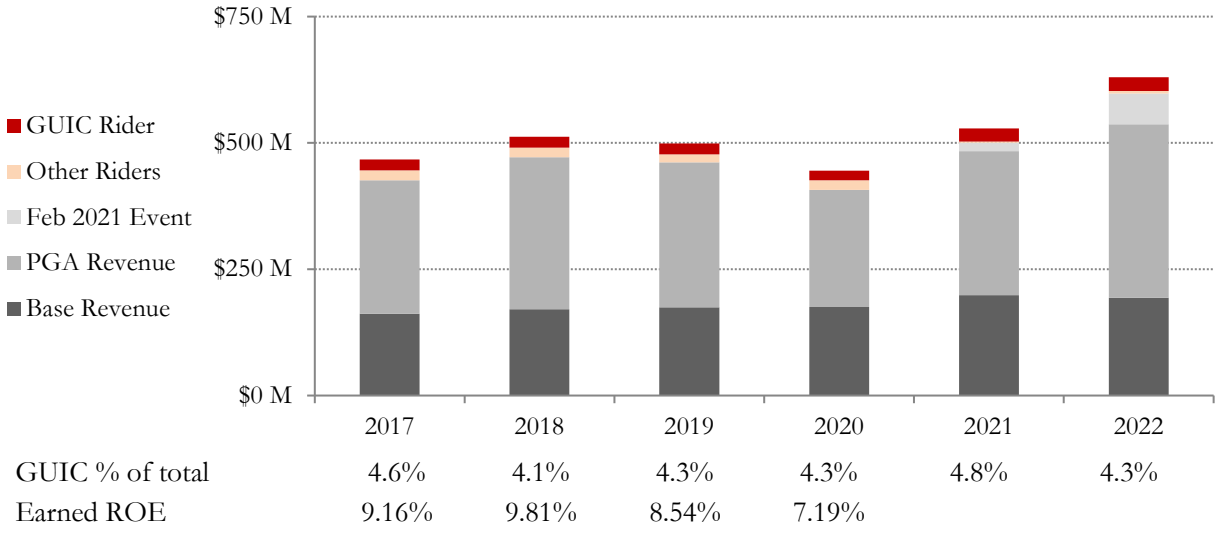
- Base rates recovery, stemming from the approved revenue requirement from the last general gas rate case,
- Fuel revenues (through the PGA and the February 2021 Event Surcharge),
- GUIC Rider annual revenue requirement,
- Other riders.

To provide context as to how the GUIC Rider fits into the Company's total gas utility recovery, Figure 1 below shows the total gas utility revenue collections by recovery mechanism.

[6] Minn. Stat. § 216B.1635 subd. 5.

Figure 1

Annual Revenue Collections by Recovery Mechanism



	2017	2018	2019	2020	2021	2022
GUIC % of total	4.6%	4.1%	4.3%	4.3%	4.8%	4.3%
Earned ROE	9.16%	9.81%	8.54%	7.19%		

The GUIC Rider represents 4.3 percent of total bill collections forecasted in 2022. In Figure 1 above, we also provide the earned ROE as reported in our jurisdictional annual reports. The reported earned ROEs include the costs and revenues across all the shown recovery methods.

IV. TIMP PROJECTS

We established our TIMP to assess and improve the safety and reliability of our gas transmission system, which includes approximately 70 miles of transmission pipeline in Minnesota. Our TIMP complies with federal regulations by identifying risks, systematically performing health and condition assessments, and evaluating and prioritizing preventative or corrective actions to mitigate identified risks and threats. Our TIMP focuses on giving the Company a comprehensive understanding of the health and condition of its gas transmission pipelines, while assigning higher priority to those located in highly populated areas.

The Company currently has three major TIMP initiatives under way:

- Transmission Pipeline Assessments,
- Programmatic Replacement and MAOP Remediation Program,
- Casing Renewals.

We also note that work on the Automatic Shut-off Valves and Remote-controlled Valves is expected to be completed by the end of 2021, and no work is planned in 2022 and beyond.

Table 1 below shows the estimated 2022 TIMP project costs.

Table 1
2022 Estimated TIMP Project Costs
($ Millions)

Program	2022 Capital[7]	2022 O&M
Transmission Pipeline Assessments	$0.6	$0.6
Programmatic Replacement / MAOP Remediation	$1.4	$0.0
Casing Renewal	$2.4	$0.0
Total 2022 TIMP Expenditures	**$4.3**	**$0.6**
Total 2022 Minnesota TIMP Revenue Requirements	**$13.9**	**$0.5**

Project descriptions, scopes of work, estimated costs and in-service dates for specific TIMP projects are provided as Attachments C, C1, and C2. We also provide a brief explanation of new federal regulations that may influence future TIMP projects. Attachment F reports the capital expenditure costs and forecasted costs for incremental TIMP activities between March 2012 and December 2026. Attachment G shows the development of 2022 revenue requirements for TIMP activities, based on the capital expenditures referenced in Attachment F.

A. Transmission Pipeline Assessments

Transmission pipeline assessments are an ongoing program, which began in 2002, to assess the health and condition of our gas transmission lines. Federal regulations require assessment of gas transmission pipelines using ILI, pressure testing, or direct assessment.[8] Regular assessment of pipelines is based on the health and condition of the assets as well as an evaluation of the risks and threats that may cause pipeline damage.

The Company has completed requirements related to High Consequence Area (HCA) Baseline Assessments,[9] and is now focusing on the re-assessment of pipelines in HCAs as well as assessing remaining transmission pipe beyond HCAs. Federal transmission rules published in 2019 require that Moderate Consequence Areas must be assessed initially by July 3, 2034 and then must be reassessed at least once every 10 years thereafter or sooner based on the risks and threats to the pipeline segment.

[7] Estimated capital costs include estimated removal costs. Details are provided in Attachment C1.
[8] The requirements are further defined in the Company's TIMP manual.
[9] Federal requirements stipulated that all pipelines in HCAs needed to be assessed by December 17, 2012. See 49 CFR Part 192.921.

These assessments provide important information about the conditions of the Company's pipelines, including the existence of internal and external corrosion and other anomalies.

When performing gas transmission line assessments, the Company conducts ILI as a first preference. There are advantages to using ILI compared to alternative assessment methods. First, the pipelines need not be taken out of service while the inspection is in process. Second, ILI provides the most comprehensive profile of the integrity of a pipeline and can assess for multiple threats. Third, ILI technology allows for assessment of longer distances with one inspection run. Other approved assessment methodologies (pressure testing or direct assessment) only assess for limited threats and are usually performed on relatively short pipe segments. After an initial capital investment to prepare a pipeline for an ILI tool, subsequent assessments will be performed using ILI as an operations and maintenance (O&M) cost.

The forecasted capital and O&M costs for assessments included in our previous GUIC Rider filings are shown in Table 2 below.

Table 2

GUIC Transmission Pipeline Assessments[10]

($ Millions)

Filing	Assessment (Miles)	Capital Expenditures	O&M Expenditures
2016 (15-808)	10.5	$4.9	$0.0
2017 (16-891)	13.7	$1.6	$1.1
2018 (17-787)	20.9	$0.3	$1.5
2019 (18-692)	15.8	$1.0	$2.9
2020 (19-664)	26.2	$3.6	$1.7
2021 (20-799)	13.5	$1.5	$1.7
2022 (21-___)	3.2	$0.6	$0.6

As shown in Table 3 below, the Company expects to complete two ILI projects and one direct assessment project in 2022.[11]

[10] Numbers in Table 2 reflect estimated mileage and expenditure amounts as shown in our original 2016 through 2021 GUIC Rider filings for each year and may differ from actual amounts due to program modifications and scope changes occurring after the initial filings.

[11] Assessments are required every seven years according to Subpart O – Gas Transmission Pipeline Integrity Management 192.939.

Table 3

Transmission Integrity Assessments[12]

	Number of Projects								
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**Total**
ILI	0	0	2	3	2	2	1	2	13
Pressure Test	2	1	0	0	0	0	0	0	3
Derate[13]	0	0	0	0	1	0	0	0	1
Direct Assessment	1	0	0	0	1	0	1	1	4
Total	3	1	2	3	4	2	3	3	21
	Assessed Mileage								
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**Total**
ILI	0.0	0.0	7.8	20.6	2.9	16.1	0.3	3.2	53.6
Pressure Test	3.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	3.2
Derate	0.0	0.0	0.0	0.0	5.8	0.0	0.0	0.0	5.8
Direct Assessment	6.5	0.0	0.0	0.0	0.4	0.0	10.3	0.01	17.2
Total	9.6	0.1	7.8	20.6	9.1	16.1	13.5	3.2	79.8

For informational purposes, we are forecasting annual costs associated with transmission pipeline assessments between $1.3 million and $1.7 million from 2023 through 2026. The costs incurred will likely be a combination of capital expenditures and O&M expenses, depending on the type of work being performed. Based on the current assessment plan, the Company expects to complete three projects each year in the 2023-2026 timeframe.

B. Programmatic Replacement and Maximum Allowable Operating Pressure Remediation

In 2017, the Company began work on the Programmatic Replacement and MAOP Remediation Program. The MAOP initiative strives to meet the requirement to have traceable, verifiable, and complete (TVC) records of a pipeline's MAOP. Through the initiative, the Company is validating existing MAOP records for our transmission pipelines and remediating any gaps in such records.[14] A new federal transmission rule

[12] 2021 and 2022 amounts are estimates based on expected work scopes. Numbers may change as actual work is completed.

[13] A derate project involves lowering the line's maximum allowable operating pressure to reduce risk and reclassify the pipeline as distribution. The project noted for 2019 was for the Eagan Line.

[14] There are approximately 300,000 miles of natural gas transmission pipelines in the United States, and a significant portion of these lines were installed prior to federal pipeline safety regulations being codified in 1970. Therefore, it is expected that there will be gaps in MAOP records.

was published on October 1, 2019. This rule is the first of three rules that originated from the Notice of Proposed Rulemaking (NPRM) published in March of 2016 under Docket No. PHMSA-2011-0023. MAOP reconfirmation is a key focus area of the rule, which provides exact code requirements regarding the timeline, methodology, applicable pipeline segments, and historical documentation necessary for MAOP reconfirmation. These PHMSA requirements regarding records are a critical safety effort.[15] We believe recent changes in the requirements necessitate the work that we have undertaken and show that the costs incurred are eligible for GUIC Rider recovery in full.

There are two multi-year MAOP replacement projects scheduled to be completed in 2022. The projects are planned for two different portions of the East County Line. Engineering work on both projects will commence in 2022, with construction occurring in 2023. We anticipate capital expenditures of $1.4 million for the 2022 work. For informational purposes, we expect future annual expenditures of about $15 to $16 million in 2023 through 2026 for this program.

C. Casing Renewals

The casing renewal project is a multi-year program which started in 2021. The objective of this project is to mitigate risks by renewing pipeline or installing equipment that allows ongoing testing to ensure isolation of pipelines from casings. Pipelines were installed inside casings to protect the pipe from a variety of forces. Casings were routinely used in a variety of situations, including under roads and railroads. Improved pipeline design has mostly eliminated the use of casings in modern gas construction. The Company has identified several instances where it is unknown whether a pipeline carrying gas is or is not isolated from the casing. Pipelines that are not isolated from the casing can create a corrosion risk and lead to pipeline failure. Identifying and remedying these instances are an important safety effort, and we believe the costs we will incur are eligible for GUIC Rider recovery in full.

The Company's Gas Standards Manual section 9.9.9 and 49 Code of Federal Regulations (CFR) § 192.467 require the ability to test for isolation of a pipe and casing. Both the federal code and our standards manual require the Company to take pipe-to-soil and casing-to-soil readings annually for all metallic carrier pipe installed in a metallic casing, with the purpose of determining whether the two pieces of pipe are in contact. If testing shows the pipe and casing are isolated, the casing is added to the annual test leak survey and will be monitored and maintained over time. If testing shows no isolation, the casing will be renewed under this project.

[15] Minn. Stat. § 216B.1635.

This project started during the 2021 construction season and will continue until all casing risks on the program list have been mitigated. We anticipate completing one casing renewal in 2022, with associated capital expenditures of $2.4 million. For informational purposes, we anticipate additional annual capital expenditures of about $1.2 million in 2023 and $0.5 million in 2024.

D. Automatic Shut-Off Valves and Remote-Controlled Valves

The automatic shutoff valve and remote-controlled shutoff valve installation project began in 2015. The installation of automatic shutoff valves and remote-controlled valves provides the Company with a mechanism to shut off the flow of gas more expediently. These valves can be useful tools to prevent negative impacts to public safety in the event of an incident. We expect our valve installation project to be completed by the end of 2021, with no further work currently planned.

V. DIMP PROJECTS

The Company's DIMP is grounded in federal rules issued by PHMSA with a goal to ensure safe and reliable gas delivery to our customers.[16] The DIMP rules are intended to help gas system operators identify, prioritize, and evaluate risks; identify and implement measures to address those risks; and validate the integrity of the gas distribution system.

The Company currently has five major ongoing DIMP initiatives under way.

- Poor Performing Main Replacement,
- Poor Performing Service Replacement,
- Distribution Pipeline Inspection and Replacement,
- Distribution Valve Replacement Project,
- Casing Renewals.

[16] *See* 49 CFR. 192, Subpart P. PHMSA is a Department of Transportation agency created in 2004, responsible for developing and enforcing regulations for the safe, reliable, and environmentally sound operation of the US' 2.6-million-mile pipeline transportation.

Table 4 below shows the estimated 2022 DIMP projects costs.

Table 4
2022 Estimated DIMP Project Costs
($ Millions)

Program	2022 Capital[17]	2022 O&M
Poor Performing Main Replacements	$14.1	$0.0
Poor Performing Service Replacements	$4.7	$0.0
Intermediate Pressure (IP) Line Assessments / Replacements	$27.6	$0.3
Distribution Valve Replacement Project	$0.4	$0.0
Casing Renewal	$0.6	$0.0
Total 2022 DIMP Capital Expenditures and O&M	**$47.4**	**$0.3**
Total 2022 Minnesota DIMP Revenue Requirement	**$18.4**	**$0.3**

To date, three major DIMP initiatives have been completed. They are:

- Sewer and Gas Line Conflict Remediation,
- Distribution Pipeline Data, and
- Federal Code Mitigation.

Project descriptions, scopes, estimated costs, and in-service dates for specific DIMP projects are provided in Attachments D, D1, D2(a), and D2(b). Attachment F reports the capital expenditure forecast for incremental DIMP activities between August 2012 and December 2026. Attachment H shows the development of 2022 revenue requirements for DIMP activities, based on the capital expenditures referenced in Attachment F.

A. Poor Performing Main and Service Replacements

Under 49 CFR Part 192.1007(d), the Company must determine and implement measures designed to reduce the risks from failures of its gas distribution pipeline. As a result, the Company uses subject matter expertise, historical leak data, and industry information to identify risk factors that may lead to gas pipeline leaks or failures. The annual replacement levels of high- and medium-risk pipe are based

[17] Estimated capital costs include estimated removal costs. Details can be seen in Attachment D1.

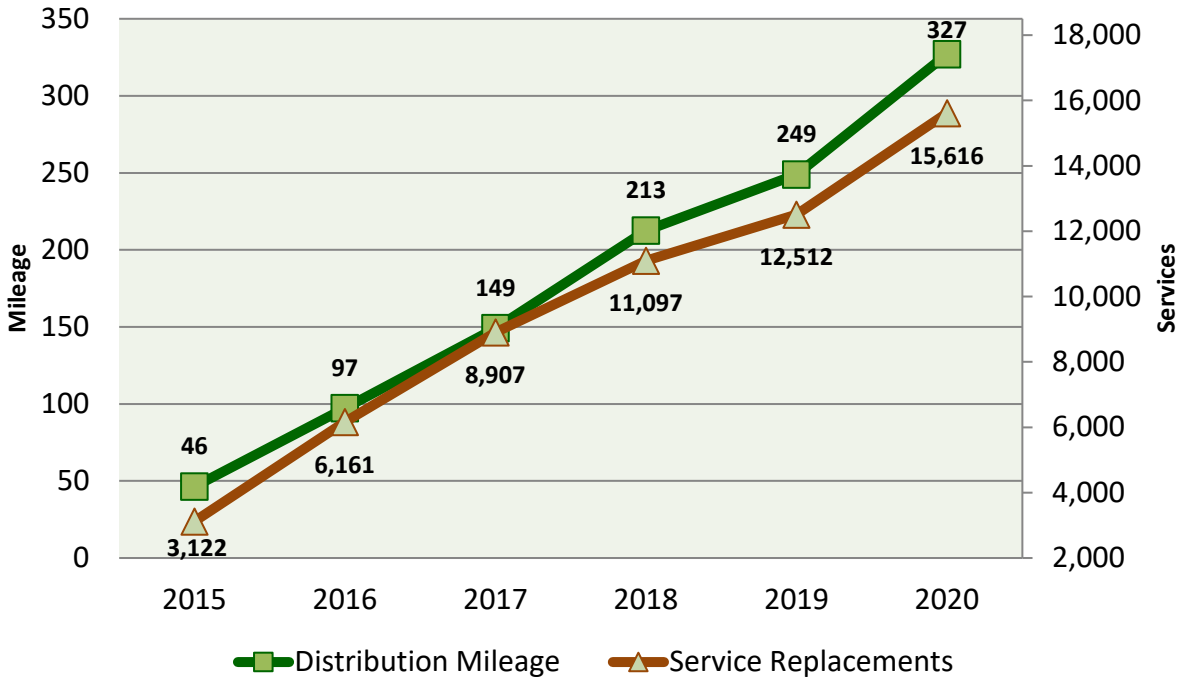
on these factors. In this filing we are requesting $14.1 million in costs related to Poor Performing Mains and $4.7 million in costs related to Poor Performing Service Replacements.

The Company deems a main or service line to be high- or medium-risk through our risk ranking methodology as well as monitoring industry trends and issues. The goal of the Company's risk analysis is to anticipate issues and proactively address them before they become problems on the system. Improvements in data quality and Company processes are aiding the transition to a more proactive approach which benefits customers. Work undertaken systematically reduces costs compared to work undertaken in a reactionary or immediate threat mode. The Company monitors and reviews the leak history of pipe material types and year of installation. Trends of increasing leak ratio or cause associated with certain pipe types are studied further to determine if proactive action is required.

Figure 2 below illustrates the Company's achievements in integrity-related main and service distribution replacement.

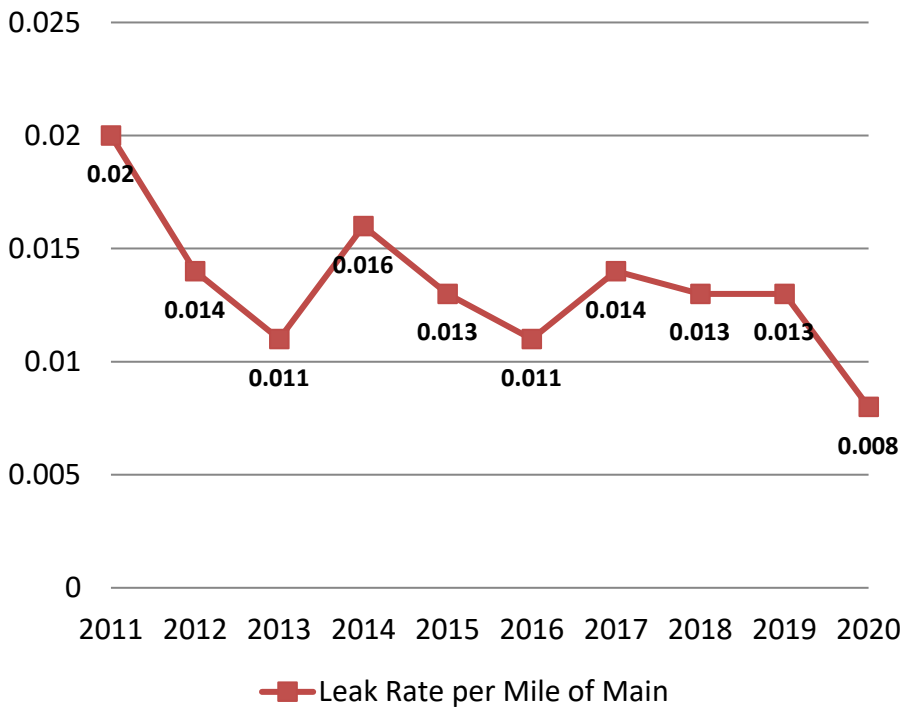
Figure 2

Cumulative Gas Distribution Pipeline Installation and Service Replacements



The Company continually collects data to help identify and remove distribution pipe segments that are most susceptible to failure. One of these data collection methods is periodic leak surveys to monitor system integrity and remediate leaks that have the potential to result in an event. Figure 3 below reflects leak data submitted to the United States Department of Transportation for the years 2011 through 2020.

Figure 3
Distribution Mains Leak Rate
(Per Mile of Main)



As evidenced in Figure 3 above, the performance of the Company's distribution system has gradually improved, as measured by a decline in the leak rate per mile of main from 2011 to 2020.[18] For informational purposes, our estimated future annual capital expenditures for the poor performing mains project are between $12 million and $18 million. The estimated future annual capital expenditures for the poor performing services project are between $4 million and $6 million. Replacement work will require design and construction resource procurement and deployment. The Company does not expect to incur significant O&M costs for the project, as the costs of service transfers are a capital cost when the transfer is completed as the result of, and in conjunction with, another capital project.

[18] Leak rates can occasionally increase year over year due to variances in areas where work is focused each year.

B. Distribution Pipeline Inspection and Replacement

Distribution pipeline inspections and replacements are part of an ongoing program that involves the regular inspection and replacement of high- and medium-risk segments of pipeline to satisfy the federal pipeline safety regulations set forth by PHMSA rules.[19] The asset health data collected from these inspections will be used to develop plans for additional mitigation actions as needed to protect public safety. We expect capital expenditures of about $28 million (capital and O&M) in 2022 for the line assessment and replacement work.

As shown in Table 5 below, the Company expects to complete four direct assessment projects in 2022, along with excavations based on survey results from 2021. When adding the mileage for assessments already completed from 2016 to present, the Company expects to assess a total of 118.8 miles of distribution pipeline from 2016 through 2022.

Table 5

Distribution Pipeline Integrity Assessments[20]

	Number of Projects							
	2016	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**Total**
Pressure Test	0	0	0	1	0	0	0	1
Direct Assessment	2	1	2	0	1	4[21]	4	14
River Crossing Assessment	0	0	0	0	0	16	0	16
Total	2	1	2	1	1	20	4	31
	Assessed Mileage							
	2016	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**Total**
Pressure Test	0.0	0.0	0.0	2.4	0.0	0	0	2.4
Direct Assessment	30.7	11.1	5.0	0.0	36.2	22.7	10.7	116.4
Total	30.7	11.1	5.0	2.4	36.2	22.7	10.7	118.8

[19] *See* 49 CFR Part 192.921 (a). The rule requires an operator to assess the integrity of the line pipe in each covered segment by applying one or more of the approved methods depending on the threats to which the covered segment is susceptible. An operator must select the method or methods best suited to address the threats identified to the covered segment.

[20] 2021 and 2022 amounts are estimates based on expected work scopes. Numbers may change as actual work is completed.

[21] Number includes two excavation projects based on survey results in 2014 and 2020.

In addition to the four direct assessment projects and excavations planned for 2022, the Company also plans to complete two pipeline replacement projects. As a part of these two projects, the Company will replace 9.2 miles of distribution pipeline. The replacement of these lines will support the integrity management of the Company's high-pressure distribution system. One of the two replacement projects, the Langdon Line project, was initially planned as a part of our 2018 DIMP work. However, due to contract labor resource pressures, the Company reprioritized higher risk projects which pushed this work into 2021 and 2022.

For informational purposes, we expect additional annual capital expenditures between $9 million and $19 million from 2023 through 2026. In addition to capital expenditures, we also expect to incur about $0.3 million in annual O&M costs from 2023 through 2026.

C. Distribution Valve Replacement Project

The distribution valve replacement project is an ongoing project focusing on the replacement adding, replacing, or otherwise rehabilitating existing distribution valves. This work is in response to the Company's obligation under 49 CFR Part 192.1007(d). We estimate that the annual capital expenditures for distribution valve replacements will be about $0.4 million in 2022.

One aspect of the program will focus on existing distribution system isolation valves which have become inaccessible, inoperable or are beyond their useful life. The Company determines the need for a valve replacement based on valve conditions and locations. Initially, the Company anticipated valve replacement work ending in 2019. However, additional valves have been identified as inoperable while performing periodic maintenance and operating procedures. The Company currently estimates a total of 15 distribution valves will be replaced in the South Metro and Southeast areas. Of these valves, one is expected to be replaced in 2022 with the remaining to be replaced in 2023 through 2026. Replacing these valves will allow the Company more options to isolate sections to address an emergency or system incident, while impacting the smallest number of customers.

A second aspect of this project is the installation of new valves. After a review in 2020 determined that new valves were needed to reduce shutdown times during emergencies, we began new valve installations in 2021. 30 new valves are expected to be installed in 2022, with the remaining to be installed in future years as a part of the DIMP work.

We estimate that the annual capital expenditures for distribution valve replacements in 2023 through 2026 will be approximately $0.4 million annually.

D. Casing Renewal

As with the transmission casing renewal project, this work is being done in accordance with the Company's Gas Standards Manual section 9.9.9 and 49 CFR § 192.467. The casing renewal project is a new multi-year program planned to start in 2021. This is a comparable project to the TIMP casing renewal project discussed earlier, but instead focused on distribution pipelines. Under this project, the Company isolates pipes and casings that are determined to be in contact with one another (or unable to take readings), mitigates leakage risk for sites that indicate the presence of corrosion or where testing has not occurred, and replaces pipe where it is not possible to test or isolate the pipe. Metallic pipes need to remain isolated from each other to reduce corrosion risk.

This project started in 2021 and shall continue annually until all casings risks on the program list have been mitigated. We anticipate completing two casing renewals in 2022, with associated capital expenditures of $0.6 million. For informational purposes, we anticipate additional annual capital expenditures between $1.8 million and $3.0 million from 2023 through 2026.

VI. MANDATED RELOCATIONS

The mandated relocations program is dedicated to moving existing infrastructure to meet federal, state, or local requirements. This includes relocating facilities that are in direct conflict with street expansions within public rights-of-way and safety-related work required by a governing authority. The Company must invest capital to achieve these relocations and establishment of service via infrastructure at a different location.

We began including mandated relocations as a GUIC project in 2021. We believe mandated relocations to move facilities that are in direct conflict with street expansions within public rights-of-way is the type of program specifically considered by the statute. One of the two definitions of a project to be included in the GUIC is:

> *…replacement of natural gas facilities located in the public right-of-way required by the construction or improvement of a highway, road, street, public building, or other public work by or on behalf of the United States, the state of Minnesota, or a political subdivision[.]*[22]

The Company has been notified of three mandated relocation projects occurring in 2022. These projects are in Nisswa, Forest Lake and Stillwater. In addition to the discrete projects we have already been notified of, the Company also expects to complete several other mandated relocation projects in 2022, as additional infrastructure work is planned by budgets for routine relocation projects that arise during each year. These projects

[22] Minn. Stat. § 216B.1635 subd. 1.c.1.

typically have a cost less than $0.3 million. We estimate that the total capital expenditures for mandated relocations we are asking to recover in the GUIC Rider will be approximately $4.6 million in 2022. Table 6 below shows the estimated mandated relocation project costs.

Table 6

2022 Estimated Mandated Relocation Project Costs

($ Millions)

Mandated Relocation Program	2022 Capital	2022 O&M
Total 2022 Capital Expenditures and O&M	**$4.6**	**$0.0**
Total 2022 Minnesota Revenue Requirement[23]	**$1.9**	**$0.0**

The amounts included in the 2022 GUIC Rider Petition are based on historical data and anticipated costs. The budget for main relocations is based on the average of 2019 and 2020 actuals escalated by the corporate inflation rate.[24] Further, inputs and assumptions regarding inflation factors are used to determine the assumed cost increases or decreases. For informational purposes, we estimate that capital expenditures for mandatory relocations will be about $4 to $5 million annually from 2023 through 2026.[25]

As we mentioned earlier, we have been doing mandated relocation work since before we began TIMP and DIMP-related work. Our current base rates include approximately $6.7 million of mandated relocation work. As the GUIC Rider is for the recovery of incremental costs, our 2022 request only includes the amount of mandated relocation work over and above the amount in base rates.

Project descriptions, scopes, estimated costs, and in-service dates for specific mandated relocation projects are provided in Section VI of Attachment D. Attachment F reports the total capital expenditure forecast for mandated relocation activities through December 2026. Attachment H shows the development revenue requirements for mandated relocation activities, based on the capital expenditures referenced in Attachment F.[26] Attachment I shows the baseline comparison to the 2010 rate case test year revenue requirement for mandated relocations.

[23] 2022 revenue requirements for Mandated Relocation projects are net of the estimated revenue requirement of $0.37 million collected in base rates.
[24] Approximately 3 percent per year.
[25] Amounts are incremental to the $6.7 million of mandated relocation work already included in base rates.
[26] Mandated relocations are shown with DIMP in Attachments H, O, and P.

VII. COMPLIANCE WITH COMMISSION ORDERS AND STATUTES

A. GUIC Rider Promotes Safety and Reliability and is in the Public Interest

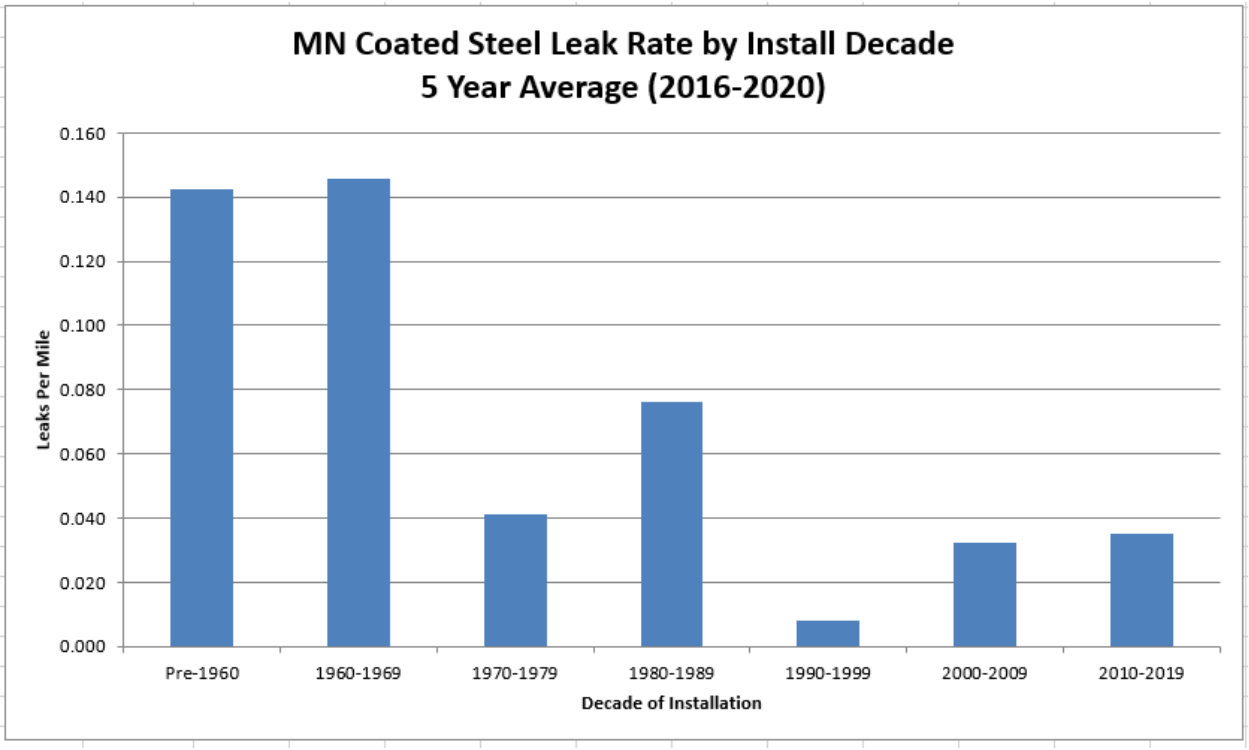
The GUIC Rider continues to be in the public interest, as it enables ongoing improvements that help ensure the safety and reliability of the Company's gas utility assets. As the Commission has recognized, by proactively addressing system risks, the Company can systematically and efficiently conduct critical work. Indeed, working from a proactive stance allows the Company to take advantage of improved economies of scale, engage in regional planning, minimize inconvenience to impacted communities, and efficiently deploy resources.

The public and customer benefits of increased safety and reliability that are delivered through integrity management project work are significant and ongoing, but continued efforts are needed. For instance, the needs of our aging infrastructure, particularly in densely populated areas, are addressed through our integrity management work. Thus, integrity management project work reduces the risks of major catastrophes in the event of a failure.

1. Addressing Aging Assets

Federal regulation requires pipeline operators to assess the integrity of their pipelines based on threats to which the pipeline is susceptible. The characteristics of the Company's gas utility assets, including material types and construction methods used at the time of installation, introduce varied levels of risk. For example, steel pipes that were installed prior to the requirements or implementation of effective cathodic protection are prone to corrosion and have a higher risk of failure. Older assets also have a higher risk of material or construction flaws. A demonstration of this fact is shown in Figure 4 below. In this figure, leak rates per mile are shown for each decade of installation for our coated steel distribution pipelines.

Figure 4

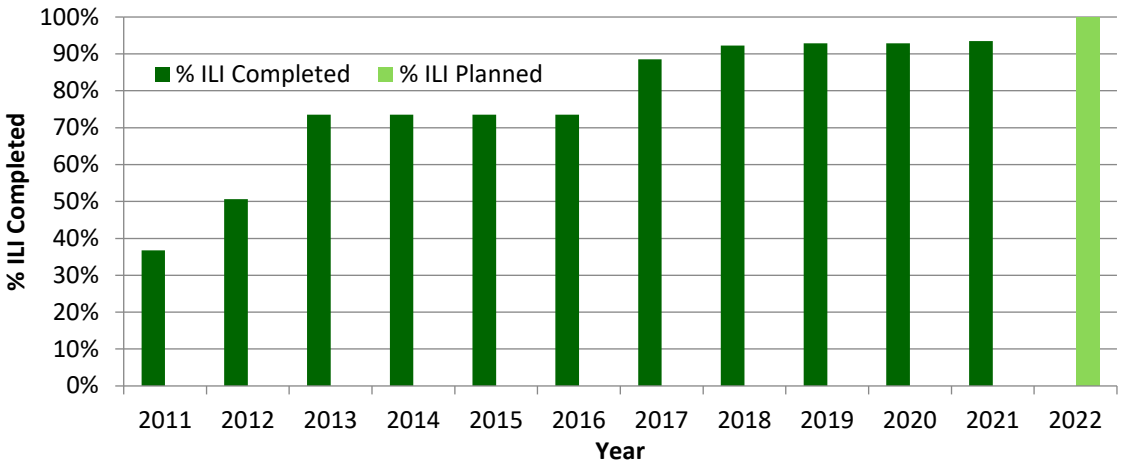


As can be seen, the leak rate for pipe installed in more recent decades is consistently lower than the leak rate for pipe installed earlier. While age alone does not indicate an imminent risk of failure, it is a predictive factor, and we must address risks posed by legacy construction techniques and materials. Leak rates for steel installed in 2020 were not included in Figure 4 above, as a five-year average will not be available until 2025. There were zero underground, non-excavation damage leaks recorded for steel installed in 2020, corresponding to a one-year leak rate of zero leaks per mile.
To assess aging gas transmission assets, the Company primarily uses ILI due to its superior ability to provide detailed information regarding the current pipeline condition without having to remove the line from service. Not all pipelines can be assessed by ILI due to limitations in the capabilities of available ILI tools. For example, the same ILI tool cannot be used on the entire length of a pipeline if the pipe diameter varies.

As shown in Figure 5 below, approximately 94 percent of the Company's gas transmission system that is planned to be assessable using ILI tools has been assessed. The Company's current assessment plan projects 100 percent of transmission pipelines that are feasible to be assessed by ILI tools will be ILI compatible by 2022.

Figure 5

Transmission System ILI Assessment Progress[27]



2. Safety and Population Density

Many communities with older gas utility assets have grown significantly since the gas system in that area was initially built. Increased population density brings with it a higher risk of catastrophic consequences in the event of a failure. Population density is a critical focus of determining the criticality of pipeline work and is a factor in our risk modeling processes which help us prioritize work in high density areas.[28] Pipeline assets, both transmission and higher-pressure distribution lines, require increased effort and related expense as the Company works to help ensure the safe and reliable operation of these systems.

3. Risk Assessment Methodology

The Company evaluates the threats to our pipeline that may pose a safety or reliability risk. Pipeline asset information from existing records, operating data, and input from subject matter experts is initially used to identify events or conditions that could cause or increase the likelihood or consequence of pipeline failure. This risk evaluation process provides information to facilitate decisions about the prioritization of health and condition assessments, the frequency of assessment, which assessment methodology is most appropriate, and in certain cases information to substantiate the need for replacement of an asset. The Company provides detailed explanations of our risk assessment processes in Attachments C and D.

[27] This chart does not include recently-installed pipelines that are not yet due for their baseline assessment after being placed in-service.

[28] High density areas are also referred to as high consequence areas in PHMSA guidelines.

The Company continues to assess our assessment processes to ensure that they are as useful as possible. The actual results of the risk assessments can be found in Attachments C2, D2(a), and D2(b).

B. GUIC Rider Activities are Reasonable and Prudent

The GUIC statute requires that our annual filing include information regarding the reasonableness and prudency of our integrity management project costs incurred.[29] Through stringent oversight processes and a contract and charge review process, the Company can ensure that costs are tracked and are reasonable in comparison to forecasted amounts. The Company looks for many opportunities to control costs, and the following discussion will highlight these efforts undertaken by the Company to ensure the reasonableness and prudency of our integrity management project costs.

The Company believes integrity management project work is prudent, regardless of the recovery mechanism used. The primary advantages of a rider mechanism are the added flexibility, frequency of regulatory review, and promptness of recovery. Rider recovery also provides additional certainty by allowing the Company to develop multiyear programs of work that are more comprehensive and cost effective, which can deliver cost savings over time through more efficient work planning. When the work is proactive in nature, construction crews can be optimized to reduce mobilization and demobilization costs, coordinate permitting and street construction with impacted communities, and minimize traffic control and rerouting to reduce the overall inconvenience of this work for our customers. Additionally, we can leverage economies of scale by obtaining the requisite project equipment at a competitive price. When work must be completed due to a reactive or emergency-driven situation, there is less ability to plan strategically about costs, efficiencies, or community impact.

1. Forecasting

Expenditures for integrity management projects must successfully pass through the Company's capital and O&M budgeting process, which is approved by Company officers and the board of directors. The Company leverages experience with assessments and repairs to assist in developing budgets for future work. Additionally, the Company's gas project management department handles large gas projects and programs. This department provides centralized project management to address overall scope, scheduling, and budgeting for major capital gas projects.

While the Company has strict cost controls in place to ensure that costs are prudently incurred, actual work requirements may cause actual costs to be either higher or lower than initial forecasts. To the extent actual costs are higher, this should not disqualify

[29] Minn. Stat. § 216B.1635 subd. 4(2)(iv).

the additional costs from being considered reasonable, prudent, and eligible for GUIC Rider recovery consideration. The recovery of projects costs, whether in base rates or through a rider, depends on the prudency of those costs rather than the accuracy of an initial forecast. The Commission has previously concluded that "cost overruns can be prudently incurred" and that the "Commission will therefore permit utilities to seek higher recovery levels in future proceedings, with proper documentation and explanation in their rider filings."[30]

Beyond being consistent with longstanding Commission practice and precedent, allowing the Company to true-up GUIC Rider costs if costs differ from initial forecasts is also good policy. Utilities should be encouraged to provide forecasts that are as accurate as possible, given the best information available at the time of the forecast and based on the expertise and judgment of their engineering and project teams. This promotes transparency and predictability when it comes to the costs (and ultimately the rates) associated with these projects. Adopting a bright-line rule with respect to any costs above a utility's forecast—whether due to permitting delays, weather, or any other factor beyond a utility's control—would distort utility incentives around forecasting accuracy. Specifically, it would create significant incentives for utilities to adopt more conservative approaches to forecasting project costs to avoid disallowances for the sole reason that actual costs exceeded the forecast.

2. Cost Controls

The Company's gas business unit monitors capital expenditures to ensure that authorized projects align with the established budget to achieve the lowest reasonable and prudent cost. On a monthly basis, budget to actual spend is compared and financial forecasts are updated for programs and projects.

Integrity management projects follow the Company's sourcing policy, which provides that, with few exceptions, all standard goods and services agreements with a value greater than $50,000[31] are awarded on a documented competitive basis. [32] In the limited circumstances where a competitive process is not required, written justification and director-level authorization from the business area and the Company's supply chain department is required.[33]

[30] *In the Matter of the Application of ITC Midwest LLC for a Certificate of Need for the Minnesota-Iowa 345 kV Transmission Line Projects in Jackson, Martin, and Faribault Counties*, Docket No. ET-6675/CN-12-1053, at 6 (November 25, 2014).
[31] Including cumulative amounts in multi-year agreements.
[32] The bid process also ensures compliance with Company policies regarding the use of diverse contractors and suppliers as specified within the Company's corporate policy on supplier diversity.
[33] Some examples of situations where a competitive bid would not be used include emergency work and the absence of competitive firms.

Furthermore, where practical, the Company establishes bid-unit contracts for activities that are reproducible. Contracts are awarded to the vendors that provide the best overall value, resource availability, and proven safety performance. When bid-unit contracts cannot be used, the Company employs project-specific lump sum bids or written proposals against existing contractual agreements that establish the intended work activities through a written scope of work and confirm the vendor's understanding in their written proposals and schedules.[34]

Aging infrastructure across the country has resulted in many gas operators implementing multi-year replacement programs. This has resulted in heavy competition to secure specialized equipment, engineers, and construction crews required for renewal work. The contractors that complete work as a part of these multi-year replacement programs have been unable to support the total amount of work being done. This has put stress on available engineers, construction contractors, and other needed resources. To that end, we have invested not only in robust supply chain procedures, but also in human resources, including engineers and construction crews.

3. Oversight Methods and Contract/Charge Review

In addition to using a competitive bid process to secure needed resources, we also employ significant and ongoing cost oversight. The Company conducts a monthly status review of major capital programs and projects, including integrity management projects. We review actual overall capital spending in comparison with forecasted spending monthly and at year-end.

The Company's Rider Review Committee (RRC) reviews projects included in our various rider recovery mechanisms. For the GUIC Rider, the RRC is tasked with ensuring that modifications made to integrity management projects met the intent of the GUIC statute and Company's GUIC Rider. The RRC process is designed to formalize the structure and documentation practices as well as increase the transparency around capital and O&M expenditures related to gas integrity initiatives recovered through rider cost-recovery mechanisms. Program proposals modifying original plans are subject to review, approval, and sign-off based on cost thresholds governed by the RRC's approval matrix guidelines.

In addition to the financial oversight and controls mentioned above, the Company also employs various levels of operational oversight and controls to meet internal standards, and external requirements set forth by the Code of Federal Regulations. All gas projects completed by contractors have assigned inspectors that assist in

[34] Agreements with a value less than $50,000 are awarded on an informal competitive basis to the extent reasonable to obtain goods and services from a source whose offer is most advantageous to Xcel Energy, considering the administrative cost of the purchase.

oversight and validate that the contractor is performing work in accordance with the Company's Pipeline and Compliance Standards Manual. The Company primarily uses contract inspectors for oversight work, as these inspectors can provide specialized experience and equipment. Also, using outside resources for oversight work allows for an independent approach to inspections that is completed in a standard manner consistent with our Pipeline Compliance and Standards Manual.

Other oversight methods include scheduled and unscheduled inspection from members of the Minnesota Office of Pipeline Safety (MNOPS). Each year, MNOPS conducts scheduled field and records inspections throughout our service territory. Additionally, the Company provides MNOPS with information regarding active projects, and inspectors have authority to make unannounced inspections at any time. For example, MNOPS performed 22 planned inspections and evaluated 20 unplanned events in 2021. Inspections included a review of field locations and records, operations and maintenance procedures, safety-related concerns, and outages.

Integrity management projects have internal personnel identified that oversee the activities. Those personnel work closely with gas engineering, design, and our contractors before, during, and after construction to plan and schedule the work, discuss efficiency opportunities, and communicate challenges that may impact the work as well as its cost. The personnel responsible for oversight also review and approve all project-related invoices to ensure the costs are accurate and reasonable.

As part of our cost review process, all capital and O&M transactions identified as integrity management-related are now individually reviewed monthly and require management approval. We believe this enhanced examination of individual transactions and subsequent validation that each transaction relates to a master service agreement involving Minnesota-specific work will help prevent instances of inadvertent incorrect jurisdictional assignments moving forward.

4. Outsourcing

While the Company seeks to minimize its outsourcing of TIMP and DIMP work, in certain instances external expertise is needed to help ensure the safe and efficient completion of projects. In these instances, the Company seeks and relies on outside assistance.

The Company uses internal resources when the work falls within the Company's core competencies. External resources are used when the Company has neither the internal expertise nor the equipment available to perform the specialized aspects of a project. By outsourcing the specialized portion of work, the Company saves customers the cost of purchasing expensive, specialized equipment, and ensures investigations are conducted by experienced resources.

When outsourcing is needed, contractor performance is managed through contractor scorecard meetings. Performance is tracked using high-level categories of timeliness, quality and cost specific goals such as:

- Work is completed and invoiced in a timely manner and invoicing is accurate.
- Contractor safety performance is acceptable; damages to existing Company and customer facilities and customer outages are reported accurately and resolved in a timely manner.
- Cost per unit and total spend by work activity are reasonable and explainable, and contractors adhere to the contract structure, and identify and explain discrepancies.

The Company's contractual agreements include terms and conditions that address each of the goals listed above. Indeed, the contract covers situations such as work changes, suspension of work, work warranties, and insurance requirements that insulate the Company and its customers from cost overruns due to circumstances within the contractor's control. Once the work is complete, the general conditions specify actions required for final acceptance of the work and price and payment terms. For instance, the Company is not obligated to pay the contractor for work performed incorrectly, work that was beyond the scope of the agreement, or damage caused by the contractor's negligence. These contractual protections serve an important role in protecting against unreasonable and inappropriate cost overruns.

C. GUIC Rider Costs are Incremental

The projects for which recovery is being requested in this filing are incremental expenditures not included in the Company's last rate case.[35] The federal Call to Action leading to the emergence of TIMP and DIMP post-dated the Company's last rate case, and the work is uniquely targeted at assessing and improving the safety, reliability, and integrity of our natural gas infrastructure pursuant to state and federal regulatory requirements.

As we have discussed previously, the Commission has agreed that these costs are new and outside of what was requested in our last rate case.[36] There have been no foundational changes to TIMP and DIMP that would counsel toward a different result. As such, the Commission should again conclude that the projects that are the subject of this petition were not requested in our previous rate case, and—in that way—are appropriate for rider recovery.

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[35] Base rates in the 2010 Gas Rate Case included $480,000 in annual O&M expenditures for TIMP. As this amount is already collected through base rates, it has been removed from the GUIC revenue requirement in this case.
[36] *See* Docket No. G002/M-15-808, ORDER REQUIRING UPDATED REPORT, APPROVING RIDER RECOVERY, AND REQUIRING METRICS TO EVALUATE GUIC EXPENDITURES, (August 18, 2016) at page 6.

While the projects being completed as a part of the integrity management programs are incremental to costs proposed in our last gas general rate case, these projects are replacing gas assets that were included in the rate base approved in that case and as such are being recovered in our current base rates. To account for this fact, we are including an adjustment to our 2022 GUIC Rider revenue requirement to account for the rate base impact of these replaced assets.

There are two examples of adjustments to specific projects to account for amounts included in base rates for similar work. The first example is the valve replacement costs. The costs included in our GUIC Rider recovery have arisen only after the replacement program was initiated in response to new federal standards in 2011.[37] However, these costs are incremental to the small amount of valve-related work in base rates established under the 2010 Test Year filed in our last rate case. In addition, the amount of mandated relocations in the GUIC Rider has been adjusted to account for costs included in our current base rates.[38]

1. Retirements

Given that the GUIC Rider represents a somewhat unique set of circumstances, insofar as it is the only rider primarily involving the replacement of assets, we have removed the impact of estimated retired assets from our 2022 GUIC Rider revenue requirement request.[39] Doing so is an effective way to recognize the impact of asset replacements in base rates that have accumulated since we began integrity management work in earnest. The revenue requirement of these assets has become significant primarily due to the passage of time since our last rate case. However, we make this adjustment while also noting that the increased depreciation, and other revenue requirement impacts, from non-GUIC Rider assets added since our last rate case has been greater than the revenue requirement impact of assets retired due to integrity management project work.

Due to the method of accounting used for our capital assets, the Company cannot directly identify the value of the specific assets replaced during integrity management project work. However, based on our analysis, we estimate that approximately $11.3 million in assets that are included in our current base rates will be retired as of the result of integrity management project work through the end of 2022. We further estimate that these retired assets had a remaining net book value of approximately $3.3 million at the start of the 2010 Test Year used in our last natural gas general rate case. When ADIT on the retired assets is also accounted for, the net impact to rate base is a decrease of $2.4 million.

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[37] *See* 49 CFR 192, Subpart P.

[38] Base rates include about $6.7 million in costs for mandated relocations.

[39] This adjustment was included in our revenue requirement for the first time in our 2018 GUIC Rider Filing Reply Comments, in response to Comments from the Department of Commerce.

Attachment J includes the calculation of our estimate of annual integrity management project-related retirements from 2012 through 2022. In conjunction with the information contained in Table 8 in Section VII.F. below, this attachment contains the information required in Minn. Stat. § 216B.1635 subd. 4(iii). Our calculation is primarily based on an analysis of retirement information from 2012 through 2020. For retirements in 2021 and 2022, complete actual data was not yet available. As such, our estimates are based on averages of annual retirements in previous years. We will redo this analysis when actual retirement information for 2021 and 2022 is available, and the final 2022 revenue requirement will reflect the impact of these actual retirements.

Removing the impact of these retired assets results in adjustments to the return on rate base, estimated book depreciation, annual deferred tax, and the estimated property tax included in our requested 2022 GUIC Rider revenue requirement.

Table 7 below shows the derivation of the estimated 2022 revenue requirement impact.

Table 7

Revenue Requirement Impact – Integrity Management Project Replaced Assets ($ Millions)

Net Book Value of Retired Assets	$3.30
Less: ADIT on Retired Assets	(0.86)
Rate Base of Retired Assets	$2.44
Rate of Return on Rate Base	$0.31
Estimated Book Depreciation on Retired Assets	0.34
Annual Deferred Tax Impact	(0.02)
Estimated Property Tax on Retired Assets	0.19
Revenue Requirement Impact	**$0.82**

2. Internal Capitalized Costs

While the Company maintains that recovery of internal capitalized costs[40] is allowable as a part of our GUIC Rider requests and the costs are legitimate for our GUIC work, we understand that the Commission does not agree with this position. Since the Commission has denied recovery of these costs in their last several Orders in GUIC dockets, we have removed these costs from this year's proposal. We do reserve the ability to reassess the inclusion of these costs in future requests after our gas general rates are reset.

[40] Overhead, other and transportation costs.

D. O&M Costs are Specifically Authorized

With this GUIC Rider request, the Company seeks to recover its O&M costs, consistent with the statute and the Commission's approval of this cost treatment in our previous GUIC Rider filings.

The Company provides actual and estimated TIMP and DIMP cost data for 2020 through 2026 in Attachment K. Though we enter our TIMP and DIMP building cycles with a concrete plan of action, ongoing pipeline inspections may result in the reprioritization of projects as we discover risks that may require more immediate intervention. The need for flexibility in planning is critical in pipeline work, and emergent projects can result in fluctuating O&M costs year over year. The Commission has previously recognized this dynamic, noting "[t]he costs of these investments can vary widely from year to year and are difficult to forecast with accuracy. Approving a rider will give Xcel Energy the ability to implement multi-year pipeline-replacement programs, adjusting the rates annually to correct for over- or under-recovery."[41]

E. Deferred Accounting Projects

Our 2022 request does not include any previously-deferred TIMP and DIMP costs. Previous GUIC Rider requests included deferred costs from gas utility projects approved in previous deferred accounting dockets.[42] These costs were amortized over a five-year period which ended in 2019.

F. Estimated Revenue Requirement

Table 8 below presents Xcel Energy's estimated 2022 GUIC Rider revenue requirement of $27.3 million for TIMP, DIMP and Mandatory Relocation activities. Capital-related revenue requirements and O&M expenses total $34.6 million and $0.8 million, respectively.[43]

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[41] *See* Docket No. G002/M-14-336, ORDER APPROVING RIDER WITH MODIFICATIONS, (January 27, 2015) at page 7.

[42] *See* Docket No. G002/M-12-248, 2014 Annual Report, Gas Safety Deferred Accounting, March 2, 2015. See also Docket No. G002/M-10-422, Annual Report, Sewer Conflict Deferred Accounting, January 30, 2015.

[43] Numbers in this sentence do not include reductions related to removal of retirement credits, O&M recovery and mandated relocations recovery in base rates, and other regulatory treatment adjustments. Those amounts are shown as separate adjustments in Table 8.

Table 8

2021-2022 GUIC Rider Revenue Requirement ($ Millions)

	2021 Current Forecast	2022 Forecast
Capital-Related Revenue Requirement		
TIMP	$13.8	$13.9
DIMP and Mandated Relocations	16.5	20.7
Total	$30.3	$34.6
O&M Expenses		
TIMP	$1.7	$0.5
DIMP	0.4	0.3
Total	$2.1	$0.8
GUIC Retirement Revenue Credits	$(0.7)	$(0.8)
Internal Capitalized Costs	(0.4)	(0.4)
MAOP Projects at Long-term Debt Rate of Return	(1.8)	(1.7)
Low-Risk Infrastructure	(0.0)[44]	(0.0)[45]
Recovery in Base Rates	(0.8)	(0.8)
Prior-year Disallowances	(3.1)	(4.2)
Revenue Requirement Subtotal	$(6.8)	$(8.1)
True-up Carryover	0.5	-
Total GUIC Rider Revenue Requirement	**$26.0**	**$27.3**

This petition continues to remove the GUIC Retirement Revenue Credits and Recovery in Base Rates noted in Table 8 above in 2021 and 2022 consistent with prior GUIC Rider petitions and as discussed in detail above in the applicable sections. However, as noted earlier in this petition, the Company plans to file a natural gas rate case on November 1, 2021. The Company also plans to file a proposal for a rate case alternative on the same day in Docket No. G002/M-21-750. In our rate case filing and interim rate petition, all costs associated with these two line items have been removed to reflect recovery in the GUIC Rider, or the retirements have been reset to the appropriate test year level. The Company did not reflect this change in the GUIC Rider petition to prevent double recovery if the rate case alternative is selected.

[44] About $-8,000.
[45] About $-40,000.

If the rate case proceeds and interim rates are put in place on January 1, 2022, as we are proposing in the rate case application, the GUIC Retirement Revenue Credits and

Recovery in Base Rates noted in Table 8 above would need to be removed from our 2022 request and would result in an increase in GUIC Rider Revenue Requirements in 2022. The Company will provide an update on interaction between our GUIC Rider request and rate case in reply comments in this docket. This update will include a modified revenue requirement request and updated schedules if necessary.

G. Estimated Costs and Salvage Value

The Company's cost and salvage estimates related to actual and planned integrity management project capital investments are shown in Table 9 below.

Capital expenditure estimates from 2012 through 2026 total approximately $191 million for TIMP and $417 million for DIMP, reflecting an estimated total of about $608 million. Distribution mains and services are depreciated using a composite depreciation rate of 2.33 percent, and transmission mains are depreciated using a depreciation rate of 1.44 percent. The Company's depreciation calculations assume an average remaining life of 37.55 years[46] and a net salvage rate of negative 22.82 percent for distribution mains and services and average remaining life of 63.41 years[47] and net salvage rate of negative 15 percent for transmission mains.

[46] Composite average service life for distribution mains and services is 50.91 years.
[47] Average service life for transmission mains is 75 years.

Table 9

GUIC Capital Expenditures[48] and Net Salvage: 2012-2026

($ Thousands)	TIMP			DIMP			Total
Year	Transmission	Distribution[49]	Total	Distribution	Software	Total	Expenditures
2012	$95	$0	$95	$83	$0	$83	$178
2013	65	9,497	9,562	343	0	343	9,906
2014	(24)	11,651	11,628	240	0	240	11,868
2015	1,073	17,937	19,010	10,011	0	10,011	29,021
2016	4,556	14,196	18,752	12,782	445	13,227	31,978
2017	6,191	600	6,791	13,444	0	13,444	20,235
2018	8,763	(33)	8,730	36,974	0	36,974	45,704
2019	18,603	0	18,603	24,409	0	24,409	43,012
2020	28,966	0	28,966	28,441	0	28,441	57,406
2021	2,648	0	2,648	54,286	0	54,286	56,934
2022	3,957	0	3,957	54,982	0	54,982	58,938
2023	15,249	0	15,249	45,458	0	45,458	60,707
2024	15,577	0	15,577	44,529	0	44,529	60,106
2025	15,541	0	15,541	44,642	0	44,642	60,183
2026	15,666	0	15,666	42,974	0	42,974	58,641
Total	**$136,924**	**$53.849**	**$190,773**	**$416,447**	**$445**	**$416,892**	**$607,665**
Salvage Rate[50]	-15.00%	-22.85%		-22.82%	0.00%		
Net Salvage	**$(20,539)**	**$(12,305)**	**$(32,843)**	**$(95,158)**	**$0**	**$(95,158)**	**$(128,001)**

H. Magnitude of GUIC Rider in Relation to the Gas Utility's Approved Base Revenue and Capital Expenditures

On December 6, 2010, the Company's most recent gas general rate case was approved by the Commission.[51] In that proceeding, the Commission approved a total retail related revenue of $592.87 million for the test year ending December 31, 2010. Excluding $4.69 million of other operating income for customer-related charges not included in retail rates and $429.08 million for gas purchase and transportation charges, the total approved base revenue was $159.10 million. The revenue collection estimates using the sales information based on a proposed 2022 GUIC Rider rate generates $27.3 million of GUIC Rider-related revenues from March 1, 2023 to February 28, 2024. The GUIC Rider revenue estimates reflect 16.5 percent of the base revenues of $159.10 million approved in the previous general rate case.

[48] CWIP only.

[49] The East Metro Project was originally identified from activities related to TIMP assessment activities; therefore, it is classified under the TIMP category. However, the new plant installed is considered distribution plant from a regulatory accounting perspective.

[50] Depreciation lives and salvage rates were approved in Docket No. E,G002/D-20-635. The depreciation lives and salvage rates can be found in Attachment L.

[51] See Docket No. G002/GR-09-1153.

For more details on the expected 2022 revenues in relation to the last rate case, please reference Attachment M. In addition, Attachment N shows our 2020 GUIC Rider recovery, gas base rate recovery, and purchased gas adjustment (PGA) in comparison to amounts reported in our 2020 Minnesota Jurisdictional Gas Annual Report.[52]

VIII. GUIC RIDER FACTOR CALCULATIONS, TIMING OF IMPLEMENTATION, TRACKER ACCOUNTING, AND TARIFF SHEET

A. Revenue Requirements and Proposed 2022 GUIC Rider Rate Adjustment Factor

In this section, we provide the 2022 revenue requirement and 2022 rate adjustments factor calculations for the proposed GUIC Rider.

1. Revenue Requirement

The projected 2022 revenue requirement proposed for recovery through the 2022 GUIC Rider adjustment factors from Minnesota gas customers is $27.3 million. The proposed revenue requirement includes recovery of capital property taxes, current and deferred taxes, and book depreciation.

Attachments G and H summarize the projected revenue requirements for the TIMP, DIMP and mandated relocations projects respectively. The projected GUIC Rider revenue requirements for 2020 through 2026 are summarized in Attachment O to this filing. The supporting revenue requirements and projected 2020 through 2022 GUIC Rider Tracker activity are provided in Attachment P. Attachment Q provides descriptions of the rate base and return calculation categories included in Attachments G and H.

2. Proposed 2021 Rate and Carryover Balance

The Company's 2021 GUIC Rider request is currently in front of the Commission.[53] The Company is currently recovering its GUIC Rider revenue requirements based on the rate factors approved in our Company's 2020 GUIC Rider request approved by the Commission in their May 3, 2021 ORDER AUTHORIZING RIDER RECOVERY WITH MODIFICATIONS.[54] For illustrative purposes in this docket, we have assumed a rate that will collect the 2020 carryover balance and 2021 revenue requirements from March 2022 through February 2023. The presumed rate factors are shown in Table 11 below.

[52] Filed in Docket No. E,G999-PR-21-4.
[53] Docket No. G002/M-20.799.
[54] Docket No. G002/M-19-664.

3. GUIC Rider Rate Adjustment Factors

The Company's GUIC Rider adjustment factor rate design currently provides for rates specific to five customer groups (residential, commercial firm, commercial demand billed, interruptible, and transportation). The revenue requirement is allocated to classes in the same manner as revenues were apportioned in our most recent natural gas rate case,[55] consistent with the Commission's Orders in our 2015 through 2020 GUIC Rider dockets. Currently, the transportation class is apportioned less GUIC Rider revenue requirement than their corresponding demand or interruptible class on a per-therm basis. The Company is proposing apportionment that combines transportation customers with their respective firm or interruptible sales classes. This aligns with our rate design goal to remain indifferent to a customer's choice of sales or transportation service. This proposal has no impact on the residential or commercial firm classes. Table 10 below compares the current and proposed revenue apportionment.

Table 10

Current vs. Proposed Revenue Apportionment

Class	Current Allocator	Class	Proposed Allocator
Residential	67.2244%	Residential	67.2244%
Commercial Firm	21.2597%	Commercial	21.2597%
Commercial Demand-Billed	2.1010%	Demand (including Firm Transport)	5.7172%
Interruptible	5.6521%	Interruptible (including Interruptible Transport)	5.7987%
Transport	3.7628%	N/A	N/A
Total	**100%**	**Total**	**100%**

Proposed class factors are calculated by dividing the class revenue responsibility by the 12 months of weather-normalized actual sales data period and include the GUIC Rider adjustment factor as part of the Resource Adjustment line on customer bills. This is the first GUIC Rider filing that we are using actual sales data in our initial request. We have used forecasted sales in the past to match anticipated sales amounts to the timeframe the sales-based factors will be in place to collect the revenue requirement.

[55] Docket No. G002/GR-09-1153.

However, as the Department has routinely disputed the use of forecasted sales forecasts as a basis for calculating initially proposed rate factors, we have changed to using actual sales data instead. We will continue to monitor this issue and reserve the right to begin using forecasted sales data in a future GUIC Rider request.

The 2021 and 2022 GUIC Rider adjustment factor calculations are shown in Attachment R. Table 11 below shows the currently approved GUIC Rider adjustment factors, proposed 2021 factors, proposed 2022 factors, currently approved classes, and proposed classes.

Table 11

Proposed GUIC Rider Adjustment Factors

(Dollars per therm)

Current Classes	Current Factors	2021 Factors[56]	2022 Proposed Classes	2022 Proposed Factors[57]
Residential	$0.033864	$0.045595	Residential	$0.047752
Commercial Firm	$0.018572	$0.025017	Commercial Firm	$0.026201
Commercial Demand Billed	$0.014666	$0.019281	Demand	$0.003485
Interruptible	$0.010591	$0.015381	Interruptible	$0.011062
Transportation	$0.001602	$0.002101		

The residential bill impacts under each factor are listed in Table 12 below.

Table 12

Monthly Residential Bill Impacts

	Impact of Current Factors	Impact of 2021 Factors	Impact of 2022 Proposed Factors
Monthly Bill Impact	$2.49	$3.35	$3.51
Incremental Bill Impact Change as % of Total Bill		1.65%	0.30%

[56] Assumes the 2021 GUIC Rider revenue requirement is recovered March 1, 2022 through February 28, 2023. These factors are preliminary based on our July 6, 2021 Reply Comments in Docket No. G002/M-20-799.
[57] Assumes the 2022 GUIC Rider revenue requirement is recovered March 1, 2023 through February 28, 2024.

B. Timing of 2022 GUIC Rider Factor Implementation

We request approval to implement GUIC Rider factors in this annual report, effective March 1, 2023, pending review and approval by the Commission. The factor calculations assume that the 2022 GUIC Rider costs are recovered starting March 1, 2023 through February 28, 2024. Our proposed timing for 2023 GUIC Rider recovery is consistent with the timing of recovery we proposed in our 2022 GUIC Rider filing. This has the added benefit of eliminating the need to prorate our ADIT calculation, as recovery will not start until after the end of the cost period. In addition, the proposed timing will allow us to collect 12 months of GUIC Rider costs over 12 months of bills, which allows for more stable factors.

The Company believes this approach is beneficial as it is consistent with the Legislature's intent to provide timely cost recovery to support the significant and mandated natural gas infrastructure investments. It also maintains appropriate regulatory protections and oversight by allowing the Commission and other state agencies the time required to audit and review costs sought for recovery, thus ensuring that any regulatory adjustments will be recognized and implemented appropriately.

C. GUIC Rider Tracker Account

To ensure that customers are not under or overcharged, we record the actual GUIC Rider revenue recovery and requirements in a tracker account as the accounting mechanism for eligible integrity management project costs. As revenues are collected from retail customers each month, the Company tracks the amount of recovery under the GUIC Rider rate factor and compares that amount with the monthly revenue requirements.

The difference is recorded in the tracker account as the amount of over- or under-recovery. Differences in revenue requirements from forecast to actual amounts are also recorded in the tracker. Any over- or under-recovery balance at the end of the year is used in the calculation of the rate factor for the next year's forecasted revenue requirement. In other words, over-recovery is considered by reducing the subsequent year's rate factor calculation. Under-recovery is similarly considered by increasing the subsequent year's rate factor calculation. The revenue requirements included in the tracker are only those related to Minnesota's jurisdictional share of eligible integrity management projects.

We calculate the monthly Minnesota jurisdictional revenue requirements (including appropriate overall return, income taxes, property taxes, and depreciation), compare them with monthly GUIC Rider recoveries from customers, and place the under-

recovered amounts in FERC Account 182.3, Other Regulatory Assets and over-recovered amounts in FERC Account 254, Other Regulatory Liabilities (the Tracker Accounts). Attachment R includes a tracker that presents revenue requirements, rates, and recoveries in the same page to provide a clearer understanding of how the GUIC revenue requirement is recovered via the rider. Tracker balances for GUIC Rider activity estimated in 2021 and 2022 are shown on Attachment S in the carryover rollforward section.

D. Proposed Tariff Sheet and Customer Notice

1. Proposed Revised Tariff Sheet

The proposed 2022 GUIC Rider factors can be found in the clean and redline formats of Tariff Sheet No. 5-64 provided in Attachment T.

2. Proposed Customer Notice

We will provide notice to customers regarding inclusion of this cost on their monthly bill. The following is our proposed language to be included as a notice on customers' bills the month the GUIC Rider factor is implemented:

> This month's Resource Adjustment includes an updated Gas Utility Infrastructure Cost Adjustment (GUIC), which recovers the costs of assessments, modifications and replacement of natural gas facilities as required by state and federal safety programs. The GUIC portion of the Resource Adjustment is $x.xxxx per therm for Residential customers; $x.xxxx per therm for Commercial Firm customers; $x.xxxx per therm for Commercial Demand Billed customers; and $x.xxxx per therm for Interruptible customers.

We will work with the Department and Commission staff if there are any suggestions to modify this notice.

IX. RATE OF RETURN

The GUIC statute states that "[t]he return on investment for the rate adjustments shall be at the level approved by the commission in the public utility's last general rate case, unless the commission determines that a different rate of return is in the public interest."[58]

[58] Minn. Stat. § 216B.1635, subd. 6. The Commission authorized a return on equity of 10.09 percent in our last general rate case.

The Company supports the capital structure and cost of debt agreed to in the settlement of our 2016 Minnesota Electric General Rate Case.[59] For 2019, the settlement parties agreed that the capital structure should be represented by a cost of long-term debt of 4.75 percent and a cost of short-term debt of 4.31 percent.

For this year's GUIC Rider proposal, we are recommending that the Commission approve a 9.04 percent ROE, which is consistent with the Commission's Order in our 2018,[60] 2019,[61] and 2020[62] GUIC Rider dockets. This equates to an overall ROR of 7.00 percent for 2022. Given that this ROE percentage matches the ROE approved by the Commission in our last two approved GUIC Rider dockets, we are not recommending a change in this docket.

X. GUIC RIDER PERFORMANCE METRICS

The development of performance metrics has been an ongoing effort since our 2016 GUIC Rider filing. This effort started at the behest of the Commission. In its August 18, 2016 Order in Docket No. G002/M-15-808,[63] the Commission requested that:

> *The Company develop metrics to measure the appropriateness of GUIC expenditures, to be included in future GUIC filings, and provide stakeholders the opportunity for meaningful involvement.*

The Commission also instructed that:

> *Each metric should include a reconciliation to the pertinent TIMP/DIMP rules, and/or if not tied to TIMP/DIMP requirement, the Company must identify what goal, benefit, and/or requirement it addresses.*

The Company submitted our initial proposal for GUIC Rider performance metrics in a supplement to our 2017 GUIC Rider filing.[64] Before submitting the original proposal, the Company engaged with stakeholders to gather input on the proposed metrics.

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[59] *See* Docket No. E002/GR-15-826, FINDINGS OF FACT, CONCLUSIONS, AND ORDER (June 21, 2017) at page 11.
[60] *See* Docket No. G002/M-17-787, ORDER AUTHORIZING RIDER RECOVERY AND SETTING REPORTING REQUIREMENTS (August 12, 2019), Order Point 3.
[61] *See* Docket No. G002/M-18-692, ORDER AUTHORIZING RIDER RECOVERY WITH MODIFICATIONS (January 9, 2020), Order Point 10.
[62] *See* Docket No. G002/M-19-664, ORDER AUTHORIZING RIDER RECOVERY WITH MODIFICATIONS (May 3, 2021), Order Point 1.
[63] *See* Docket No. G002/M-15-808, ORDER REQUIRING UPDATED REPORT, APPROVING RIDER RECOVERY, AND REQUIRING METRICS TO EVALUATE GUIC EXPENDITURES (August 18, 2016), Order Point 2.
[64] *See* Docket No. G002/M-16-891, SUPPLEMENT AND COMPLIANCE METRICS PROPOSAL (January 13, 2017).

While the Commission has declined to adopt our proposed metrics on several occasions,[65] we have continued to discuss the metrics with stakeholders to better understand their needs and develop a set of metrics acceptable to the Commission. In our 2021 GUIC Rider filing in Docket No. G002/M-20-799, we filed a set of metrics based on the ongoing discussions we had with parties that were comparable to the set of metrics the Department appeared to support for the ongoing GUIC programs. While the Department did not oppose the metrics we proposed for ongoing programs, they did ask that we establish metrics for the programs started in 2021—casing renewals, mandated relocations, and new distribution valve replacements.[66] In our Reply Comments in that docket we agreed to add performance metrics for the casing renewal, mandated relocations, and distribution valve replacement.

Table 13 below shows the TIMP and DIMP performance metrics we believe would be most useful at this time. These metrics include the metrics for existing GUIC programs that the Department seemed to agree with, and the metrics for new programs we proposed in our Reply Comments. Attachment U further discusses our proposal for metrics to measure the appropriateness of GUIC expenditures.

Table 13

Recommended Performance Metrics

Program	Project	Cost Performance Metric	Effectiveness Performance Metric
TIMP	Transmission Pipeline Integrity Assessments	Estimated versus actual costs per project	Anomalies repaired by type
	ASVs and RCVs	Estimated versus actual costs per project	Reduction in response time per project
	Programmatic Replacement and MAOP Remediation	Estimated versus actual costs per project	Percentage of high/medium risk projects system-wide
DIMP	Poor Performing Main Replacement	Poor performing main replacement unit cost (per foot)	Leak rate by vintage
	Poor Performing Service Replacement	Poor performing service replacement unit cost (per foot)	Leak rate by vintage
	Distribution Pipeline Integrity Assessment	Estimated versus actual costs per project	Anomalies repaired by type

[65] *See* Docket No. G002/M-16-891, ORDER APPROVING RIDER WITH MODIFICATIONS (February 8, 2018), Order Point 5; Docket No. G002/M-18-692, ORDER AUTHORIZING RIDER RECOVERY WITH MODIFICATIONS (January 9, 2020), Order Point 18; and Docket No. G002/M-19-664, ORDER AUTHORIZING RIDER RECOVERY WITH MODIFICATIONS (May 3, 2021), Page 4.

[66] *See* Docket No. G002/M-20-799, Department of Commerce Comments at Page 19, (June 23, 2021).

Table 13 (continued)

Recommended Performance Metrics

Program	Project	Cost Performance Metric	Effectiveness Performance Metric
	Distribution Valve Replacement	Estimated versus actual costs per project	Percentage of inoperable valves replaced
	Distribution Valve Replacement (New Valves Only)	Estimated versus actual costs per project	Reduction in potential customer outages
	Sewer and Gas Line Conflict Remediation	Inspection Unit Cost	Percentage of Total Premises Inspected
TIMP/DIMP	Casing Renewals	Estimated versus actual costs per project	Percentage of casing projects planned for the year completed
	Mandated Relocations	Estimated versus actual costs per project	Number of planned mandated relocations versus actual relocations

CONCLUSION

The Company implemented transmission and distribution integrity management plans to be able to follow evolving federal and state regulatory standards. Our TIMP and DIMP plans are prudent investments that have resulted in the replacement of aging pipeline. By completing these replacements, the Company has minimized public safety risks associated with aging assets that deliver gas service.

The legislature authorized the prompt recovery of integrity management costs in 2013, and the Commission validated the importance of that prompt recovery in their previous GUIC Rider Orders. In this filing, the Company provides updates on the status of our TIMP and DIMP activities by describing the safety and reliability the Company brings to our gas system with the planned work. We further highlight our plan to recover the remaining 2021 investment that has not yet been recovered and outline our proposal to recover the 2022 investments. Xcel Energy respectfully requests that the Commission, consistent with its previous GUIC Rider Orders, grant recovery of gas utility infrastructure costs through the GUIC Rider and approve the proposed 2022 GUIC Rider factors.

Dated: October 29, 2021

Northern States Power Company

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

Katie Sieben	Chair
Joseph K. Sullivan	Vice-Chair
Valerie Means	Commissioner
Matthew Schuerger	Commissioner
John Tuma	Commissioner

IN THE MATTER OF THE PETITION OF NORTHERN STATES POWER COMPANY FOR APPROVAL OF A GAS UTILITY INFRASTRUCTURE COST RIDER TRUE-UP REPORT FOR 2020, UPDATED COSTS FOR 2021, REVENUE REQUIREMENTS FOR 2022, AND REVISED ADJUSTMENT FACTORS

DOCKET NO. G002/M-21-____

PETITION, COMPLIANCE FILING, AND ANNUAL REPORT

SUMMARY OF FILING

Northern States Power Company, doing business as Xcel Energy (Xcel Energy or the Company), submits this Petition, Compliance Filing, and Annual Report to the Minnesota Public Utilities Commission. To promote a safe and reliable gas system, Xcel Energy has undertaken approved threat evaluation, assessment, and risk mitigation activities, in compliance with federal regulations. We request approval to recover gas utility infrastructure costs (GUIC) through the GUIC Rider. Xcel Energy requests cost recovery of its projected 2022 Transmission and Distribution Integrity Management Programs costs pursuant to Minn. Stat. § 216B.1635, which permits a utility to petition the Commission for recovery. The Company also seeks approval of its 2022 GUIC Rider adjustment factors and its proposed capital structure and ROE for 2022.

Compliance Matrix

Petition Requirements	Reference
Minnesota Statute § 216B.1635	
Subd. 2. **Gas infrastructure filing.** A public utility submitting a Petition to recover gas infrastructure costs under this section must submit to the commission, the department, and interested parties a gas infrastructure project plan report and a Petition for rate recovery of only incremental costs associated with projects under subdivision 1, paragraph (c). The report and Petition must be made at least 150 days in advance of implementation of the rate schedule, provided that the rate schedule will not be implemented until the Petition is approved by the commission pursuant to subdivision 5. The report must be for a forecast period of one year.	The filing date of this Petition, October 28, 2021 is 489 days before our proposed implementation date of March 1, 2023. We discuss the proposed implementation date in Section II.C of our Petition. The report is for a one-year forecast Period from January 1, 2022 through December 2022.
Subd. 3. **Gas infrastructure project plan report.** The gas infrastructure project plan report required to be filed under subdivision 2 shall include all pertinent information and supporting data on each proposed project including, but not limited to, project description and scope, estimated project costs, and project in-service date.	Details on each TIMP project can be found in Attachments C and C1. Details on each DIMP project can be found in Attachments D and D1. Details on the Mandated Relocation projects can be found in Attachment D.
Subd. 4. **Cost recovery Petition for utility's facilities.** Notwithstanding any other provision of this chapter, the commission may approve a rate schedule for the automatic annual adjustment of charges for gas utility infrastructure costs net of revenues under this section, including a rate of return, income taxes on the rate of return, incremental property taxes, incremental depreciation expense, and any incremental operation and maintenance costs. A gas utility's Petition for approval of a rate schedule to recover gas utility infrastructure costs outside of a general rate case under section 216B.16 is subject to the following: (1) a gas utility may submit a filing under this section no more than once per year; and (2) a gas utility must file sufficient information to satisfy the commission regarding the proposed GUIC. The information includes, but is not limited to:	The filing date of this Petition is October 28, 2021. Our 2021 GUIC Rider Petition was filed on October 23, 2020.

Compliance Matrix

Petition Requirements	Reference
(i) the information required to be included in the gas infrastructure project plan report under subdivision 3;	Details on each TIMP project can be found in Attachments C and C1. Details on each DIMP project can be found in Attachments D and D1. Details on the Mandated Relocation projects can be found in Attachment D.
(ii) the government entity ordering or requiring the gas utility project and the purpose for which the project is undertaken;	The government entity ordering each project and purpose for project for each TIMP project can be found in Attachment C1. The same information can be found for each DIMP project in Attachment D1 and the Mandated Relocation projects in Attachment D.
(iii) a description of the estimated costs and salvage value, if any, associated with the existing infrastructure replaced or modified as a result of the project;	Our estimate of the cost and net book value of the assets in our currently approved base rates retired as a part of our GUIC projects are discussed in Section VII.C of our Petition and shown in Attachment J. The estimated salvage value of our GUIC projects is shown in Table 6 in Section VII.G of our Petition.
(iv) a comparison of the utility's estimated costs included in the gas infrastructure project plan and the actual costs incurred, including a description of the utility's efforts to ensure the costs of the facilities are reasonable and prudently incurred;	Actual and estimated cost information and a discussion of the reasonableness and prudence of our TIMP projects can be found in Attachment C. The same information can be found for our DIMP projects can be found in Attachment D.

Compliance Matrix

Petition Requirements	Reference
(v) calculations to establish that the rate adjustment is consistent with the terms of the rate schedule, including the proposed rate design and an explanation of why the proposed rate design is in the public interest;	The public interest support for our request is found in Section VII.A of our Petition. The revenue requirements and proposed GUIC Rider Rate Adjustment Factors are discussed in Section VIII.A of our Petition. Details of our revenue requirement request can be found in Attachments F,G,H,I,K,O,P,Q,R.
(vi) the magnitude and timing of any known future gas utility projects that the utility may seek to recover under this section;	Details of the magnitude and timing of known future TIMP projects through 2022 can be found in Attachment C1. A higher-level summary of the magnitude and timing of costs through 2026, by program, can be found in Attachments C and Attachment F. Details of the magnitude and timing of our DIMP projects can be found in Attachment D1, and higher-level information of magnitude and timing can be found in Attachments D and Attachment F. Details of the magnitude and timing of our Mandated Relocation projects can be found in Attachment D, and higher-level information of magnitude and timing can be found in Attachment F.
(vii) the magnitude of GUIC in relation to the gas utility's base revenue as approved by the commission in the gas utility's most recent general rate case, exclusive of gas purchase costs and transportation charges; (viii) the magnitude of GUIC in relation to the gas utility's capital expenditures since its most recent general rate case; and	A comparison of our requested GUIC Rider recovery in relation to our approved base revenue and capital expenditures is shown in Section VII.H of our Petition and Attachment M.

Compliance Matrix

Petition Requirements	Reference
(ix) the amount of time since the utility last filed a general rate case and the utility's reasons for seeking recovery outside of a general rate case.	The Company last filed a general rate case in 2009, where the Commission approved base rates based on a 2010 test year. We note this Commission approval in Section VII.H of our Petition. We discuss our reasons for seeking recovery through the GUIC Rider mechanism in Sections III, VII.A, VII.B, and VII.D of our Petition.
Subd. 6. **Rate of return.** The return on investment for the rate adjustment shall be at the level approved by the commission in the public utility's last general rate case, unless the commission determines that a different rate of return is in the public interest.	We are requesting the rate of return comparable to the rate of return approved in our 2016 electric general rate case and approved in our 2018 through 2020 GUIC Rider requests. We discuss this in Section IX of our Petition.
In the Matter of the Petition of Northern States Power Company for Approval of Deferred Accounting for Costs to Comply with Gas Pipeline Safety Programs **Minnesota Public Utilities Commission** ORDER **January 28, 2013 Docket No. G002/M-12-248**	
1.g. Xcel shall include in the initial filing in its next natural gas rate case, justification and supporting testimony regarding all deferred TIMP and DIMP costs for which it seeks rate recovery.	No gas general rate case since Order was issued. Currently there are no deferred TIMP and DIMP costs, as noted in Section VII.E of our Petition.

Compliance Matrix

Petition Requirements	Reference
In the Matter of the Petition of Northern States Power Company, d/b/a Xcel Energy, for Approval of a Gas Utility Infrastructure Cost Rider (GUIC) True-up Report for 2015, Forecasted 2016 GUIC Revenue Requirement, and Revised GUIC Adjustment Factors **Minnesota Public Utilities Commission** ORDER REQUIRING UPDATED REPORT, APPROVING RIDER RECOVERY, AND REQUIRING METRICS TO EVALUATE GUIC EXPENDITURES **August 18, 2016 Docket No. G002/M-15-808**	
2. Xcel shall develop metrics to measure the appropriateness of GUIC expenditures, to be included in future GUIC Rider filings, and provide stakeholders the opportunity for meaningful involvement. Each metric should include reconciliation to the pertinent TIMP/DIMP rules, and/or if not tied to TIMP/DIMP requirement, the Company must identify what goal, benefit, and/or requirement it addresses.	We provide a discussion of the proposed performance metrics in Section X of our Petition. We appeared to reach a consensus with the Department on a set on initial metrics in the 2020 GUIC Rider filing docket. The Commission decided to formally approve those metrics in their Order approving that year's request. Further metrics were proposed in our 2021 GUIC Rider filing to account for new programs included in the rider. The results of our proposed metrics are provided in Attachment U.

Compliance Matrix

Petition Requirements	Reference
8. Xcel shall modify the proposed customer notice to read: This month's Resource Adjustment includes ~~the addition of the~~ an updated Gas Utility Infrastructure Cost Adjustment (GUIC), which recovers the costs of assessments, modifications and replacement of natural gas facilities as required by state and federal safety programs. The GUIC portion of the Resource Adjustment is $x.xxxx per therm for Residential customers; $x.xxxx per therm for Commercial Firm customers; $x.xxxx per therm for Commercial Demand Billed customers; and $x.xxxx per therm for Interruptible customers. Questions? Contact us at 1-800-895-4999.	The proposed customer notice for our 2022 request reflects this language. We show the proposed customer notice in Section VIII.D.2 of our Petition.
In the Matter of the Petition of Northern States Power Company, d/b/a Xcel Energy, for Approval of a Gas Utility Infrastructure Cost Rider (GUIC) True-up Report for 2016, Forecasted 2017 GUIC Revenue Requirement, and Revised GUIC Adjustment Factors **Minnesota Public Utilities Commission** ORDER APPROVING RIDER RECOVERY WITH MODIFICATIONS **February 8, 2018 Docket No. G002/M-16-891**	
5. Xcel shall continue to discuss with other parties, including the Department and the OAG, proposed performance metrics and ongoing evaluation of reporting requirements in future GIUC proceedings.	The Company met with the Department, OAG, MPCA, and Commission staff on September 26, 2018 and August 27, 2019. We also had informal discussions with parties in late 2019/early 2020. We discuss the work done with parties in Section X of our Petition.

Compliance Matrix

Petition Requirements	Reference
6. Xcel shall continue to provide, in future GUIC filings, specific information about each individual project in the GUIC rider that sufficiently (1) describes what the project is, (2) explains why the project is necessary, (3) discusses what benefits ratepayers will receive from the project, and (4) identifies the agency, regulation, or order that requires the project.	A discussion of each TIMP program is provided in Section IV of our Petition, with details of each project in Attachments C and C1. A discussion of each DIMP program is provided in Section V of our Petition, with details of each project in Attachment D and D1. A discussion of our Mandated Relocation program is provided in Section VI of our Petition, with details of each project in Attachment D.
8. The Commission approves a revised sales forecast based on the Company's regression model results before monthly sales and demand-side management (DSM) adjustments as set forth by the Company in Attachment F of its reply comments for the 2017 GUIC rider.	Not applicable for this filing. 12 months of weather-normalized actual sales data was used to calculate proposed rate factors.
10. Xcel shall provide a cost/benefit analysis in its initial Petition in future GUIC rider filings if the Company wishes to receive accelerated recovery of sewer lines costs on a going forward basis.	Required work related to Sewer and Gas Line Conflict remediation has been completed and no work is included in our 2022 GUIC Rider request.
In the Matter of the Petition of Northern States Power Company, d/b/a Xcel Energy, for Approval of a Gas Utility Infrastructure Cost Rider True-up Report for 2017, the Forecasted 2018 Revenue Requirements, and Revised Adjustment Factors **Minnesota Public Utilities Commission** ORDER APPROVING RIDER RECOVERY WITH MODIFICATIONS **August 12, 2019 Docket No. G002/M-17-787**	

Compliance Matrix

Petition Requirements	Reference
15. The Commission directs Xcel, the Department, and the OAG to continue discussion on the establishment of performance metrics in future GUIC proceedings.	The Company met with the Department, OAG, MPCA, and Commission staff on September 26, 2018 and August 27, 2019. We also had informal discussions with parties in late 2019/early 2020. We discuss the work done with parties in Section X of our Petition.
16. In all future GUIC rider Petitions, Xcel must include the reporting required by Minn. Stat. § 216B.1635, subd. 4(2)(iii).	Our estimate of the cost and net book value of the assets in our currently approved base rates retired as a part of our GUIC projects are discussed in Section VII.C of our Petition and shown in Attachment J. The estimated salvage value of our GUIC projects is shown in Table 6 in Section VII.G of our Petition.
17. In all future GUIC rider Petitions, Xcel must include only incremental rate base amounts in its GUIC rider rate base.	The costs removed from our GUIC Rider request to ensure that only incremental costs are included are discuss in Section VII.C of our Petition. Examples of adjustments include removal of distribution valve replacement and mandated relocation costs included in current base rates. We also adjust to account for assets retired as a part of the GUIC work and have removed internal capitalized costs.
18. Xcel must include, prior to applying its calculated property tax rate, only the incremental property tax expense amount for all GUIC years by adjusting the original cost of GUIC projects by the original cost of plant assets replaced by (or retired through) the GUIC projects in each year.	Adjustment for the property tax calculation is discussed in Section VII.C.1 of our Petition and shown in Attachment J.
22. In all future GUIC filings, Xcel must include historical and projected GUIC revenue requirements, rates, and recoveries within a single tracker for each year.	This information is shown in Attachment R.

Compliance Matrix

Petition Requirements	Reference
In the Matter of the Petition of Northern States Power Company, d/b/a Xcel Energy, for Approval of a Gas Utility Infrastructure Cost Rider True-Up Report for 2018, the Forecasted 2019 Revenue Requirements, and Revised Adjustment Factors **Minnesota Public Utilities Commission** ORDER AUTHORIZING RIDER RECOVERY WITH MODIFICATIONS **January 9, 2020 Docket No. G002/M-18-692**	
3. Xcel shall not apply prorated accumulated deferred income tax (ADIT) to rate base when it is not required by the Internal Revenue Service for normalization purposes.	As our requested recovery period begins after the end of our requested test year, there is no need to prorate ADIT. This issue is discussed in Petition, Section VIII.B.
5. Xcel shall use the most recent 12 months of actual natural gas sales to calculate the final GUIC rate.	12 months of weather-normalized actual sales data was used to calculate proposed rate factors. This is noted in Section VIII.A.3 of the Petition. Sales forecast amounts are shown in Attachment R.
6. The Commission denies Xcel's request for a carrying charge in the GUIC tracker account.	Request does not include carrying charge.
7. Xcel shall remove and exclude from the GUIC rider costs related to low-risk infrastructure replacement that is not mandated by government regulations or public work requirements.	We removed all known low-risk infrastructure work from the 2018 through 2022 revenue requirements.
8. The return on the capital costs incurred to remediate the system's MAOP data gaps shall be limited to Xcel's weighted long-term cost of debt.	Our request includes an adjustment to limit the return on 2018 through 2020 and 2022 capital costs for the MAOP program to the Company's weighted long-term cost of debt. There was no MAOP work completed in 2021. The adjustment is reflected in the 2018 through 2022 regulatory treatment adjustments in Attachments O and P.

Compliance Matrix

<table>
<tr><th>Petition Requirements</th><th>Reference</th></tr>
<tr><td>9. Xcel shall remove the costs of Overhead, Transportation, and Other, totaling $8,157,695, from the GUIC rider.</td><td>Our request includes adjustments to remove $10.2 million from the revenue requirement calculations for 2022. This reflects the amount of overheads, transportation, and other costs removed from 2018 through 2021 GUIC projects.

The adjustment is reflected in the 2020 through 2022 regulatory treatment adjustments in Attachments O and P.

We discussed this in Section VII.C.2 of our Petition.</td></tr>
<tr><td>10. The Commission approves the following cost of capital for Xcel's 2019 GUIC Rider:

<table><tr><th></th><th>Capital Structure</th><th>Cost</th><th>Weighted Cost</th></tr><tr><td>Long-Term Debt</td><td>45.81%</td><td>4.75%</td><td>2.18%</td></tr><tr><td>Short-Term Debt</td><td>1.69%</td><td>4.31%</td><td>0.07%</td></tr><tr><td>Common Equity</td><td>52.50%</td><td>9.04%</td><td>4.75%</td></tr><tr><td>Rate of Return</td><td></td><td></td><td>7.00%</td></tr></table></td><td>Calculation of revenue requirements for 2020 through 2022 are based on this approved capital structure. Issue is discussed in section IX of our Petition and shown in Attachment L.</td></tr>
<tr><td>11. Xcel shall exclude from its 2019 and future GUIC rider revenue requirements all costs related to emergency sewer-conflict work. Accordingly, Xcel shall adjust its 2019 GUIC rider revenue requirement to remove (1) $50,000 for these costs applicable to 2019, and (2) $371,364 for costs that were erroneously included in the rider in previous years.</td><td>An adjustment was previously included for our 2019 revenue requirement to reflect the removal of emergency sewer-conflict work. No adjustment is currently necessary as no emergency sewer work is included in our 2020 through 2022 requests.</td></tr>
<tr><td>14. Xcel shall continue to improve its risk assessment reporting in future GUIC filings, with the goal of providing better explanations of the Company's assets.</td><td>We discuss our continued improvement process for risk assessments in Section VII.A.3 of the Petition.</td></tr>
</table>

Compliance Matrix

Petition Requirements	Reference
15. Xcel shall provide consequence class information for both plastic and steel mains and services in future GUIC filings.	Consequence class information for mains and services is included in Attachments C, C2, D, and D2 and is discussed in Section VII.A.3 of the Petition.
16. Xcel shall develop full risk-assessment profiles for the TIMP Transmission Pipeline Assessment program and the TIMP Programmatic/MAOP Remediation program.	Full risk-assessments profiles are included for the TIMP programs. Issue is discussed in Section VII.A.3 of our Petition and information is shown in Attachments C and C2.
18. The Department and Xcel shall continue efforts to reach a consensus on establishing performance metrics in future GUIC Petitions.	We provide a discussion of the proposed performance metrics in Section X of our Petition. We appeared to reach a consensus with the Department on a set on initial metrics in the 2020 GUIC Rider filing docket. The Commission decided to formally approve those metrics in their Order approving that year's request. Further metrics were proposed in our 2021 GUIC Rider filing to account for new programs included in the rider. The results of our proposed metrics are provided in Attachment U.
In the Matter of the Petition of Northern States Power Company for Approval of a Gas Utility Infrastructure Cost Rider True-Up Report for 2019, Revenue Requirements for 2020, and Revised Adjustment Factors **Minnesota Public Utilities Commission** ORDER AUTHORIZING RIDER RECOVERY WITH MODIFICATIONS **May 3, 2021 Docket No. G002/M-19-664**	

Compliance Matrix

Petition Requirements	Reference
3. Xcel Energy shall use the most recent 12 months of actual natural gas sales to calculate the final GUIC rate.	12 months of weather-normalized actual sales data was used to calculate proposed rate factors. This is noted in Section VIII.A.3 of the Petition. Sales forecast amounts are shown in Attachment R.
4. The "return on" the capital costs incurred to remediate the system's MAOP data gaps shall be limited to Xcel Energy's weighted long-term cost of debt over the life of these capital expenditures.	Our request includes an adjustment to limit the return on 2018 through 2020 and 2022 capital costs for the MAOP program to the Company's weighted long-term cost of debt. There was no MAOP work completed in 2021. The adjustment is reflected in the 2018 through 2022 regulatory treatment adjustments in Attachments O and P.
5. The Company's proposed recovery of GUIC internal capital costs for Overheads, Other, and Transportation is denied, to the extent these costs are not removed elsewhere.	Our request includes adjustments to remove $10.2 million from the revenue requirement calculations for 2022. This reflects the amount of overheads, transportation, and other costs removed from 2018 through 2021 GUIC projects. The adjustment is reflected in the 2020 through 2022 regulatory treatment adjustments in Attachments O and P. We discussed this in Section VII.C.2 of our Petition.

Index of Attachments

Attachment	Item
A	Compliance Matrix
B	Index of Attachments
C	TIMP Project Overview
C1	TIMP Project Detail
C2	TIMP Quantitative Risk Assessment Scores
D	DIMP and Mandatory Relocation Project Overviews
D1	DIMP Project Detail
D2(a)	DIMP Quantitative Risk Assessment Scores
D2(b)	DIMP Replacements Risk Assessment Scores
E	Minnesota Statute § 216B.1635
F	Capital TIMP, DIMP, and Mandated Relocations Expenditures Actual and Forecast Through 2026
G	TIMP Capital Revenue Requirements for 2022
H	DIMP and Mandated Relocations Capital Revenue Requirements for 2022
I	Current Mandated Relocations Revenue Requirement Comparison to Last Approved Natural Gas Rate Case Docket No. G002/GR-09-1153
J	Calculation of Estimated Annual GUIC-Related Retirements for 2012-2022
K	TIMP and DIMP O&M Actuals and Budget Estimates for 2020-2026
L	Universal Inputs

Index of Attachments

Transmission Integrity Management Program
Overview and Project Detail

I. TIMP OVERVIEW

Our Transmission Integrity Management Program (TIMP) was developed pursuant to the Pipeline Safety Improvement Act of 2002 and the regulations promulgated by the Department of Transportation's (DOT) Office of Pipeline Safety. On December 17, 2004, we published a TIMP manual, in accordance with 49 C.F.R. § 192, Subpart O. The TIMP manual specifies procedures for gathering, integrating, and analyzing data; assessing pipelines; and implementing remedial actions to improve pipeline safety.

At its core, the TIMP can be summarized in three steps:

1) understand your assets,
2) risk evaluation, and
3) risk mitigation.

Our processes for these three steps are outlined below.

1. Understand Your Assets

For the TIMP to be successful, the Company needs to gather, evaluate, and integrate data in order to better understand our gas transmission system. The TIMP process has allowed us to update asset records and improve overall asset knowledge, as well as information on the surrounding area. Fundamentally, aspects about the physical and operating characteristics and ongoing integrity of a system need to be known. These aspects include date of installation and length, size, material, and operating pressure of the pipeline. In addition, information about the installation location of the gas transmission assets is also important, including class location, geotechnical data and structures in the area.

Managing the risk of gas transmission assets is an ongoing process and evolves over time. The Company's baseline assessment plan prioritizes pipeline segments based on many factors, including population density, and the likelihood and severity of potential failure. The plan is updated regularly, incorporating new information on the health and condition of the assets and other system information.

2. Risk Evaluation

The Company evaluates the threats to a given pipeline that may pose a safety or reliability risk, with pipeline segments in populated areas[1] receiving the highest priority. Pipeline asset information from existing records, operating data, and input from subject matter experts (SMEs) is initially used to identify potential threats. Industry guidance materials, such as those published by the American Society of Mechanical Engineers, have also been incorporated into the threat identification process.

The Company evaluates our gas transmission pipelines for the following threats:

- External corrosion,
- Internal corrosion,
- Stress corrosion cracking,
- Manufacturing and related defects,
- Construction defects,
- Equipment failures,
- Third-party damage,
- Incorrect operations, and
- Weather-related and outside force damage.

Xcel Energy's risk assessment process identifies events or conditions that could cause or increase the likelihood or consequence of pipeline failure. The condition and physical characteristics of its gas assets, along with industry guidance and directives, are incorporated into risk evaluations and subsequent risk mitigation strategies. This risk evaluation process provides information to facilitate decisions about the prioritization of health and condition assessments, the frequency of assessment, which assessment methodology is most appropriate, and in certain cases information to substantiate the need for replacement of an asset.

3. Risk Mitigation

The Pipeline Safety Action Plan[2] issued by the DOT in 2011 called for gas system operators to accelerate their efforts to replace pipeline facilities and take other actions to enhance the integrity of natural gas facilities. We integrate the results from our risk evaluation processes into determining planned risk mitigation activities. Typical risk

[1] Known as high consequence areas (HCA).
[2] https://www.phmsa.dot.gov/regulations-fr/rulemaking/2019-20306.

mitigation measures include excavation of the pipeline, repair or complete removal of the anomaly, and reducing the operating pressure of the system.

Other risk mitigation activities focus on reducing consequences in the event of a failure. An example is the installation of specialized valves that can remotely or automatically shut down a pipeline, limiting or reducing the consequence in the event of a pipeline failure or rupture. These specific valves are commonly referred to as automatic shut-off valves (ASVs) or remote-controlled valves (RCVs).

In March of 2016, the Pipeline and Hazardous Materials Safety Administration (PHMSA) issued a Notice of Proposed Rulemaking (NPRM) under Docket No. PHMSA-2011-0023. This NPRM proposed revisions to the Pipeline Safety Regulations applicable to the safety of onshore gas transmission and gathering pipelines. PHMSA proposed changes to the integrity management (IM) requirements as well as changes to non-IM requirements. The 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 second rule is scheduled to be published in 2022 and the third rule, which addresses expansion of regulated gas gathering pipelines is also expected in 2022.

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 2022 GUIC includes MAOP reconfirmation projects and costs needed to comply with this new rule.

The specific IM requirement changes from the first rule include:

- Expansion of IM beyond high consequence areas (HCAs),
- Establishment of moderate consequence areas (MCAs),
- Maximum Allowable Operating Pressure (MAOP) validation and reconfirmation,
- Materials verification requirements, and
- Spike testing.

The IM requirement changes proposed in the second rule include:

- Repair criteria for assessments in HCAs and MCAs,
- Corrosion control,
- Risk models,

- New construction and repairs,
- Management of change, and
- Inspection of pipelines following weather events.

Finally, the IM requirement changes proposed in the third rule address gas gathering lines assessments.

In summary, risk mitigation can include initiating preventative measures, more frequent inspections and health and condition assessments, utilizing specialized technology to address a specific threat, repair or replacement of anomalous conditions along a pipeline, or complete replacement of a given asset. As part of its comprehensive IM program, the Company has identified different risk mitigation strategies intended to reduce the likelihood of consequences posed by threats.

The 2022 TIMP project detail is presented in Attachment C1 and the risk assessment scores for 2022 TIMP projects are presented in Attachment C2.

II. 2022 TIMP PROJECTS

In this filing, the Company requests recovery of the following operational and maintenance (O&M) and capital expenditures associated with three 2022 TIMP programs:

2022 Estimated TIMP Project Costs
($ Millions)

Program	2022 Capital[3]	2022 O&M
Transmission Pipeline Assessments	$0.60	$0.60
Programmatic Replacement / MAOP Remediation	$1.36	$0.00
Casing Renewal	$2.38	$0.00
Total 2022 TIMP Expenditures	**$4.34**	**$0.60**
Total 2022 Minnesota TIMP Revenue Requirements	**$13.90[4]**	**$0.53[5]**

[3] Estimated capital costs include estimated removal costs. Details can be seen in Attachment C1.
[4] Capital costs represents the eligible calculated revenue requirements, which include debt and equity return on rate base, property taxes, current and deferred taxes, and book depreciation.
[5] $480,000 of O&M amount is recovered through base rates and is removed from our GUIC Rider revenue requirement.

These projects, except for Casing Renewal, were included in the Company's 2015 through 2021 Gas Utility Infrastructure Cost (GUIC) Rider petitions.[6] The Casing Renewal project began in 2021. The capital-related cost estimates for 2022 exclude internal labor and include materials, outside services, transportation, and a portion of construction overheads. The 2022 project detail for each project is presented in Attachment C1 and the risk assessment scores for 2022 projects are presented in Attachments C2.

Projects planned for completion in 2022 and outlined below will begin during the 2nd and 3rd quarters of 2022 and will be placed in service during the 3rd and 4th quarters of 2022.

1) Transmission Pipeline Assessments
Work Breakdown Structure (WBS):[7] E.0000018.052 (Capital); A.0008610.004.002.002 (O&M)

2022 Estimated Project Costs:
$0.60 million Capital expenditure
$0.60 million O&M expenditure

Project Summary and Scope
This project is an ongoing program, beginning in 2002, of health and condition assessments on gas transmission lines. Federal regulations require assessment of gas transmission pipelines using In Line Inspection (ILI), pressure testing or direct assessment.[8] Regular assessment of pipelines is based on the health and condition of the assets as well as an evaluation of the risks and threats.

The Company met the HCA Baseline Assessment requirements,[9] and is now focusing on the re-assessment of pipelines in HCAs as well as assessing remaining transmission pipe beyond HCAs. The program includes requirements to ensure the safe operation of all gas transmission pipelines under American Society of Mechanical Engineers Standard B31.8S.[10]

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[6] Docket Nos. G002/M-14-336, G002/M-15-808, G002/M-16-891, G002/M-17-787, G002/M-18-692, G002/M-19-664 and G002/M-20-799.
[7] WBS has replaced the parent project number given for projects in previous versions of our GUIC Rider Filing. This switch in numbering has been due to a change in our work and asset management system. The previously-used parent projects generally correspond with one WBS.
[8] The requirements are further defined in the Company's TIMP manual.
[9] Federal requirements stipulated that all pipelines in HCAs needed to be assessed by December 17, 2012.
[10] This standard is incorporated by reference into 49 C.F.R. § 192, Subpart O.

The Company has selected ILI as the primary assessment methodology due to its superior ability to provide detailed information regarding the current pipeline condition over the entire length of the line. However, based on the threats to which a pipeline is susceptible and the feasibility of assessment methodologies, the Company may choose to utilize direct assessment and pressure testing as complementary assessment methodologies.

ILI requires unique inspection equipment and specialized knowledge. Outside vendors maintain fleets of such tools, which may cost upwards of $1 million, and have the expertise needed to conduct an ILI. Additionally, ILI tools are constantly being re-engineered to gather more information about the health and condition of pipelines which makes owning such tools uneconomic at this time. Working with outside contractors to complete this work provides access to specialized expertise and equipment that is outside of the Company's normal scope of business and ensures that assessments are completed safely and efficiently.

Federal regulation requires the Company to apply knowledge gained from all assessments to all similar pipelines within the system, both inside and outside HCAs. While the initial investment incurred to make lines accessible to ILI tools can be significant, the benefit of this investment is the ability to assess for multiple threats, gather a more comprehensive profile of the integrity of a pipeline, and complete assessments over longer distances.

There are two distinct elements in the selection and prioritization of work to be performed in this program: the assessment of pipelines and addressing issues found during the assessment. Assessment work in prior years was primarily driven by the date and type of the previous assessment. Findings from initial assessments can and do impact the timing of subsequent assessments, with a maximum interval of at least once every seven years. The objective is to monitor anomalies found on the pipelines, assess if they are stable or deteriorating, and mitigate the anomaly before it becomes a threat to public safety.

The Company evaluates anomalous conditions found during the assessment including the location of the anomaly, severity, nature (threat cause), and type of feature (e.g., dent or metal loss). The potential for other locations along the pipeline or in the system where similar conditions may exist is also considered and evaluated. Based on this evaluation, the Company categorizes the anomaly into an immediate condition, one–year condition, or monitored condition.

These conditions are used to prioritize remediations. A typical remediation may include excavation and repair, removal of the anomaly, and/or reducing the operating pressure of the system.

The cost of TIMP assessments is highly variable and depends on the assessment method, pipeline age, configuration, as well as seasonal and operational constraints.

The scope of work in 2022 includes three projects on the following lines:

Line/Loop	Type	Project Length (mi)	Project Type
Wescott Line 8-inch	Baseline ILI	1.6	Capital/O&M
Wescott Line 12-inch	Baseline ILI	1.6	Capital/O&M
Island Line North	Direct Examination	0.01	O&M

- **Wescott Line 8-inch:** This project involves making the line capable of in-line inspection by performing make-piggable modifications and then assessing approximately 1.6 miles of 8-inch pipeline utilizing in-line inspection. The make-piggable modifications commenced in 2021 and the assessment is anticipated to be completed in 2022. Most repairs of anomalies from ILI are classified as O&M costs but some repairs are capitalized.

- **Wescott Line 12-inch:** This project involves the make-piggable modifications and assessment of approximately 1.6 miles of 12-inch pipeline utilizing in-line inspection. The make-piggable modifications commenced in 2021 and the assessment is anticipated to be completed in 2022. Most repairs of anomalies from ILI are classified as O&M costs but some repairs are capitalized.

- **Island Line North:** This project will be a direct examination project. The entirety of this pipeline segment, approximately 20 feet, will be exposed and inspected for anomalies. All costs for this project are expected to be classified as O&M.

Costs for direct assessment and direct examination are classified as O&M per the Company's capitalization policy. Due to the generally non-invasive nature of direct assessment activities, the cost is generally related to the length of pipe evaluated with some variability due to the route, depth, and environment of the

pipeline (open field, natural forest, in the road ditch, under a major highway, etc.).

The costs to modify pipelines for initial ILI runs are capital costs per the Company's capitalization policy. This includes vendor costs associated with the use of specialized ILI tools and the advanced analysis required to interpret the results. Once an initial ILI assessment is completed on a specific section of pipeline, all costs for subsequent assessment by ILI will be O&M. The costs for assessment by pressure test including test equipment, test medium, and disposal of medium will be classified as O&M in all cases.

Repairs to existing pipelines that do not involve cut-out of the existing pipe are defined by the capitalization policy as O&M. If a cut-out is required, capitalization policy defines the O&M or capital designation based upon the length of the required cut-out.

2) Programmatic Replacement/MAOP Remediation
WBS: E.0000018.055 (Capital)

2022 Estimated Project Costs:
$1.36 million Capital expenditure
$0.00 million O&M expenditure

Project Summary and Scope
The MAOP Remediation Advisory Bulletin[11] issued by PHMSA in 2012, and contained in the Federal Register, specifically addressed pipeline safety in terms of verification of records. The initial language in the advisory required operators to "take action as appropriate to assure that all MAOP and MOP [Maximum Operating Pressure] are supported by records that are traceable, verifiable and complete." As discussed earlier, the first of the three new PHMSA Gas Transmission and Gathering Pipeline final rules was published in October of 2019. The focus of the first rule is records retention, material verification, MAOP reconfirmation and integrity assessments outside of HCAs.

The codes and rules around material testing, welding standards, and record keeping have evolved over time. Consequently, the Company acknowledges there are gaps in data regarding our facilities that need to be closed to meet the

[11] ADB-12-06, Docket No. PHMSA-2012-0068.

Federal standards. Some data gaps are more critical than others. For instance, the construction and maintenance data of gas transmission pipelines and operating pressures are critical to support the safe operation of these assets. The MAOP initiative focuses on obtaining adequate proof of MAOP records and ensuring that they become part of the Company's official system of record. Remediation of data gaps is also part of the scope.

In the new rule published on October 1, 2019, PHMSA required operators to reconfirm MAOP for the following categories:

1) Grandfathered pipelines in HCAs, MCAs, and Class 3 and 4 locations
2) Pipelines for which records to support the MAOP are not traceable, verifiable, and complete in:
    a. HCAs,
    b. Class 3 and 4 locations

Pipelines are prioritized for renewal and/or pressure tested based on a variety of factors and competing demands, including:

- Location within or outside of HCAs,
- Class Location,
- Type of documentation missing, and
- Criticality to system.

The MAOP review portion of the work will be completed by hiring contract engineering and research analysts. The Company's internal engineering department will assist in the design of the remediation projects with the project management group's oversight. Material procurement will be completed using our current agreements with our vendors and using our Company sourcing group to ensure we receive the best prices and delivery schedules.

The cost estimates for this program are based on our experience with similar assets in prior years. Actual results from assessments will drive the overall scope and timing of these capital expenditures.

In 2022 we will complete two projects on the following lines:

Line/Loop	Type	Project Length (mi)	Project Type
East County Line	Pressure Test/Replace	1.5	Capital
East County Line (West of the Mississippi)	Pressure Test	1.6	Capital

- **East County Line:** This project involves pressure testing approximately 5,700 feet and replacing approximately 2,400 feet of the East County Line pipeline. Engineering on the project will commence in 2022 with construction occurring in 2023.
- **East County Line West of the Mississippi:** This project involves pressure testing approximately 8,500 feet along the East County Line West of the Mississippi pipeline. Engineering on the project will commence in 2022 with construction occurring in 2023.

Cost associated with pressure testing and replacement are classified as capital per the Company's capitalization policy.

3) Casing Renewal
WBS: E.0010073.006 (Capital)

2022 Estimated Project Costs:
$2.38 million Capital expenditure
$0.00 million O&M expenditure

Project Summary and Scope
This project is similar to the shorted casing – Distribution Project (see prior discussion). As an integrated part of the Company's DIMP plan, similar needs have been identified as part of TIMP for Transmission pipelines, which is a principle requirement of managing risk under integrity management programs. Metallic pipes need to remain isolated from each other to reduce corrosion risk. The Company's Pipeline and Compliance Standards Manual section 9.9.9 and 49 C.F.R. § 192.467 provide that for all metallic carrier pipe installed in a metallic casing, the Company shall take pipe-to-soil and casing-to-soil readings annually to determine whether the two pieces of pipe are in contact with each other, and thereby considered to be shorted. If the Company is unable to verify those readings and/or the readings indicate that both the pipe and casing are in contact, the Company shall perform gas leak surveys at a minimum of

two times per year – four times per year in business districts – given the potential for corrosion between the two pieces of pipe.

Under this project, the Company isolates pipes and casings that are determined to be shorted (or unable to take readings), mitigates leakage risk for sites that indicate the presence of corrosion or where testing has not occurred, and replaces pipe where it is not possible to test or isolate the pipe.

This project started in the 2021 construction season and shall continue annually until all casings risks on the program list have been mitigated. The locations proposed for replacement in 2022 and beyond are based on risk analysis completed in 2020.

The 2022 scope of work includes the following casing:

Casing Location	Pipe Size	Leaking	Shorted
24 inch High Pressure at Hardman and 494	24"	N	Unknown

The existing 24-inch high pressure transmission pipeline at Hardman and I-494 has a casing without test leads and therefore pipe to soil readings are not possible. This project entails renewing the I-494 crossing with new and uncased 24-inch steel piping.

III. 2021 TIMP PROJECTS

In 2021, there are three projects under the TIMP:

1) Transmission Pipeline Assessments,
2) ASVs and RCV, and
3) Casing Renewal

The TIMP project costs included in the Company's 2021 GUIC Rider Petition, Docket No. G002/M-20-799, as compared to updated 2021 cost estimates[12] based on emerging project developments and actual construction activity, are provided below:

[12] Based on actual costs as of 6/30/2021 and estimates from 7/1/2021 through 12/31/2021.

2021 Estimated TIMP Project Costs
($ Millions)

Program	2021 Capital, As Filed[13]	2021 Capital Estimates	Capital Variance	Capital Variance %	2021 O&M, As Filed	2021 O&M Estimates	O&M Variance	O&M Variance %
Transmission Pipeline Assessments	$1.50	$1.50	$0.00	0.00%	$1.70	$1.70	$0.00	0.00%
ASV/RCV	$0.42	$0.17	($0.25)	(59.52%)	$0.00	$0.00	$0.00	0.00%
Casing Renewal	$0.30	$0.30	$0.00	0.00%	$0.00	$0.00	$0.00	0.00%
Total 2021 TIMP Expenditures	**$2.22**	**$1.97**	**($0.25)**	**(11.26%)**	**$1.70**	**$1.70**	**$0.00**	**0.00%**
Total 2021 Minnesota TIMP Revenue Requirement[14]	$14.08	$13.81	($0.27)	(1.90%)	$1.03	$1.67	$0.64	62.54%

The capital-related cost estimates for 2021 exclude internal labor and include materials, outside services, transportation, and a portion of construction overheads not related to internal labor. TIMP projects planned for completion in 2021 and outlined below generally began during the 2nd and 3rd quarters of 2021 and will begin service during the 3rd and 4th quarters of 2021.

[13] Estimated capital costs include estimated removal costs. Detail of numbers shown in Attachment C1 included in our 2021 GUIC Rider Filing, Docket No. G002/M-20-799.
[14] Capital costs represents the eligible calculated revenue requirements, which include: debt and equity return on rate base, property taxes, current and deferred taxes, and book depreciation. $480,000 of O&M amount is recovered through base rates and is removed from our GUIC Rider revenue requirement.

1) Transmission Pipeline Assessments
WBS: E.0000018.052 (Capital); A.0008610.004.002.002 (O&M)

Project Summary and Scope

The scope of assessments in 2021 includes three projects on the following lines:

Line/Loop	Type	Project Length (mi)	Project Type
Wescott Line 8-inch	Baseline ILI	1.6	Capital
Wescott Line 12-inch	Baseline ILI	1.6	Capital
East County Line 20-inch	DA/ILI	10.3	Capital/O&M
Crossover Line 12-inch	Capital Repair	0.1	Capital

2021 Estimated Project Costs
($ Millions)

	2021 Capital, As Filed	2021 Capital Estimates	Variance	% Capital Variance	2021 O&M, As Filed	2021 O&M Estimates	Variance	% O&M Variance
Capital / O&M Expenditures	$1.50	$1.50	$0.00	0.00%	$1.70	$1.70	$0.00	0.00%

Variance Explanation

Capital: None.

O&M: None.

2) ASVs and RCVs
WBS: E.0000018.041 (Capital)

Project Summary and Scope

The determination of the applicable type of ASV or RCV to install in each situation is based on an overall risk analysis, evaluation of system operational needs, and engineering review. The locations proposed for installation in 2021 are based on a risk analysis completed in 2019.

The scope of work in 2021 includes the following valve:

Valve Location	Size	Description
South St. Paul Station Crossover Interconnect	12 inch	Install a new actuator and controls between Crossover Line and Rosemount Line interconnect.

2021 Estimated Project Costs
($ Millions)

	2021 Capital, As Filed	2021 Capital Estimates	Variance	% Capital Variance	2021 O&M, As Filed	2021 O&M Estimates	Variance	% O&M Variance
Capital / O&M Expenditures	$0.42	$0.17	($0.25)	(59.52%)	$0.00	$0.00	$0.00	0.00%

Variance Explanation

Capital: The decrease in capital expenditures is due to updated cost estimates with reductions in labor and materials. As engineering began at the South St. Paul Station Crossover Interconnect, the number of valves requiring automation and cost of equipment to complete were both less than originally estimated.

O&M: None.

3) Casing Renewal
WBS: E.0010073.006 (Capital)

2021 Estimated Project Costs:
$0.30 million Capital expenditure
$0.00 million O&M expenditure

Project Summary and Scope
This project started in the 2021 construction season and shall continue annually until all casings risks on the program list have been mitigated. The locations proposed for replacement in 2021 are based on risk analysis completed in 2020.

The 2021 scope of work includes the following casing:

Casing Location	Pipe Size	Leaking	Shorted
16 inch Rosemount Line Crossing at Cahill	16"	N	Y

2021 Estimated Project Costs
($ Millions)

	2021 Capital, As Filed	2021 Capital Estimates	Variance	% Capital Variance	2021 O&M, As Filed	2021 O&M Estimates	Variance	% O&M Variance
Capital / O&M Expenditures	$0.30	$0.30	$0.00	0.00%	$0.00	$0.00	$0.00	0.00%

Variance Explanation

Capital: None.

O&M: None.

IV. 2020 TIMP PROJECTS

In 2020, there were three projects under the TIMP:

1) Transmission Pipeline Assessments,
2) ASVs and RCVs, and
3) Programmatic Replacements and MAOP Remediation.

Following are the TIMP project costs included in the Company's 2020 GUIC Rider Petition, Docket No. G002/M-19-664, as compared to actual 2020 costs.

2020 Actual TIMP Project Costs
($ Millions)

Program	2020 Capital, As Filed[15]	2020 Capital Actuals[16]	Capital Variance	Capital Variance %	2020 O&M, As Filed	2020 O&M Actuals	O&M Variance	O&M Variance %
Transmission Pipeline Assessments	$2.33	$0.48	($1.85)	(79.40%)	$1.70	$1.70	$0.00	0.00%
ASV/RCV	$0.75	$0.44	($0.31)	(41.33%)	$0.00	$0.00	$0.00	0.00%
Programmatic Replacement/MAOP Remediation	$32.08	$24.43	($7.65)	(23.85%)	$0.00	$0.00	$0.00	0.00%
Total 2020 TIMP Expenditures	**$35.16**	**$25.36**	**($9.80)**	**(27.87%)**	**$1.70**	**$1.70**	**$0.00**	**0.00%**
Total 2020 Minnesota TIMP Revenue Requirement[17]	**$10.53**	**$9.16**	**($1.37)**	**(13.01%)**	**$1.50**	**$1.50**	**$0.00**	**0.00%**

TIMP projects completed in 2020 and outlined below generally began during the 2nd and 3rd quarters of 2020 and were placed into service during the 3rd and 4th quarters of 2020.

1) Transmission Pipeline Assessments
WBS: E.0000018.052, E.0010033.012, E.0010043.012 (Capital); A.0008610.004.002.002 (O&M)

Project Summary and Scope

The project scope in 2020 included three projects on the following lines:

[15] Detail of numbers shown in Attachment C1 included in our 2020 GUIC Rider Filing, Docket No. G002/M-19-664, include non-GUIC recoverable internal labor. The amounts presented above exclude non-GUIC recoverable internal labor.

[16] Includes removal costs (RWIP).

[17] Capital costs represents the eligible calculated revenue requirements, which include: debt and equity return on rate base, property taxes, current and deferred taxes, and book depreciation. $480,000 of O&M amount is recovered through base rates and is removed from our GUIC Rider revenue requirement.

Line/Loop	Type	Project Length (mi)	Project Type
Cedar Line 26-inch	ILI	9.2	O&M
Crossover Line 12-inch	ILI	6.7	O&M/Capital
East County Line 20-inch	DA	10.3	O&M/Capital

2020 Actual Project Costs
($ Millions)

	2020 Capital, As Filed	2020 Capital Actuals	Variance	% Capital Variance	2020 O&M, As Filed	2020 O&M Actuals	Variance	% O&M Variance
Capital/O&M Expenditure	$2.33	$0.48	($1.85)	(79.40%)	$1.70	$1.70	$0.00	0.00%

Variance Explanation

Capital: The majority of the decrease in capital expenditures is due to modifying the assessment method for East County Line 20-inch from primarily in-line inspection to primarily direct assessment. A detailed evaluation of the pipeline configuration, operating conditions, risk assessment, and threat identification determined that a direct assessment was the most appropriate method to address the threats to the East County Line 20-inch pipeline. Costs for direct assessments are classified as O&M per the Company's capitalization policy. This decrease was partially offset by the installation of a permanent receiver on the Crossover Line 12-inch pipeline. This work was planned for late 2019 and shifted to 2020.

O&M: None.

2) ASVs and RCVs
WBS: E.0000018.041 and E.0010043.006 (Capital)

Project Summary and Scope
In 2020, the Company installed the following valves:

Valve Location	Size	Description
Linwood & Century Ave	20-inch	Install new valve and actuator on the East County Line
South St. Paul Station	20-inch	Install new valve actuator on the East Count Line – West of the Mississippi

2020 Actual Project Costs
($ Millions)

	2020 Capital, As Filed	2020 Capital Actuals	Variance	% Capital Variance	2020 O&M, As Filed	2020 O&M Actuals	Variance	% O&M Variance
Capital/O&M Expenditure	$0.75	$0.44	($0.31)	(41.33%)	$0.00	$0.00	$0.00	0.00%

Variance Explanation

Capital: The decrease in capital expenditures is due to updated cost estimates with reductions in labor and materials. As work began at the Linwood & Century Ave project, an existing stopple was identified on the pipeline. This enabled the installation of the new valve without the need to purchase a new stopple fitting.

O&M: None.

3) Programmatic Replacement/MAOP Remediation
E.0000042.001, E.0000042.002, E.0000044.002, and (Capital)

Project Summary and Scope
The scope of work in 2020 included one project on the following line:

Line/Loop	Type	Project Length (mi)	Project Type
County Road B Line (NSP to Rice)	Replacement	6.5	Capital

The primary scope of work in 2020 related to construction activities, engineering oversight and inspection services to replace the County Road B Line (NSP to Rice) Phase 2.

2020 Actual Project Costs
($ Millions)

	2020 Capital, As Filed	2020 Capital Actuals	Variance	% Capital Variance	2020 O&M, As Filed	2020 O&M Actuals	Variance	% O&M Variance
Capital/O&M Expenditure	$32.08	$24.43	($7.65)	(23.85%)	$0.00	$0.00	$0.00	0.00%

Variance Explanation

Capital: The main drivers of the capital expenditure decrease for the County Road B (NSP to Rice) project was due to favorable weather, fewer underground foreign utilities than expected, and minimized field offsets and fittings. Throughout the project there was close communication and coordination with local counties, which kept hard and soft surface costs to a minimum. The project also concluded two weeks ahead of schedule.

O&M: None.

V. TIMP MULTI-YEAR PLAN

As previously stated, some of the TIMP projects will span multiple years. As such, the Company has formulated a multi-year plan for those that will extend beyond 2022.

The table below depicts the estimated capital and O&M costs for this multi-year plan. Many of these projects require more detailed design and engineering work to improve the quality of the estimate. Other factors, including coordination with city entities,

securing rights-of-way and permits, resource and equipment availability, and unforeseen circumstances all can have an impact on a final construction estimate.

The information provided below is an initial high-level budgeting estimate for each program.

TIMP 2023-2026 Plan[18]
($ Millions)

	2023 Estimates		2024 Estimates		2025 Estimates		2026 Estimates	
Project	**Capital**	**O&M**	**Capital**	**O&M**	**Capital**	**O&M**	**Capital**	**O&M**
Transmission Pipeline Assessments	$0.60	$0.70	$0.15	$1.40	$0.60	$0.80	$0.74	$1.00
ASV/RCV	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Programmatic Replacement / MAOP Remediation	$14.45	$0.50	$15.89	$0.00	$15.89	$0.00	$15.89	$0.00
Casing Renewal	$1.19	$0.00	$0.49	$0.00	$0.00	$0.00	$0.00	$0.00
Total	**$16.24**	**$1.20**	**$16.53**	**$1.40**	**$16.49**	**$0.80**	**$16.63**	**$1.00**

[18] Capital figures denoted represent total estimated capital expenditures, including removal costs.

TIMP 2020-2022 Project Detail

CAPITAL

Program	Regulation	WBS Structure	2020 Actuals	2021 Actuals [1]	2021 Forecast	2021 Total	2022 Plan	Cost Per Unit (CPU) Assumptions
TIMP Assessments	49 CFR 192, Subpart O	E.0000018.052; E.0010033.012; E.0010043.012	$ 484,092	$ 325,613	$ 1,174,387	$ 1,500,000	$ 600,000	See Attachment C1(a)
ASV/RCV Replacements	49 CFR Part 192.935	E.0000018.041; E.0010043.006	$ 442,678	$ 9,865	$ 160,135	$ 170,000	$ -	See Attachment C1(b)
Programmatic Replacement/MAOP Validation	On May 7, 2012, the Pipeline and Hazardous Materials Safety Administration (PHMSA) issued an Advisory Bulletin to clarify the record verification requirements for establishing Maximum Allowable Operating Pressure (MAOP) for natural gas pipelines. See http://www.gpo.gov/fdsys/pkg/FR-2012-05-07/pdf/2012-10866.pdf.	E.0000042.001; E.0000042.002; E.0000044.002	$ 24,431,394	$ 45,089	$ (45,089)	$ -	$ 1,360,000	See Attachment C1(c)
Casing Renewal	49 CFR Part 192.467	E.0010073.006	$ -	$ 72,349	$ 227,651	$ 300,000	$ 2,380,000	See Attachment C1(d)
TOTAL TIMP CAPITAL			**$ 25,358,163**	**$ 452,916**	**$ 1,517,084**	**$ 1,970,000**	**$ 4,340,000**	

O&M

Program	Regulation	WBS Structure	2020 Actuals	2021 Actuals [1]	2021 Forecast	2021 Total	2022 Plan	Cost Per Unit (CPU) Assumptions
TIMP Assessments	49 CFR 192, Subpart O	A.0008610.004.002.002	$ 1,702,683	$ 71,573	$ 1,628,427	$ 1,700,000	$ 600,000	See Attachment C1(a)
TOTAL TIMP O&M			**$ 1,702,683**	**$ 71,573**	**$ 1,628,427**	**$ 1,700,000**	**$ 600,000**	

[1] Actual costs through June 2021.

2020

Line/Loop	Project Description	Actuals	O&M or Capital
Eagan Line	**Derate**	**$14,748**	
Task 1	Derate to Distribution	$14,748	Capital
Crossover 12"	**2nd ILI**	**$889,606**	
Task 1	Permanent Receiver Installation	$303,979	Capital
Task 2	AC Mitigation Study	$14,000	O&M
Task 3	Pigging runs and Validation digs	$571,627	
Crossover 16"	**Direct Assessment**	**$2,220**	
Task 1	O&M Assessments (DA)	$2,220	O&M
High Bridge Line	**ILI Assessable (Launcher & Receiver Installation)**	**$1,988**	
Task 1	Carryover costs from 2019 work	$1,988	O&M
Montreal Line North	**Robotic ILI**	**($8,210)**	
Task 1	Assessment (Robotic ILI)	($8,210)	O&M
Cedar Line	**2nd ILI**	**$576,175**	
Task 1	Pigging Runs/Validation Digs	$576,175	O&M
E County Line	**Multiple Assessments**	**$660,650**	
Task 1	Make piggable modifications	$115,767	Capital
Task 2	O&M Assessments (DA)	$544,884	O&M
Wescott Line 8"	**Baseline ILI**	**$23,717**	
Task 1	Make piggable modifications	$23,717	Capital
Wescott Line 12"	**Baseline ILI**	**$25,880**	
Task 1	Make piggable modifications	$25,880	Capital
Capital Total		**$484,092**	
O&M Total		**$1,702,683**	

2021

Line/Loop	Project Description	Estimates	O&M or Capital
Wescott Line 8"	**Baseline ILI**	**$747,000**	
Task 1	Make piggable modifications	$747,000	Capital
Wescott Line 12"	**Baseline ILI**	**$839,000**	
Task 1	Make piggable modifications	$839,000	Capital
E County Line	**Multiple Assessments**	**$2,146,000**	
Task 1	Make piggable modifications and ILI	$446,000	Capital
Task 2	ECDA & ICDA direct assessments	$1,700,000	O&M
Crossover 12"	**Capital Repairs**	**$468,000**	
Task 1	ILI Repair - Capital Cutout	$468,000	Capital
Capital Total		**$2,500,000**	
O&M Total		**$1,700,000**	

* Amounts above include non-GUIC recoverable costs associated with internal labor.

2022

Line/Loop	Project Description	Estimates	O&M or Capital
Wescott Line 8"	**Baseline ILI**	**$615,000**	
Task 1	First Time ILI	$415,000	Capital
	O&M ILI Repairs	$200,000	O&M
Wescott Line 12"	**Baseline ILI**	**$615,000**	
Task 1	First Time ILI	$415,000	Capital
Task 2	O&M ILI Repairs	$200,000	O&M
Island Line North	**Direct Examination**	**$200,000**	
Task 1	O&M Assessment (DA)	$200,000	O&M
Capital Total		**$830,000**	
O&M Total		**$600,000**	

* Amounts above include non-GUIC recoverable costs associated with internal labor.

2020

Subproject	Size	Description	Actual Cost
Mendota Station Inlet	16”	Install new actuator on Cedar Line TL0203 Inlet EV0460	($20)
Mendota Station Outlet	20"	Install new actuator on Island Line S. TL0206 Outlet EV0444	($20)
Mendota Station Outlet	20"	Install new actuator on Montreal Line Outlet EV0443	($23)
Linwood & Century Avenue	20"	Install new valve and actuator on the East County Line	$386,715
South St. Paul Outlet	20"	Install a new actuator on the East County Line - West of the Mississippi	$56,025
Total			**$442,678**

2021

Subproject	Size	Description	Estimated Cost
Linwood & Century Avenue	20"	Install new valve and actuator on the East County Line	$5,612
South St. Paul Station Crossover Interconnect	12"	Install a new actuator and controls between Crossover Line and Rosemount Line interconnect.	$164,388
Total			**$170,000**

2022

Subproject	Size	Description	Estimated Cost
None			$0
Total			**$0**

2020

Individual Project Name	Project Description	Actual Cost
East County Line (30" Maplewood Propane to North Saint Paul)	Construction	$ 5,463
	Materials	$ 22,001
	Engineering	$ 12,428
	Total	**$ 39,892**
County Rd B (NSP to Rice)	Construction	$ 1,321,730
	Materials	$ 22,968,931
	Permitting	$ -
	Engineering	$ 100,841
	Total	**$ 24,391,502**
	Grand Total	**$ 24,431,394**

2021

Individual Project Name	Project Description	Actual Cost
County Rd B (NSP to Rice)	Construction	$ 29,292
	Materials	$ 9,329
	Permitting	$ -
	Engineering	$ 6,467
	Total	**$ 45,089**

2022

Individual Project Name	Project Description	Estimated Cost
East County Line (Mississippi River to Carver Ave and Highway 61)	Pressure Test approximately 5,700' of pipeline Replace approximatley 2,400' of pipeline	$ 680,000
East County Line West of the Mississippi	Pressure Test approximately 8,500' of pipeline	$ 680,000
	Total	**$ 1,360,000**

2021

Casing Location	Size	Leaking	Shorted	Estimated Cost
16in Rosemount Line Crossing at Cahill	16"	N	Y	$300,000
Total				**$300,000**

2022

Quantitative Risk Assessment for 2022 GUIC Programs and Initiatives

TIMP

Methodology

Xcel Energy's risk assessment methodology is a process to evaluate unwanted consequences and the likelihood of the consequences occurring on the Company's natural gas infrastructure. The goal of the Company's integrity programs is to protect the public, property and the environment from pipeline failures.

The purpose of this risk assessment methodology is to develop a quantitative risk score and assign a risk category (high, medium, low) for identified projects that are funded through the Company's GUIC Rider.

These quantitative risk assessment methodologies assign numeric values to likelihood and consequences by using available data and quantifying assessments. In some cases, subject matter expert (SME) input is utilized.

TIMP Transmission Pipeline Assessments
Replacement Project Risk

2022 Projects by Risk Category
None

Data Inputs: Findings from completed pipeline assessments and pipeline patrols. Data and information is gathered and integrated for the pipeline segment that could be relevant. In some cases replacement may be required due to the inability to assess for an applicable threat as required by Subpart O of 49 CFR 192.

Risk = Σ (Likelihood x Consequence) for all threats

Likelihood of Failure Lookup Table

Likelihood of Failure Score (L) = 0 if there are no known defects or situations of concern for the threat category. When known issues exist the following table is utilized.

Threat Category	L = 5	L = 3	L = 0.25
External Corrosion	An immediate repair condition as per 192.933(d)(1) Any metal-loss indication affecting a detected longitudinal seam, if that seam was formed by direct current or low-frequency electric resistance welding or by electric flash welding. Predicted metal loss greater than 80% of the nominal wall thickness. A leaking defect. An indication or anomaly that in the judgment of the person designated to evaluate the assessment results requires immediate action as per 192.933(d)(iii).	A calculation of the remaining strength of the pipe shows a defect may grow to an immediate repair condition prior to the next scheduled assessment. A calculation of the remaining strength of the pipe is not commensurate with the pipeline class location. Predicted metal loss greater than 50% of nominal wall thickness. An indication or anomaly that in the judgment of the person designated to evaluate the assessment results requires remediation prior to the next assessment.	An indication or anomaly that in the judgment of the person designated to evaluate the assessment results does not require remediation prior to the next assessment.
Internal Corrosion	An immediate repair condition as per 192.933(d)(1) Any metal-loss indication affecting a detected longitudinal seam, if that seam was formed by direct current or low-frequency electric resistance welding or by electric flash welding.	A calculation of the remaining strength of the pipe shows a defect may grow to an immediate repair condition prior to the next scheduled assessment. A calculation of the remaining strength of the pipe is not commensurate with the pipeline class location.	An indication or anomaly that in the judgment of the person designated to evaluate the assessment results does not require remediation prior to the next assessment.

Threat Category	L = 5	L = 3	L = 0.25
	Predicted metal loss greater than 80% of the nominal wall thickness. A leaking defect. An indication or anomaly that in the judgment of the person designated to evaluate the assessment results requires immediate action as per 192.933(d)(iii).	Predicted metal loss greater than 50% of nominal wall thickness. An indication or anomaly that in the judgment of the person designated to evaluate the assessment results requires remediation prior to the next assessment.	
Stress Corrosion Cracking (SCC) or other crack like defects	An immediate repair condition as per 192.933(d)(1) A calculation of the remaining strength of the pipe shows a defect may grow to an immediate repair condition prior to the next scheduled assessment. Any indication of significant SCC or significant selective seam weld corrosion (SSWC). A leaking defect. An indication or anomaly that in the judgment of the person designated to evaluate the assessment results requires immediate action as per 192.933(d)(iii).	Evidence of cracks or crack-like defects in the pipe body, longitudinal seam, circumferential or branch-connection welds that are not an immediate condition. An indication or anomaly that in the judgment of the person designated to evaluate the assessment results requires remediation prior to the next assessment.	The pipeline meets the SCC threat criteria per ASME B31.8S Appendix A but no indications of SCC have been found as a result of assessments. An indication or anomaly that in the judgment of the person designated to evaluate the assessment results does not require remediation prior to the next assessment.

Threat Category	L = 5	L = 3	L = 0.25
Manufacturing	An immediate repair condition as per 192.933(d)(1) A leaking defect. An indication or anomaly that in the judgment of the person designated to evaluate the assessment results requires immediate action as per 192.933(d)(iii).	Tooling marks, rolling scabs, or other imperfections from the original pipe fabrication > 10% of the nominal wall thickness An indication or anomaly that in the judgment of the person designated to evaluate the assessment results requires remediation prior to the next assessment.	Tooling marks, rolling scabs, or other imperfections from the original pipe fabrication ≤ 10% of the nominal wall thickness An indication or anomaly that in the judgment of the person designated to evaluate the assessment results does not require remediation prior to the next assessment.
Welding/Fabrication/Construction	An immediate repair condition as per 192.933(d)(1) or a one-year condition as per 192.933(d)(2) A leaking defect. A dent that has any indication of metal loss, cracking or a stress riser. An indication or anomaly that in the judgment of the person designated by the operator to evaluate the assessment results requires immediate action as per 192.933(d)(iii).	A dent that exceeds the criteria established in 192.933 (d) (3) but is not an immediate repair condition or a one-year condition as per 192.933(d)(2) Presence of legacy construction techniques (e.g. miter bends, wrinkle bends, dresser couplings, acetylene welds, puddle welds, or a crease in a field bend). An indication or anomaly that in the judgment of the person designated to evaluate the assessment results requires remediation prior to the next assessment.	A dent that meets the criteria established in 192.933 (d) (3) An indication or anomaly that in the judgment of the person designated to evaluate the assessment results does not require remediation prior to the next assessment.
Equipment	An indication or anomaly that in the judgment of the person designated	An indication or anomaly that in the judgment of the person	An indication or anomaly that in the judgment of the person

Threat Category	L = 5	L = 3	L = 0.25
	to evaluate the assessment results requires immediate action as per 192.933(d)(iii). A leaking defect.	designated to evaluate the assessment results requires remediation prior to the next assessment.	designated to evaluate the assessment results does not require remediation prior to the next assessment.
3rd Party Mechanical Damage	An immediate repair condition as per 192.933(d)(1) or a one-year condition as per 192.933(d)(2) Any metal-loss indication affecting a detected longitudinal seam, if that seam was formed by direct current or low-frequency electric resistance welding or by electric flash welding. A dent that has any indication of metal loss, cracking or a stress riser. Predicted metal loss greater than 80% of the nominal wall thickness. A leaking defect. An indication or anomaly that in the judgment of the person designated to evaluate the assessment results requires immediate action as per 192.933(d)(iii).	A plain dent that exceeds the criteria established in 192.933(d)(3) but in not an immediate repair condition or a one-year condition. A calculation of the remaining strength of the pipe is not commensurate with the pipeline class location. A gouge or groove greater than 12.5% of nominal wall thickness. An indication or anomaly that in the judgment of the person designated to evaluate the assessment results requires remediation prior to the next assessment.	A plain dent that meets the criteria established in 192.933(d(3) Tooling marks, rolling scabs or other imperfections from the original pipe fabrication ≤ 10% of the nominal wall thickness in conjunction with a dent whose depth is > 4% of the nominal pipe diameter. An indication or anomaly that in the judgment of the person designated to evaluate the assessment results does not require remediation prior to the next assessment.
Weather/Outside Force	An immediate repair condition as per 192.933(d)(1)	An active land slide zone.	An indication or anomaly that in the judgment of the person designated to evaluate the

Threat Category	L = 5	L = 3	L = 0.25
	A leaking defect. An indication or anomaly that in the judgment of the person designated to evaluate the assessment results requires immediate action as per 192.933(d)(iii).	Line exposed due to erosion and subject to abnormal stresses. An indication or anomaly that in the judgment of the person designated to evaluate the assessment results requires remediation prior to the next assessment.	assessment results does not require remediation prior to the next assessment.
Other	Pipeline cannot be assessed for a specific threat or threats with currently available assessment techniques. A leaking defect. An indication or anomaly that in the judgment of the person designated to evaluate the assessment results requires immediate action as per 192.933(d)(iii).	Replacement is more economical than the cost of conducting ongoing assessments. Line must be taken out of service for the pipeline assessment but it is not possible to take the pipeline out of service or provide a temporary supply to serve the load.	N/A

Consequence of Failure Lookup Table

Class Location	Score
4	1.15
3	1.10
2	1.05
1	1

Risk Matrix

For a segment of pipeline in the same Class Location, the following table may be used.

			Consequence			
			Class 1	Class 2	Class 3	Class 4
			1	**1.05**	**1.1**	**1.15**
Likelihood of Failure	Sum of Likelihood of Failure Scores	**≥ 5**	≥ 5	≥ 5.25	≥ 5.5	≥ 5.75
	Sum of Likelihood of Failure Scores	**4**	4	4.2	4.4	4.6
	Sum of Likelihood of Failure Scores	**3**	3	3.15	3.3	3.45
	Sum of Likelihood of Failure Scores	**≤ 2**	≤ 2	≤ 2.1	≤ 2.2	≤ 2.3
	Sum of Likelihood of Failure Scores	**≤ 1**	≤ 1	≤ 1.05	≤ 1.1	≤ 1.15

High Risk: Risk Score ≥ 5
Medium Risk: 3 ≤ Risk Score < 5
Low Risk: Risk Score < 3

TIMP Transmission Pipeline Assessments
Integrity Assessments Project Risk

Project	Project Location (Service Area)	Pipe Diameter	Pipe Vintage	Years Since Last Assessment	HCA	Risk Score	Risk Level
Wescott Line 12”	Newport	12	1975	8	None	2	Medium
Wescott Line 8”	Newport	8	1972	9	None	2	Medium
Island Line North	Rice Street	20	1965	9	None	2	Medium

Data Inputs:

- Years since last integrity assessment
- Presence of High Consequence Areas on the line.

Used for decisions on prioritizing integrity assessments.

Risk Score = Likelihood of Failure x Consequence of Failure

Risk Matrix

			Consequence	
			Non-HCA	HCA
			1	**2**
Likelihood of Failure	Last Assessment > 20 years prior or no previous assessment	**4**	4	8
	15 years ≤ Last Assessment < 20 years prior	**3**	3	6
	5 years ≤ Last Assessment < 15 years prior	**2**	2	4
	Last Assessment < 5 years prior	**1**	1	2

High Risk, Risk Score ≥ 4
Medium Risk, 2 ≤ Risk Score < 4
Low Risk, Risk < 1

Risk Category	Project Risk Scores Range	Number of pipelines identified as of December 31, 2020[1]	Percentage
High	Risk Score ≥ 4	2	12%
Medium	2 ≤ Risk Score < 4	14	82%
Low	Risk < 1	1	6%
Total	All	17	

[1] Reduction in number of pipelines identified from 2019 to 2020 due to (1) the Eagan line being derated to distribution in 2019 and (2) the County Road B line being replaced as distribution in 2020.

TIMP Automatic Shutdown Valve (ASV) /Remote Control Valve (RCV) Project Risk

Line Name	Regulation	Proposed RCV Location	Nearest Service Center	Likelihood of Failure	COF	ASV/RCV Location Risk, Rv	Risk Level
None							

Data inputs:

- Travel Time from Nearest Service Center to valve location (minutes), T_t
- High Consequence Area (HCA) area downstream (feet), A_H
- Risk of Failure (ROF) from TIMP risk model, from maximum of segments downstream of valve

Risk Score (R_V) = Likelihood of Failure x Consequence of Failure

Likelihood of Failure = ROF

Consequence of Failure = Location Factor + Protection Factor

$T_{t,max}$ is the longest minimum travel time for any line in the NSPM transmission system

$A_{H,max}$ is the maximum HCA area protected by any valve in the NSPM system.

Location Factor (F_L) = T_t/ $T_{t,max}$

Protection Factor (F_P) = $A_H/A_{H,max}$

Likelihood of Failure Lookup Table

Condition	Score
Risk of Failure (ROF) Score from TIMP Risk ≥ 0.3	4
Risk of Failure (ROF) Score from TIMP Risk; 0. 2 ≤ F < 0.3	3
Risk of Failure (ROF) Score from TIMP Risk; 0. 1 ≤ F < 0.2	2
Risk of Failure (ROF) Score from TIMP Risk < 0.1	0.9

Consequence of Failure Lookup Table

Condition	Score
Location Factor + Protection Factor ≥ 0.5	4
Location Factor + Protection Factor; 0.3 ≤ F < 0.5	3
Location Factor + Protection Factor; 0.1 ≤ F < 0.3	2
Location Factor + Protection Factor < 0.1	0.9

Risk Matrix

			Consequence			
			Location Factor + Protection Factor < 0.1	Location Factor + Protection Factor 0.1 ≤ F < 0.3	Location Factor + Protection Factor 0.3 ≤ F < 0.5	Location Factor + Protection Factor 0.5 ≤ F < 1.5
			0.9	**2**	**3**	**4**
Likelihood of Failure	Risk of Failure (ROF) Score from TIMP Risk ≥ 0.3	**4**	3.6	8	**12**	**16**
	Risk of Failure (ROF) Score from TIMP Risk; 0. 2 ≤ F < 0.3	**3**	2.7	6	**9**	**12**
	Risk of Failure (ROF) Score from TIMP Risk; 0. 1 ≤ F < 0.2	**2**	1.8	4	6	8
	Risk of Failure (ROF) Score from TIMP Risk < 0.1	**0.9**	0.8	1.8	2.7	3.6

High Risk: Risk Score ≥ 9
Medium Risk: Medium Risk, 4 ≤ Risk Score < 9
Low Risk: Risk Score <4

TIMP MAOP Project Risk

Project	Regulation	Project Location (Service Area)	Current Classification	Prior Test	Material	Consequence	Risk Score	Risk Level
	49 CFR 192.619(a)(2)	Newport/White Bear Lake	Transmission	2	0.4	3	7.2	High
	49 CFR 192.619(a)(2)	Newport	Transmission	2	0.4	4	9.6	High

Data inputs:

- Test Pressure (validated as traceable, verifiable and complete)
- Material Records (validated as traceable, verifiable and complete)
- Class Location
- Presence of High Consequence Area (HCA) or Moderate Consequence Area (MCA)
- Grandfathered Pipeline as per 49CFR 192.619(c)

Risk Score = Likelihood of Failure x Consequence of Failure

Likelihood of Failure = Prior Test Score + Material Score

Prior Test Lookup Table

Condition	Prior Test Score
MAOP established in accordance with 192.619(c) "Grandfather Clause"	3
Records necessary to establish the MAOP in accordance with 192.619(a)(2) are not Traceable, Verifiable, and Complete ("TVC")	2
Test Pressure records are satisfactory	0

Material Lookup Table

Condition	Material Score
Pipeline or station contains material not validated	0.4
Pipeline or station material is validated	0

Consequence Lookup Table

Condition	Consequence Score
Contains HCA	4
Class 3 or Class 4, no HCA	3
Class 1 or 2 with MCA	2
Class 1 or 2, no HCA	1

Risk Matrix

			Consequence			
			Class 1 or 2, no HCA	Class 1 or 2 with MCA, no HCA	Class 3 or Class 4, no HCA	Contains HCA
			1	**2**	**3**	**4**
Likelihood of Failure	MAOP established in accordance with 192.619(c) "Grandfather Clause", Material no validated	**3.4**	3.4	6.8	10.2	13.6
	MAOP established in accordance with 192.619(c) "Grandfather Clause", Material validated	**3**	3	6	9	12
	Records necessary to establish the MAOP in accordance with 192.619(a)(2) are not TVC, Material not validated	**2.4**	2.4	4.8	7.2	9.6
	Records necessary to establish the MAOP in accordance with 192.619(a)(2) are not TVC, Material validated	**2**	2	4	6	8
	Test Pressure Records Satisfactory; Pipe or Station Material NOT Validated	**0.4**	0.4	0.8	1.2	1.6
	Test Pressure Records Satisfactory; Pipe or Station Material Validated	**0**	0	0	0	0

High Risk: Risk Score ≥ 5
Low Risk: Risk Score < 5
No Risk: Risk Score = 0

Risk Category	Project Risk Scores Range	Number of pipelines identified as of December 31, 2020*	Percentage
High	Risk Score ≥ 5	10	59%
Low	Risk < 5	1	6%
No Risk	Risk Score = 0	0	0%
Under Evaluation	TBD	6	35%
Total	All	17	

* Reduction in number of pipelines identified from 2019 to 2020 due to (1) the Eagan line being derated to distribution in 2019 and (2) the County Road B line being replaced as distribution in 2020.

TIMP Transmission Casing Renewal Project Risk

Project Name/Location	Size	Likelihood of Failure	Consequence	Risk Score	Risk Level
24 in High Pressure at Hardman and 494	24”	4	4	16	High

Data inputs:

- Indication of a metallic short or electrolytic short between the casing and carrier pipe
- Guided Wave Ultrasonic Testing (“GWUT”) indication of carrier pipe corrosion metal loss in excess of 5% of the cross-sectional area, in accordance with PHMSA Guided Wave UT Go-No Go Procedures (I.e., “18-point checklist”)
- Carrier Pipe diameter, operating pressure and location

Risk Score = Likelihood of Failure x Consequence of Failure

Consequence of Failure = Potential Impact Radius of downstream pipeline (PIR)

$$PIR\ (ft) = .69 * \sqrt{Pressure(psig) * Diameter(in)^2}$$

Likelihood of Failure Lookup Table

Condition	Score
Indication of a metallic short between the casing and carrier pipe or unable to verify no metallic short. A leak on the carrier pipe.	4
Indication of an electrolytic contact between the casing and carrier pipe.	3
No indication of a metallic short or electrolytic contact but indication of carrier pipe corrosion metal loss in excess of 5% of the cross-sectional area.	2
Indication of a change in casing integrity based on an evaluation of the casing monitoring program data using the PHMSA Guidelines for Integrity Assessment of Carrier Pipes.	1

Consequence of Failure Lookup Table

Condition	**Score**
Transmission Carrier Pipe that contains HCA	5
Transmission Carrier Pipe – Class 3 or Class 4; Distribution Main Carrier Pipe – PIR > 100 feet	4
Transmission Carrier Pipe – Class 1 or Class 2; Distribution Main Carrier Pipe – 20 ft. < PIR ≤ 100 ft.	3
Distribution Main Carrier Pipe – PIR ≤ 20 feet	2
Distribution Service Carrier Pipe	1

Risk Matrix

			Consequence				
			Distribution Service Carrier Pipe	Distribution Main Carrier Pipe – PIR ≤ 20 ft.	Transmission Carrier Pipe – Class 1 or Class 2 OR Distribution Main Carrier Pipe – 20 ft. < PIR ≤ 100 ft.	Transmission Carrier Pipe – Class 3 or Class 4 OR Distribution Main Carrier Pipe – PIR> 100 ft.	Transmission Carrier Pipe that Contains HCA
			1	**2**	**3**	**4**	**5**
Likelihood of Failure	Indication of a metallic short between the casing and carrier pipe or unable to verify no metallic short	**4**	4	8	12	16	20
	Indication of an electrolytic contact between the casing and carrier pipe	**3**	3	6	9	12	15
	No indication of a metallic short or electrolytic contact but indication of carrier pipe corrosion metal loss in excess of 5% of the cross-sectional area	**2**	2	4	6	8	10
	Indication of a change in casing integrity based on an evaluation of the casing monitoring program data using PHMSA Guidelines for Integrity Assessment of Cased Pipe	**1**	1	2	3	4	5

High Risk, Risk Score ≥ 15

Medium Risk, 6 ≤ Risk Score < 15

Low Risk, Risk < 6

Distribution Integrity Management Program and Mandated Relocations Overview and Project Detail

I. DIMP OVERVIEW

Managing the integrity and safe operation of our gas systems is a continuous process. At its core, the Distribution Integrity Management Program (DIMP) can be summarized in three steps:

1) understand your assets,
2) risk evaluation, and
3) risk mitigation.

Our processes for these three steps are outlined below.

The progression of these steps is part of the Company's proactive integrity management program and continually evolves as new information becomes available about the Company's natural gas assets. We incorporate knowledge gained about our assets through normal operations as well as routine maintenance activities, pipeline surveys, inspections, proactive mitigation measures, industry trends, and regulatory guidance or changes to state or federal codes. Using the processes identified below, we are continually updating our DIMP plans and projects to address the ongoing obligation to ensure the safe and reliable operation of our gas distribution system.

1) Understand Your Assets

The overall goal of the Company's integrity programs is to provide safe and reliable service to our customers. For the DIMP to be successful, the Company needs to gather information about gas distribution assets and their operating environments. We collect specific data and information, including paper documents, electronic databases, and the experience of subject matter experts (SMEs).

2) Risk Evaluation

Using the knowledge of our gas distribution assets, we evaluate relative risk based on variables including pipe material, pipe size, prior failures, and failure causes. The Company also considers historical incidents, industry trends, Pipeline

Hazardous Materials Safety Administration (PHMSA) advisory bulletins, regulatory commitments, and knowledge from other distribution operators and industry members. The Company employs a risk assessment methodology to evaluate unwanted consequences and the likelihood of the consequences occurring on the Company's natural gas infrastructure. A probabilistic risk score is assigned and is used as guidance by SMEs, enabling stratification or ranking of projects based on asset characterization and probability of pipe failure. This risk assessment methodology leads to a quantitative risk score and a risk category — high, medium, or low – along with other outputs useful for risk mitigation planning.

The Company evaluates our gas pipelines for the following threats:

- Corrosion,
- Natural forces,
- Excavation damage,
- Other outside force,
- Materials, weld, or joint failure,
- Equipment failure,
- Incorrect operation, and
- Other threats.

The Company also evaluates the historical cause of leaks to gain an understanding of the presence of particular threats to the system.

3) Risk Mitigation

The Company integrates the results from the risk evaluation process into determining planned risk mitigation activities. Using the information gathered and industry best practices, we take appropriate measures to reduce or remove the risks to the distribution system — either by reducing the likelihood or lessening the consequences of a threat or multiple threats. One such measure is the targeted replacement of pipe segments that are poor performing or problematic. Xcel Energy's gas distribution replacement programs have traditionally been material-based, targeted towards removing identified higher risk materials (e.g. cast-iron, bare steel, vintage plastic, etc.). For material families that have noticeably higher risk than other families, this has been a reasonable approach, providing for reasonable optimization of risk

reduced per unit of capital invested. Specific programs identified as appropriate measures to reduce risk include:

- Replacement of poor performing coated steel pipelines to address corrosion;
- Renewal of mechanical or compression coupled mains and services to address material and welds concerns and corrosion;
- Renewal of poor performing Aldyl-A (PEA) pipelines, a type of polyethylene pipe material to address material and welds concerns and equipment issues;
- Replacement of copper services and risers to address corrosion;
- Inspecting intermediate pressure (IP) pipelines[1] and repairing or replacing as needed to address corrosion and joint, material, and weld concerns; and
- Replacement of IP pipelines to address corrosion and joint, material and welds concerns.

In continuing risk reduction efforts, as these material-based replacement programs start wrapping up, Xcel Energy has continued to develop strategies to continue to remove risk in the most beneficial and cost-effective ways.

The advent of true quantitative risk assessment methodologies provides a tool for developing such optimized replacement strategies - moving from the material-based approach to a true risk optimized approach. As shown below, this type of approach can be effective in developing optimized replacement strategies for assets outside the common bad actor families (e.g. cast-iron) and even within these families.

No two assets have the exact same risk profiles. Even within asset families, such as cast-iron and bare steel, there is a distribution of risk based on the specifics of each asset and its environment. For example, vintage plastic – which is prone to slow crack growth failures due to rock impingement – installed in areas with rocky soils, in pipelines operating at higher pressures, and in areas with higher ground temperatures, will have higher failure rates than the same vintage plastic pipe installed in areas with sandy soils operating at lower pressures with lower ground temperatures. So, while the materials-based approach provides a gross level of risk ranking, it does not capture the subtleties of the risk distributions within each asset family and across the distribution system.

[1] Generally defined as lines operating above 60 pounds per square inch gauge and below transmission.

A true quantitative risk assessment, which assesses the risk for each individual asset based on its specific factors, provides for the ability to accurately rank risk across the entire distribution system and hence provide for a true risk-based prioritization for replacement programs. The J-DIMP™ by JANA, Xcel Energy gas distribution risk model does exactly that.

Risk mitigation is not solely focused on pipe replacement programs, but can also include preventative measures, performing inspections utilizing specialized technology, or more frequent inspections of equipment and pipelines. As part of its comprehensive integrity management program, the Company has identified different risk mitigation strategies, all of which have the intent of reducing the likelihood or consequences posed by a threat or multiple threats.

II. 2022 DIMP PROJECTS

The Company requests recovery of the following operational and maintenance (O&M) and capital expenditures associated with five 2022 DIMP programs:

2022 Estimated DIMP Project Costs
($ Millions)

Program	2022 Capital[2]	2022 O&M
Poor Performing Main Replacements	$14.11	$0.00
Poor Performing Service Replacements	$4.69	$0.00
Intermediate Pressure (IP) Line Assessments / Replacements	$27.56	$0.25
Distribution Valve Replacement Project	$0.44	$0.00
Casing Renewal	$0.59	$0.00
Total 2022 DIMP Capital Expenditures and O&M	**$47.39**	**$0.25**
Total 2022 Minnesota DIMP Revenue Requirement	**$18.40**	**$0.25**

All of these projects, except for Casing Renewal, were included in the Company's 2015 through 2021 GUIC Rider petitions.[3] The Casing Renewal project began in

[2] Estimated capital costs include estimated removal costs. Details can be seen in Attachment D1.
[3] Docket Nos. G002/M-14-336, G002/M-15-808, G002/M-16-891, G002/M-17-787, G002/M-18-692, G002/M-19-664, and G002/M-20-799.

2021. The capital-related cost estimates for 2022 exclude internal labor and include materials, outside services, transportation, and a portion of construction overheads. The 2022 project detail for each project is presented in Attachment D1 and the risk assessment scores for 2022 projects are presented in Attachments D2(a) and D2(b). Main and service projects are generally planned six months to one year in advance. Actual construction on identified main projects will generally begin during the 2nd quarter, and assets will typically be in-service during the 3rd and 4th quarters. For example, 2022 project identification typically occurs in the 3rd and 4th quarters of 2021 and 1st quarter of 2022, construction will commence during the 2nd quarter of 2022, and in-servicing will occur during the 3rd and 4th quarters of 2022.

1) Poor Performing Main Replacements
Work Breakdown Structure (WBS):[4] E.0010011.003 (Capital)

2022 Estimated Project Costs
$14.11 million Capital expenditure

Project Summary and Scope
The Company's approach for the systematic renewal of poor performing mains allows for optimized resource use and coordination with local communities, reducing the inconvenience of street construction for our customers. The Company is continually evaluating threats on the pipeline system and identifying distribution main segments that pose a risk due to pipe material deterioration or leaks. The selection and prioritization of pipe segments and/or areas targeted for replacement is based on leak history, relative ranking from the risk modeling, deficiencies in coating or cathodic protection, and construction methods, particularly those joined using mechanical couplings. Additional reviews and input from engineers and SMEs are incorporated into the replacement decisions. Replacing main pipeline segments is a multi-year project with the areas identified as higher risk being mitigated earlier in sequence than lower risk areas.

[4] WBS has replaced the parent project number given for projects in previous versions of our GUIC Filing. This switch in numbering has been due to a change in our work and asset management system. The previously used parent projects generally correspond with one WBS.

Materials and construction methods are a major contributing factor in poor main performance. For example, mains made from Polyethylene Aldyl-A (PEA)[5] can become brittle over time and are subject to sudden failure from cracking.

The Company has also identified segments of vintage coated steel pipe to be removed due to the mechanical couplings that were used to join the pipe. Many of these mains appear to pose no risk unless they have been disturbed through third-party damage (i.e. excavation damage) or natural forces (i.e. frost heave). Once disturbed, the mechanical couplings can begin to leak, resulting in property damage, outages, and other consequences. The systematic removal of these pipe segments will reduce operating risk and reduce the likelihood of incidents.

As previously described, the Company utilizes a risk assessment process to perform the initial relative ranking of poor performing mains. This list is then reviewed by SMEs, who may adjust the project priorities based on their knowledge. SMEs consist of engineering, cathodic protection, construction, and integrity management employees.

To minimize costs to customers and ensure customer safety and system reliability, main and service renewal projects are designed with consideration of adjacent facilities, municipal requirements, and distribution system operational needs. This includes the viability of dual main installations, which eliminates directional boring associated with installing gas services under roadways. The Company may also convert segments from low-pressure to high-pressure distribution, eliminating the need for additional capital and on-going operating expenses for regulator stations. Additionally, to the extent possible, main and service replacements will be coordinated with city rehabilitation and resurfacing projects to further reduce overall costs and minimize construction impacts on neighborhoods. Both main and service replacements are considered for simultaneous construction to minimize overall costs.

The Company utilizes a sourcing process that results in multi-year, unit cost agreements. Materials are sourced through our standard procurement contracts. Engineering and design are completed in-house using Company

[5] PHMSA has issued several advisory bulletins about PEA mains, including PHMSA Advisory Bulletin Nos. ADB-07-01, ADB-02-07, ADB-12-05, and ADB 08-02.

employees and contractor staff. Internal labor costs are excluded from the GUIC Rider.

2) Poor Performing Service Replacements
WBS: E.0010011.004 (Capital)

2022 Estimated Project Costs
$4.69 million Capital expenditure
Project Summary and Scope
As with the analysis of poor performing mains, the Company uses the aforementioned risk assessment methodology to provide a relative ranking of problematic service segments. These problematic segments are then reviewed by SMEs, who may adjust project priorities based on their knowledge. SMEs consist of engineering, cathodic protection, construction, and integrity management employees. This is a multi-year program with the areas identified as higher risk, as measured by leak ratios and other factors, being mitigated in the appropriate order. Where pertinent, service replacements are considered for simultaneous construction along with main replacements to minimize construction costs.

3) IP Line Assessments
WBS: E.0000007.053, E.0000043.001, E.0000045.001 (Capital); A.0008610.004.001.005 (O&M)

2022 Estimated Project Costs
$27.56 million Capital expenditure
$0.25 million O&M expenditure

Project Summary and Scope
This is an ongoing project to assess and renew IP lines. Selection of assessment methodologies and pipeline segments for inspection is based on an evaluation of the critical IP lines in the distribution system, and an evaluation of elements of specific DIMP threats. The IP system is comprised of steel pipe susceptible to the threats from corrosion, manufacturing defects,[6] construction methods,[7] and third-party damage. The consequences associated with a failure of these pipelines are

[6] Material defects, long seam defects.
[7] Compression couplings and welds.

heightened due to the higher operating pressures and the location of many of these lines in heavily developed areas. For IP lines, direct assessment is the primary assessment methodology. However, pressure testing may also be utilized based on the applicable threats and the ability to take the pipeline out of service.

The Company plans on conducting between two and five IP line assessments per year. The Company maintains a prioritized list of anomalies identified through external corrosion direct assessment (ECDA) surveys, and verification digs will be completed on these anomalies, as applicable. O&M budgets for this program are volatile depending on the condition of the pipelines assessed and the number of anomalies identified for excavation and repair.

In 2022, the Company will continue construction activities on two replacement projects that support the integrity management of the Company's high-pressure distribution pipelines. In addition, the Company will conduct integrity assessments including follow up excavations on three pipelines and indirect surveys on two pipelines to identify any potential threats of corrosion and repair any corrosion defects. The IP Line Assessment work in 2022 includes the following lines:

Line/Loop	Type	Project Length (mi)	Project Type
Various	Follow Up Digs	Various	O&M
Rahr Lateral	Indirect Survey	7.0	O&M
Winona Support Line	Indirect Survey	3.7	O&M
County Road B – Rice to Hamline	Replacement	3.4	Capital
Langdon Line – TBS to 1st St in St. Paul Park	Replacement	5.8	Capital
H005 – CR E to R400	Replacement	2.9	Capital

- **Follow Up Digs:**
  - Brainerd Lakes Lines: Follow up excavations based on survey results from 2020 work will occur in 2022.
  - 11006 – St. Cloud: Follow up excavations based on survey results from 2021 work will occur in 2022.
  - 11008 – Clear Lake Line: Follow up excavations based on survey results from 2021 work will occur in 2022.

- **Indirect Survey:**
  - Rahr Lateral: This project covers 7.0 miles of high-pressure distribution pipe near Jackson, MN. This segment will be assessed using indirect survey.
  - Winona Support Line: This project covers 3.7 miles of high-pressure distribution pipe near Winona, MN. This segment will be assessed using indirect survey.

- **County Road B – Lexington to Hamline & Cty Rd C:** This project is along County Road B in Roseville, MN and entails replacing 3.4 miles of 16-inch, and 12-inch pipe with a standardized 16-inch pipe. This pipeline was originally installed in the 1950s with service lines directly connected to it, multi diameter piping and mechanical couplings. Replacement with a new single diameter pipeline will make the line capable of being inspected with ILI tools. This is a three-year project with engineering and permitting completed in 2020, and construction in 2021 and 2022. Final restoration activities may continue into 2023.

- **Langdon Line – Scott Blvd in Cottage Grove to 1st St in St. Paul Park:** This project is along Hwy 61 in Cottage Grove and along Hastings Avenue in St. Paul Park, MN and entails replacing 5.8 miles of 12-inch, 8-inch and 6-inch pipe with a standardized 12-inch pipe. This pipeline was originally installed in 1958 using multi diameter piping and mechanical couplings. Replacement with a new single diameter pipeline will make the line capable of being inspected with ILI tools. This is a three-year project with engineering and permitting completed in 2020, and construction in 2021 and 2022. Final restoration activities may continue into 2023.

- **H005:** This project is along Snelling/Lake Valentine Rd/Old Hwy 8 in Arden Hills and New Brighton, MN and entails replacing 2.9 miles of 8-inch pipe with 12-inch pipe. This pipeline was originally installed in the 1960's using vintage materials and construction methods (i.e., mechanical couplings); resulting in threats associated with material defects and construction defects. Replacement with a new single diameter pipeline will make the line capable of being inspected with ILI tools. In 2021, the Company is performing digs where historic surveys indicated couplings along this line; this will help refine the scope of work for 2022. If the results determine a capital project should commence, this will be a two-year project with engineering and permitting in 2022 and construction in 2023.

4) Distribution Valve Replacement Project
WBS: E.0010011.005 (Capital)

2022 Estimated Project Costs
$0.44 million Capital expenditure

Project Summary and Scope
The placement, accessibility, and functionality of valves in the gas distribution system are critical components of gas operations, as valves provide the ability to isolate sections of the system in the event of an emergency or incident. By isolating sections during these events, the public can be better protected, and customer impacts can be minimized.

The Company has identified a need to add, replace, or otherwise rehabilitate existing distribution valves. As a result of DIMP regulations, the Company is focusing directly on valve conditions and locations when determining valves that should be replaced or installed. This work is in response to the Company's obligation under Code 49 CFR Part 192.1007(d).

A 2020 review of existing valve isolation areas identified the need for adding 94 new valves to reduce the time to shut down a section of main in an emergency. These valves range in size from 2-inch to 16-inch and will be installed in the South Metro and Southwest areas. Of these new valves, 30 are expected to be installed in 2022 with the remaining to be installed in 2023-2026.

In addition to new valve installations, the program will replace existing distribution system isolation valves which have become inaccessible, inoperable or are beyond their useful life.

The Company anticipated concluding this project in 2019. However, additional valves have been identified as inoperable while performing periodic maintenance and operating procedures. The Company currently estimates a total of 15 distribution valves will be replaced in the South Metro and Southeast areas. These valves range in size from 2-inch to 12-inch. Of these valves, one is expected to be replaced in 2022 with the remaining to be replaced in 2023-2026. Replacing these valves will allow the Company more options to isolate sections to address an emergency or system incident, while impacting the smallest number of customers.

5) Casing Renewal Project
WBS: E.0010011.012 (Capital)

2022 Estimated Project Costs
$0.59 million Capital expenditure

Project Summary and Scope
Casings were routinely installed for a variety of situations including under roads and railroads. Pipelines were installed inside the casings to protect the pipe from a variety of forces. Improved design has mostly eliminated the use of casings in modern gas construction. In several instances, the Company cannot determine if the pipeline carrying gas is isolated from the casing, a situation that can create a corrosion risk and lead to pipeline failure. The objective of this project is to mitigate the risk by renewing the pipeline or installing equipment that allows ongoing testing to ensure isolation.

The ability to test for isolation is in accordance with the Company's Gas Standards Manual section 9.9.9 and 49 CFR § 192.467 which provide that for all metallic carrier pipe installed in a metallic casing, the Company shall take pipe-to-soil and casing-to-soil readings annually with the purpose of determining whether the two pieces of pipe are in contact (shorted).

The Company assumes all casings that cannot be tested for isolation between the carrier pipe and the casing are shorted (electrically continuous) until test leads can be installed and tested. If testing shows the pipe and casing are isolated, the casing is added to the annual test lead survey and will be monitored and maintained over time. If testing shows no isolation (shorted), the casing will be renewed under this project. Some casings were installed when road right of way (ROW) was narrower and casings were not extended when the road was widened. In these cases, the Company renews the carrier pipe and eliminates the casing, thus removing the corrosion risk.

This project began in 2021 and will continue annually until all casings risks on the program list have been mitigated.

The Company has currently identified a total of 26 distribution casings to be renewed in the East Metro, Southeast and Northwest areas. Of these casings, two are expected to be renewed in 2022 with the remaining 24 casings being renewed in 2023-2026.

The 2022 scope of work includes the following casings:

Casing Location	Pipe Size	Leaking	Shorted
Bore Hwy 36 & Rice St.	12”	N	Y
Century & Stillwater	6”	N	Y

III. 2021 DIMP PROJECTS

There are five projects under the DIMP in 2021. Following are the DIMP project costs originally included in the Company’s 2021 GUIC Rider Petition,[8] as compared to revised 2021 cost estimates[9] based on current-year project developments and actual construction activity:

[8] Docket No. G002/M-20-799.
[9] Based on actual costs as of 6/30/2020 and estimates from 7/1/2020 through 12/31/2020.

2021 Estimated DIMP Project Costs
($ Millions)

Program	2021 Capital, As Filed	2021 Capital Estimates	Variance	% Capital Variance	2021 O&M, As Filed	2021 O&M Estimates	Variance	% O&M Variance
Poor Performing Mains	$8.50	$12.97	$4.47	52.58%	$0.00	$0.00	$0.00	0.00%
Poor Performing Services	$7.35	$4.41	($2.94)	(39.98%)	$0.00	$0.00	$0.00	0.00%
Intermediate Pressure (IP) Lines Assessments	$24.43	$23.11	($1.32)	(5.40%)	$0.58	$0.58	$0.00	0.00%
Distribution Valve Replacement	$0.46	$0.46	$0.00	0.00%	$0.00	$0.00	$0.00	0.00%
Casing Renewal	$2.65	$2.65	$0.00	0.00%	$0.00	$0.00	$0.00	0.00%
Total 2021 DIMP Capital Expenditures and O&M	**$43.38**	**$43.59**	**$0.21**	**0.48%**	**$0.58**	**$0.58**	**$0.00**	**0.00%**
Total 2021 MN DIMP Revenue Requirement	**$15.73**	**$15.82**	**$0.09**	**0.54%**	**$0.58**	**$0.39**	**($0.19)**	**(32.76%)**

The capital-related cost estimates for 2021 exclude internal labor and include materials, outside services, transportation, and the portion of construction overheads not related to internal labor. The 2021 project detail for each project is presented in Attachment D1.

1) Poor Performing Main Replacements
WBS: E.0010011.003, E.0010043.019 (Capital)

Project Summary and Scope

For 2021, the poor performing mains materials include PEA and vintage coated steel.

2021 Estimated Project Costs
($ Millions)

	2021 Capital, As Filed	2021 Capital Estimates	Variance	% Capital Variance	2021 O&M, As Filed	2021 O&M Estimates	Variance	% O&M Variance
Capital/O&M Expenditure	$8.50	$12.97	$4.47	52.58%	$0.00	$0.00	$0.00	0.00%

Variance Explanation

Capital: As was the case in 2020, the main driver for the increase in capital expenditures was an increase in problematic pipeline replaced based on a revised relative risk assessment among GUIC projects. The projects consist of PEA mains and vintage coated steel. The construction resources and projects identified for 2021 have been prioritized based on relative risk and SME input.

O&M: None.

2) Poor Performing Service Replacements
WBS: E.0010011.004 (Capital)

Project Summary and Scope
For 2021, the primary service-related material types addressed include PEA and vintage coated steel. Additional material types are included as necessary based on their overall risks.

2021 Estimated Project Costs
($ Millions)

	2021 Capital, As Filed	2021 Capital Estimates	Variance	% Capital Variance	2021 O&M, As Filed	2021 O&M Estimates	Variance	% O&M Variance
Capital/O&M Expenditure	$7.35	$4.41	($2.94)	(39.98%)	$0.00	$0.00	$0.00	0.00%

Variance Explanation

Capital: The decrease in capital expenditures is primarily due to more main replacement work occurring relative to service replacements. Service replacement projects are connected to their associated main replacement projects. Each year the percentage of main work compared to service work can fluctuate based on the geographic area where the work is performed (i.e., downtown vs. suburb). The revised capital estimates for 2021 better reflect the split of main and service work.

O&M: None.

3) IP Line Assessments
WBS: E.0000007.053, E.0000043.001, E.0000043.002, E.0000045.001, E.0000051.001, E.0000052.001 (Capital); A.0008510.114.001.005, A.0008610.004.001.005 (O&M)

Project Summary and Scope
This project includes health and condition assessments on IP lines. In 2021, the Company began construction activities on two replacement projects that support the integrity management of the Company's high-pressure distribution pipelines. In addition, the Company is conducting integrity assessments, similar to an external corrosion direct assessment (ECDA) on four pipelines to identify any potential threats of corrosion and repair any corrosion defects. Lastly, the Company is assessing 16 river crossings using underwater divers to identify any potential threat from natural forces due to changing river flows and currents. The IP Line Assessment work in 2021 includes the following lines:

DIMP and Mandatory Relocation Project Overviews

Line/Loop	Type	Project Length (mi)	Project Type
Various	Follow Up Digs	Various	O&M
11006 – St. Cloud	Indirect Survey	2.2	O&M
11008 – Clear Lake	Indirect Survey	20.5	O&M
Multiple River Crossings	Underwater Assessment	N/A	O&M
County Road B – Rice to Hamline	Replacement	3.4	Capital
Langdon Line – TBS to 1st St in St. Paul Park	Replacement	5.8	Capital

- **Follow Up Digs:**
  - Brainerd Lakes Lines: Follow up excavation based on survey results from 2020 work are occurring in 2021.
  - H005 System: Follow up excavations based on survey results from 2014 are occurring in 2021.

- **Indirect Survey:**
  - 11006 – St. Cloud: This project covers 2.2 miles of high-pressure distribution pipe in St. Cloud, MN. This segment will be assessed using ECDA methodology.
  - 11008 – Clear Lake Line: This project covers 20.5 miles of high-pressure distribution pipe near Clear Lake, MN. This segment will be assessed using ECDA methodology.

- **River Crossing Assessments:** This project includes using underwater divers to inspect for pipeline damage from debris at the bottom of the river and to assure that cover over the pipeline remains adequate due to changing riverbed depths from silt deposit changes. A total of 16 crossings will be assessed ranging in size from 4-inch to 20-inch in the communities of Brainerd, Clear Lake, Faribault, Newport, Northfield, St. Augusta, St. Cloud, St. Paul, St. Stephen, and Watab. Mitigation of anomalies will depend on the condition of the pipelines assessed and changes to river bottom depths identified.

- **County Road B – Rice to Lexington:** As discussed previously, this is a three-year project with engineering and permitting completed in 2020, and construction in 2021 and 2022.

- **Langdon Line – TBS to Scott Blvd in Cottage Grove:** As discussed previously, this is a three-year project with engineering and permitting completed in 2020, and construction in 2021 and 2022.

2021 Estimated Project Costs
($ Millions)

	2021 Capital, As Filed	2021 Capital Estimates	Variance	% Capital Variance	2021 O&M, As Filed	2021 O&M Estimates	Variance	% O&M Variance
Capital/O&M Expenditure	$24.43	$23.11	($1.32)	(5.40%)	$0.58	$0.58	$0.00	0.00%

Variance Explanation

Capital: Of the $1.32 million decrease, the primary drivers were an $4.3 million decrease due to the H008 replacement work being on hold until further review can be completed and a $4.1 million shift in forecasted Langdon Line costs from 2021 to 2022. These decreases were offset by $7.1 million of increases for the County Rd B Rice to Hamline project to reflect awarding mechanical contractor.

O&M: None.

4) Distribution Valve Replacement Project
WBS: E.0010011.005 (Capital)

Project Summary and Scope
In 2021, the Company plans to install 28 new valves ranging in size from 2-inch to 12-inch. In addition, six inoperable emergency distribution valves will be

replaced ranging in size from 3-inch to 12-inch. These valves projects are occurring in the South Metro and Southwest areas.

2021 Estimated Project Costs
($ Millions)

	2021 Capital, As Filed	2021 Capital Estimates	Variance	% Capital Variance	2021 O&M, As Filed	2021 O&M Estimates	Variance	% O&M Variance
Capital / O&M Expenditures	$0.46	$0.46	$0.0	0.00%	$0.00	$0.00	$0.00	0.00%

Variance Explanation

Capital: None.

O&M: None.

5) Casing Renewal Project
WBS: E.0010011.012 (Capital)

Project Summary and Scope
This project began in 2021 and shall continue annually until all casings risks on the program list have been mitigated. In 2021, the Company plans to renew seven casings in the East Metro, Southeast and Northwest areas.

The 2021 scope of work includes the following casings:

Casing Location	Pipe Size	Leaking	Shorted
16" bore across Hwy 61-Winona	16"	N	Y
Bore Hwy 36 & Rice St.	12"	N	Y
12" Dodd & Hwy 110	12"	N	Y
Snelling & Transit Ave – Roseville	8"	N	Y
Division St. & 18th Ave. – St. Cloud	8"	N	Y
Casing under RR tracks 400' E of Rice St. at entrance to 1900 Rice St. (St. Paul Water)	4"	N	Y
RR Crossing at Fairview & Cty C	4"	N	Y

2021 Estimated Project Costs
($ Millions)

	2021 Capital, As Filed	2021 Capital Estimates	Variance	% Capital Variance	2021 O&M, As Filed	2021 O&M Estimates	Variance	% O&M Variance
Capital / O&M Expenditures	$2.65	$2.65	$0.0	0.00%	$0.00	$0.00	$0.00	0.00%

Variance Explanation

Capital: None.

O&M: None.

IV. 2020 DIMP PROJECTS

There were four projects under the DIMP in 2020. Following are the DIMP project costs originally included in the Company's 2020 GUIC Rider Petition,[10] as compared to actual 2020 costs.

2020 Actual DIMP Project Costs
($ Millions)

Program	2020 Capital, As Filed[11]	2020 Capital Actuals[12]	Variance	% Capital Variance	2020 O&M, As Filed	2020 O&M Actuals	Variance	% O&M Variance
Poor Performing Mains	$11.09	$20.19	$9.10	82.06%	$0.00	$0.00	$0.00	0.00%
Poor Performing Services	$6.93	$3.89	($3.04)	(43.87%)	$0.00	$0.00	$0.00	0.00%
Intermediate Pressure (IP) Lines Assessments	$0.49	$1.31	$0.82	167.35%	$0.58	$0.25	($0.33)	(56.90%)
Distribution Valve Replacement	$0.00	$0.06	$0.06	100.00%	$0.00	$0.00	$0.00	0.00%
Total 2020 DIMP Expenditures	**$18.51**	**$25.45**	**$6.94**	**37.49%**	**$0.58**	**$0.25**	**($0.33)**	**(56.90%)**
Total 2020 MN DIMP Revenue Requirement[13]	**$11.98**	**$12.32**	**$0.34**	**2.85%**	**$0.58**	**$0.25**	**($0.33)**	**(56.90%)**

[10] Docket No. G002/M-19-664.
[11] Detail of numbers shown in Attachment D1 included in our 2020 GUIC Rider Filing, Docket No. G002/M-19-664.
[12] Includes removal costs (RWIP)
[13] Capital Costs represents the eligible calculated revenue requirements, which include debt and equity return on rate base, property taxes, current and deferred taxes, and book depreciation.

The capital-related cost estimates for 2020 exclude internal labor and include only materials, outside services, transportation, and the portion of construction overheads not related to internal labor. The 2020 project detail for each project is presented in Attachment D1.

1) Poor Performing Main Replacements WBS: E.0010011.003, E.0000057.001, E.0000058.001, E.0010043.019 (Capital)

Project Summary and Scope

For 2020, the poor performing mains materials primarily included PEA and vintage coated steel. Actual replacement activity in 2020 included:

Geographic Area (by Division)	Main (Miles)
Grand Forks	0.5
Moorhead	4.4
Newport	3.5
Southeast	26.1
St. Cloud	6.7
St. Paul	9.0
White Bear Lake	24.4
Wyoming	3.5
Total	**78.1**

2020 Actual Project Costs
($ Millions)

	2020 Capital, As Filed	2020 Capital Actuals	Variance	% Capital Variance	2020 O&M, As Filed	2020 O&M Actuals	Variance	% O&M Variance
Capital/O&M Expenditure	$11.09	$20.19	$9.10	82.06%	$0.00	$0.00	$0.00	0.00%

Variance Explanation

Capital: As was the case in 2019, the main driver for the increase in capital expenditures is an increase in problematic pipeline replaced based on a revised relative risk assessment among GUIC projects. The projects consist of PEA mains and vintage coated steel. The construction resources and projects identified for 2020 were prioritized based on relative risk and SME input.

O&M: None.

2) Poor Performing Service Replacements
WBS: E.0000002.005, E.0010011.004 (Capital)

Project Summary and Scope
For 2020, the primary service-related material types addressed were PEA and vintage coated steel. Actual replacement activity in 2020 included:

Geographic Area (by Division)	Services (Number)
Moorhead	113
Newport	149
Southeast	1,002
St. Cloud	378
St. Paul	406
White Bear Lake	942
Wyoming	114
Total	**3,104**

2020 Actual Project Costs
($ Millions)

	2020 Capital, As Filed	2020 Capital Actuals	Variance	% Capital Variance	2020 O&M, As Filed	2020 O&M Actuals	Variance	% O&M Variance
Capital/O&M Expenditure	$6.93	$3.89	($3.04)	-43.87%	$0.00	$0.00	$0.00	0.00%

Variance Explanation

Capital: The decrease in capital expenditures is primarily due to more main replacement work occurring relative to service replacements. Service replacement projects are connected to their associated main replacement projects. Each year the percentage of main work compared to service work can fluctuate based on the geographic area where the work is performed (i.e., downtown vs. suburb). The actual capital expenditures in 2020 reflect the split of main and service work.

O&M: None.

3) IP Line Assessments
WBS: E.0000007.053, E.0000043.001, E.0000043.002, E.0000045.001, E.0000045.003, E.0000051.001, E.0000052.001 (Capital); A.0008510.114.001.005 (O&M)

Project Summary and Scope
This project includes health and condition assessments on IP lines. In 2020, the Company completed three IP Line assessment projects, an ECDA of the Brainerd Lakes IP system and engineering and permitting activities for the County Road B (Rice to Hamline) and Langdon Line (TBS to 1st St. in St. Paul Park) replacement projects.

DIMP and Mandatory Relocation Project Overviews

Line/Loop	Type	Project Length (mi)	Project Type
Brainerd Lakes Line	ECDA	36	O&M
County Road B – Rice to Hamline	Replacement	3.4	Capital
Langdon Line – TBS to 1st St in St. Paul Park	Replacement	5.8	Capital

- **Brainerd Lakes Lines:** This project included several high-pressure distribution pipe segments in the Brainerd Lakes Area. These segments were assessed using ECDA methodology.
- **County Road B – Rice to Hamline:** As discussed previously, this is a three-year project with engineering and permitting completed in 2020, and construction in 2021 and 2022.

- **Langdon Line – TBS to 1st St in St. Paul Park:** As discussed previously, this is a three-year project with engineering and permitting completed in 2020, and construction in 2021 and 2022.

2020 Actual Project Costs
($ Millions)

	2020 Capital, As Filed	2020 Capital Actuals	Variance	% Capital Variance	2020 O&M, As Filed	2020 O&M Actuals	Variance	% O&M Variance
Capital/O&M Expenditure	$0.49	$1.31	$0.82	167.35%	$0.58	$0.25	($0.33)	(56.90%)

Variance Explanation

Capital: Of the $0.82 million increase, the primary driver was $0.92 million for initial engineering, environmental, permitting and planning for the Langdon Line project. This work was added to the scope of 2020 work for construction to begin in 2021. This increase was offset by lower engineering and permitting costs for the County Rd B – Rice to Hamline project.

O&M: The variance is due to a slight reduction in 2020 survey scope. The ECDA on two laterals in Newport, MN have been removed from the 2020 scope and will instead be surveyed in 2021.

4) Distribution Valve Replacement Project
WBS: E.0010011.005 (Capital)

Project Summary and Scope
Expenses relate to final restoration activities from 2019 installs.

2020 Actual Project Costs
($ Millions)

	2020 Capital, As Filed	2020 Capital Actuals	Variance	% Capital Variance	2020 O&M, As Filed	2020 O&M Actuals	Variance	% O&M Variance
Capital / O&M Expenditures	$0.00	$0.06	$0.06	100.00%	$0.00	$0.00	$0.00	0.00%

Variance Explanation

Capital: The variance is due to final restoration activities that carried into 2020 from 2019 installs.

O&M: None.

V. DIMP MULTI-YEAR PLAN

As mentioned above, many of the DIMP projects are initiatives that will span multiple years. As such, the Company has formulated a five-year plan for those projects that will extend beyond 2022. As the Company continues to execute its risk-based strategy and replacement projects planned in advance of 2023 and beyond, pipe segments displaying the highest level of relative risk will be targeted. Therefore, it is anticipated that there will be an increase in the number of overall projects.

The information provided in the table below depicts the current estimated costs for future years, broken out by capital and O&M expenditures. It is important to note that in many cases the figures presented are high-level estimates. More detailed annual estimates will be developed in the future. Many of these projects require detailed design and engineering that has not yet been performed. Additionally, coordination with local government entities, securing rights-of-way and permits, resource and equipment availability and unforeseen circumstances all can have an impact on final construction estimates.

DIMP 2023-2026 Plan[14]
($ Millions)

	2023 Estimates		2024 Estimates		2025 Estimates		2026 Estimates	
Project	**Capital**	**O&M**	**Capital**	**O&M**	**Capital**	**O&M**	**Capital**	**O&M**
Poor Performing Mains	$15.56	$0.00	$18.43	$0.00	$12.11	$0.00	$12.43	$0.00
Poor Performing Services	$5.19	$0.00	$6.14	$0.00	$4.04	$0.00	$4.15	$0.00
Intermediate Pressure (IP) Lines Assessments	$14.11	$0.25	$8.91	$0.25	$18.11	$0.25	$18.58	$0.25
Distribution Valve Replacement	$0.42	$0.00	$0.38	$0.00	$0.38	$0.00	$0.39	$0.00
Casing Renewal	$1.76	$0.00	$2.94	$0.00	$2.94	$0.00	$3.02	$0.00
Total	**$37.04**	**$0.25**	**$36.80**	**$0.25**	**$37.58**	**$0.25**	**$38.57**	**$0.25**

VI. MANDATED RELOCATIONS

Mandated relocations are projects that require the Company to move existing infrastructure to meet federal, state, or local requirements. This includes relocating facilities that are in direct conflict with street expansions within public rights-of-way and safety-related work required by a governing authority. The Company must invest capital to achieve these relocations and establishment of service via infrastructure at a different location.

[14] Capital figures denoted represent total estimated capital expenditures, including removal costs.

The Company requests recovery of the following capital expenditures associated with Mandated Relocations:

2022 Estimated Mandated Relocation Project Costs
($ Millions)

Mandated Relocation Program	2022 Capital	2022 O&M
Total 2022 Capital Expenditures and O&M	**$4.59**	**$0.00**
Total 2022 Minnesota Revenue Requirement[15]	**$1.94**	**$0.00**

Mandated relocation projects were included in the Company's 2021 GUIC Rider Petition[16]. The capital-related cost estimates for 2022 exclude internal labor and include materials, outside services, transportation, and a portion of construction overheads.

2022 Estimated Project Costs
$4.59 million Capital expenditure

Project Summary and Scope
The Company has currently been notified of three mandated relocation projects that will need to occur in 2022. These projects are located in Forest Lake, Nisswa, and Stillwater. The mandated relocation work in 2022 includes the following discrete projects:

- **County Rd 115 Main Relocation:** This project is a relocation of 26,000 feet of 4-inch PE main near Nisswa, MN which is in conflict with a Crow County road reconstruction project.
- **Forest Lake N Shore Cir:** This project is a relocation of 4,700 feet of 4-inch and 24,000 feet of 2-inch gas main which conflict with a Forest Lake reconstruction project.

[15] 2022 revenue requirements for Mandated Reloction projects are net of the estimated revenue requirement of $0.37 million collected in base rates.
[16] Docket No. G002/M-20-799

- **Stillwater County Rd 5 Relocate:** This project is a relocation of 2-inch and 4-inch main. Existing main conflicts with a Washington County reconstruction project for County Rd 5. This project was scheduled to begin in 2021; however, due to changes in Washington County's plans this project has been shifted to 2022.

In addition to the discrete projects noted above, the Company also budgets for routine relocation projects each year. Relocation routines are comprised of smaller (typically less than $300,000) projects involving the renewal of mains due to relocations. The amounts included in the 2022 GUIC Rider Petition are based on historical data and anticipated costs, as the Company most often does not receive information about small relocations ahead of any given calendar year.

Following are the Mandated Relocation project costs originally included in the Company's 2021 GUIC Rider Petition[17], as compared to revised 2021 costs estimates baed on current-year project developments and actual construction activity:

[17] Docket No. G002/M-20-799

2021 Estimated Mandated Relocation Project Costs ($ Millions)

Mandated Relocation Program	2021 Capital, As Filed	2021 Capital Estimates	Variance	% Capital Variance	2021 O&M, As Filed	2021 O&M Estimates	Variance	% O&M Variance
Mandated Relocations	$12.44	$7.86	($4.58)	(36.82%)	$0.00	$0.00	$0.00	0.00%
Total 2021 Capital Expenditures and O&M	**$12.44**	**$7.86**	**($4.58)**	**(36.82%)**	**$0.00**	**$0.00**	**$0.00**	**0.00%**
Total 2021 Minnesota Revenue Requirement[18]	**$0.35**	**$0.29**	**($0.06)**	**(16.12%)**	**$0.00**	**$0.00**	**$0.00**	**0.00%**

The capital-related cost estimates for 2021 exclude internal labor and include materials, outside services, transportation, and a portion of construction overheads not related to internal labor.

2021 Estimated Project Costs
$7.86 million Capital expenditure

Project Summary and Scope
The Company has several mandated relocation projects taking placing in 2021. These projects are located in New Brighton, Nisswa, Sauk Rapids, St. Paul, Woodbury and Wyoming. The mandated relocation work in 2021 includes the following discrete projects:

[18] 2021 revenue requirements for Mandated Reloction projects are net of the estimated revenue requirement of $0.37 million collected in base rates.

- **County Rd 13 Relocation Phase 2:** This project involves a County Road 13 relocation near Nisswa, MN, which is required by Crow Wing County due to road reconstruction and widening. The project requires relocation of 12,200 feet of 6-inch high-pressure main.
- **Install 2-inch polyethylene main St. Paul:** This project is a relocation and renewal of 4,800 feet of main in support of the City of St. Paul Residential Street Vitality Program.
- **New Brighton/Sunnyside:** This project involved relocating 4,000 feet of 4-inch coupled steel gas main, and 6,000 feet of 2-inch coupled steel gas main that conflicted with the street reconstruction project for the City of New Brighton.
- **Fiori Gas Main Relocation:** This project involved relocating 10,000 feet of 2-inch PEA gas main that conflicted with a street reconstruction project for the City of Wyoming.
- **Hudson & Settlers Ridge**: This project involved relocating 4,800 feet of 4-inch PE gas main that conflicted with the street reconstruction project for the City of Woodbury.
- **Pleasantwood Project:** This project involved relocating 6,000 feet of 2-inch PE gas main in Sauk Rapids that was in conflict with city street and storm water system improvements.
- **Cleveland Ave:** This project involved relocating 2,800 feet of 8-inch steel gas main, and 700 feet of 2-inch PE gas main that conflicted with the new storm sewer reconstruction project for Ramsey County

2021 Estimated Project Costs
($ Millions)

Mandated Relocation Program	2021 Capital, As Filed	2021 Capital Estimates	Variance	% Capital Variance	2021 O&M, As Filed	2021 O&M Estimates	Variance	% O&M Variance
Mandated Relocations	$12.44	$7.86	($4.58)	(36.82%)	$0.00	$0.00	$0.00	0.00%

Variance Explanation

Capital: The $4.58 million decrease, was driven by a $2.1 million reduction in Phase 2 of the County Rd 13 relocation project due to lower outside vendor contract costs. This project was completed 2.5 weeks earlier than originally anticipated which further reduced costs. In addition the estimated cost of routine relocation projects decreased by $2.7 million due to a decrease in historical actuals.

O&M: None.

Mandated Relocations 2023-2026 Plan[19]
($ Millions)

	2023 Estimates		2024 Estimates		2025 Estimates		2026 Estimates	
Project	**Capital**	**O&M**	**Capital**	**O&M**	**Capital**	**O&M**	**Capital**	**O&M**
Mandated Relocations	$5.16	$0.00	$4.46	$0.00	$3.62	$0.00	$3.90	$0.00
Total	**$5.16**	**$0.00**	**$4.46**	**$0.00**	**$3.62**	**$0.00**	**$3.90**	**$0.00**

[19] Capital figures denoted represent total estimated capital expenditures, including removal costs.

CAPITAL

Program	Regulation	WBS Structure	2020 Actuals	Cost Per Unit (CPU)	2021 Actuals[1]	2021 Forecast	2021 Total	Cost Per Unit (CPU) Assumptions	2022 Plan	Cost Per Unit (CPU) Assumptions
Distribution Valve Replacement	Code 49 CFR Part 192.1007(d).	E.0010011.005	$ 61,804	See Attachment D1(e) for actual cost results.	$ 28,266	$ 426,734	$ 455,000	See Attachment D1(f)	$ 440,000	See Attachment D1(f)
Poor Performing Mains	PHMSA Advisory Bulletin Nos. ADB-07-01, ADB-02-07, ADB-12-05, and ADB 08-02	E.0000057.001; E.0000058.001; E.0010011.003; E.0010043.019	$ 20,186,908	$46.72/ft. for mains installed by contractors and internal resources in 2020. Difference between actuals and those on the detail Attachment D1(a) are for restoration charges related to work in-serviced in 2019, with carryover costs in 2020 as well as non-GUIC recoverable internal labor. Footage and CPU were already captured within previous detail.	$ 6,015,206	$ 6,949,794	$ 12,965,000	Based on 2020 actuals, 2021 forecast is $46.72/ft. for mains installed by contractors and internal resources. Difference between dollar forecast and those on the detail tab are for restoration charges related to work in-serviced in 2020, with carryover costs in 2021. Footage and CPU were already captured within 2020 detail.	$ 14,110,000	Based on 2020 actuals, 2022 forecast is $46.72/ft. for contractor-performed work and internal/local projects. Considered the best available information.
Poor Performing Services		E.0000002.005; E.0010011.004;	$ 3,887,277	$1,083 per service installed by contractors and internal resources in 2020. Difference between actuals and those on the detail Attachment D1(a) are for restoration charges related to services in-serviced in 2019, with carryover costs in 2020 as well as non-GUIC recoverable internal labor. Footage and CPU were already captured within previous detail.	$ 579,498	$ 3,830,502	$ 4,410,000	Based on 2020 actuals, 2021 forecast is $1,083 per service installed by contractors and internal resources. Difference between forecast on 2021 tab and those on the detail tab are for restoration charges related to services in-serviced in 2020, with carryover costs in 2021. Footage and CPU were already captured within 2020 detail.	$ 4,690,000	Based on 2020 actuals, 2022 forecast is $1,083/service for contractor-performed work and internal/local projects. Considered the best available information.
Intermediate Pressure (IP) Line Assessments	Code 49 CFR Part 192.1007(d).	E.0000007.053; E.0000043.001; E.0000043.002; E.0000045.001; E.0000045.003; E.0000051.001; E.0000052.001	$ 1,314,262	See Attachment D1(d) for actual cost results.	$ 5,166,045	$ 17,943,955	$ 23,110,000	See Attachment D1(d)	$ 27,560,000	See Attachment D1(d)
Casing Renewal	Code 49 CFR Part 192.467	E.0010011.012	$ -	N/A	$ 131,133	$ 2,518,867	$ 2,650,000	See Attachment D1(h)	$ 590,000	See Attachment D1(h)
TOTAL DIMP CAPITAL			**$ 25,450,251**		**$ 11,920,148**	**$ 31,669,852**	**$ 43,590,000**		**$ 47,390,000**	

O&M

Program	Regulation	WBS Structure	2020 Actuals	Cost Per Unit (CPU)	2021 Actuals[1]	2021 Forecast	2021 Total	Cost Per Unit (CPU) Assumptions	2022 Plan	Cost Per Unit (CPU) Assumptions
Intermediate Pressure (IP) Line Assessments	Code 49 CFR Part 192.1007(d).	A.0008510.114.001.005; A.0008610.004.001.005	$ 246,827	See Attachment D1(d) for actual cost results.	$ 29,522	$ 549,478	$ 579,000	See Attachment D1(d)	$ 250,000	See Attachment D1(d)
TOTAL DIMP O&M			**$ 246,827**		**$ 29,522**	**$ 549,478**	**$ 579,000**		**$ 250,000**	

[1] Actual costs through June 2021.

NSP-MN Main & Service Replacement Projects 2020										
Area	City	Work Order Number	Description	Services Replaced	Total Service Cost	Service CPU ($/Srv Installed)	Installed Footage	Total Main Cost	Main CPU ($/Ft installed)	Class Location
Grand Forks	East Grand Forks	105431134/104492891	BW/EGF/GD GATEWAY DR/4" PE DIMP (MN Side)	0	$ -	N/A	2,502	$135,388	$ 54.11	4
Moorhead	Moorhead	104424586	MHD / 2020 DIMP / 30TH AVE S	0	$ -	N/A	4,312	$164,215	$ 38.08	4
	Moorhead	105265928	MHD / 2020 DIMP / 2ND Ave-6TH ST	27	$ 37,850	$ 1,402	5,564	$386,140	$ 69.40	4
	Moorhead	105431123/104351597	MHD/TB/GD APPLETREE LN/4215' OF 2" PE	27	$ 25,172	$ 932	4,252	$171,422	$ 40.32	1
	Moorhead	105470102/104336508	MHD/CW/RENSVOLD BLVD/4700' OF 2" PE/DIMP	22	$ 21,572	$ 981	4,788	$161,714	$ 33.77	1
	Moorhead	105470104/104355210	MHD/CW/ MAPLE LANE/4300' OF 2" PE/ DIMP	37	$ 36,033	$ 974	4,166	$121,356	$ 29.13	1
Newport	Cottage Grove	104278793	CTG / 2020 DIMP / GRENADIER AVE	32	$ 25,713	$ 804	2,779	$97,472	$ 35.07	4
	Cottage Grove	104278797	CTG / 2020 DIMP / GREYSTONE AVE S	35	$ 28,273	$ 808	3,102	$97,213	$ 31.34	2
	Cottage Grove	104278800	CTG / 2020 DIMP / GROSPOINT AVE	35	$ 31,365	$ 896	2,931	$97,432	$ 33.24	2
	Newport	104248108	NPT / 2020 DIMP / 5TH AVE - 3RD AVE	47	$ 67,767	$ 1,442	8,836	$1,220,653	$ 138.15	4
	South St. Paul	105192382	SSP / WENTWORTH AVE / 720' OF 6" PE	0	$ -	N/A	678	$31,857	$ 46.99	4
Southeast	Bayport	104383540	BAY / 2020 DIMP / 3RD ST	24	$ 28,811	$ 1,200	3,886	$237,758	$ 61.18	4
	Fairbault	102876709	FBT/2018 DIMP/IRVING & DIVISION	36	$ 33,056	$ 918	3,512	$176,720	$ 50.32	1
	Faribault	105118104	FBT / 2020 DIMP / DIVISION ST W	1	$ 405	$ 405	240	$32,423	$ 135.10	4
	Goodview	105231964	GVW / 2020 DIMP / 44TH ST - GOODVIEW P2	96	$ 98,174	$ 1,023	9,628	$435,659	$ 45.25	4
	Lake City	104141943	LKC / 2019 DIMP / CAMP LAKEVIEW RD	5	$ 13,655	$ 2,731	3,922	$111,684	$ 28.48	4
	Lake City	104309849	LKC / 2020 DIMP / PRAIRIE ST 7200ft 2PE	48	$ 45,081	$ 939	7,798	$359,207	$ 46.06	1
	Lake City	104474487	LKC / 2020 DIMP / S 7TH ST	79	$ 51,601	$ 653	8,379	$413,667	$ 49.37	1
	Lake City	105176505	LKC / 2020 DIMP / WASHINGTON ST	35	$ 38,975	$ 1,114	8,125	$374,817	$ 46.13	4
	Lake City	105063008	LKC / 2020 DIMP / WOODBURN ST	72	$ 71,165	$ 988	13,871	$567,837	$ 40.94	4
	Northfield	102949006	NFD / 2018 DIMP / 321 ST W	26	$ 38,118	$ 1,466	5,378	$186,062	$ 34.60	1
	Red Wing	102576556	RDW / 2020 DIMP / WOODLAND DR	39	$ 34,233	$ 878	5,077	$394,656	$ 77.73	1
	Red Wing	102661567	RDW / 2020 DIMP / MAPLE ST - VARIOUS	84	$ 69,075	$ 822	8,758	$311,778	$ 35.60	1
	Red Wing	102843952	RDW / 2020 DIMP / REDING AVE - MILL RD	26	$ 35,480	$ 1,365	6,067	$268,677	$ 44.29	1
	Red Wing	104153803	RDW / 2020 DIMP / HAWTHORNE ST	81	$ 75,207	$ 928	7,446	$457,645	$ 61.46	4
	Red Wing	104344155	RDW / 2020 DIMP / MAPLE ST 2	145	$ 141,123	$ 973	16,280	$845,462	$ 51.93	1
	Winona	105237606	WNA / 2020 DIMP / 44th St Goodview P1	117	$ 123,164	$ 1,053	17,259	$742,276	$ 43.01	4
	Winona	104525005	WNA / 2020 DIMP / KANSAS ST & 3RD ST	7	$ 8,489	$ 1,213	1,672	$163,321	$ 97.68	4
	Winona	105371110	WNA / 2020 DIMP / BUNDY BLVD	1	$ 64	$ 64	1,535	$60,143	$ 39.18	4
	Winona	104630734	WNA / 2020 DIMP / CARIMONA ST	80	$ 90,207	$ 1,128	9,094	$384,318	$ 42.26	1
St. Cloud	Sauk Rapids	105047894	SRP 1646 ST HWY 23 RENEW 3700 PEA MAIN	11	$ 37,598	$ 3,418	3,040	$90,037	$ 29.62	1
	St. Cloud	104441720	34th Ave N St Cloud DIMP Project	54	$ 52,812	$ 978	7,148	$240,211	$ 33.61	2
	St. Cloud	104648879	35th Ave N St Cloud DIMP Project	61	$ 59,149	$ 970	5,262	$188,822	$ 35.88	2
	St. Cloud	105019506	11th Ave S Saint Cloud DIMP PROJECT	35	$ 41,426	$ 1,184	2,456	$94,232	$ 38.37	1
	Watertown	104439972	WTT WESTMINSTER AVE DIMP 7000FT 2"/4" PE	122	$ 184,151	$ 1,509	7,289	$248,638	$ 34.11	4
	Watertown	104498023	WTT ANGEL AVE DIMP 8700 2" PE	95	$ 114,182	$ 1,202	10,401	$308,697	$ 29.68	4
St. Paul	Falcon Heights	105238819	FCH / 2020 DIMP / TATUM ST	24	$ 20,711	$ 863	2,557	$77,914	$ 30.47	3
	Falcon Heights	105244744	FCH / 2020 DIMP / ARONA ST	43	$ 37,847	$ 880	4,186	$124,949	$ 29.85	3
	Roseville	104189886	RSV / 2020 DIMP / VICTORIA ST	12	$ 14,065	$ 1,172	2,559	$184,545	$ 72.12	4
	Roseville	104234968	RSV/ 2020 DIMP / Roseville Shopping Ctr.	0	$ -	N/A	426	$20,130	$ 47.25	4
	Roseville	105265892	RSV / 2020 DIMP / PERIMETER DRIVE	9	$ 27,040	$ 3,004	3,570	$278,730	$ 78.08	4
	St. Paul	101877294	STP/2020 DIMP/AREA S-UPP AFTON PHASE 1	124	$ 110,802	$ 894	10,454	$435,984	$ 41.71	3
	St. Paul	101937752	STP/2018 DIMP/AREA S-UPP AFTON PHASE 2	93	$ 84,503	$ 909	7,238	$280,304	$ 38.73	3
	St. Paul	102798495	STP / 2019 DIMP / VALLEY VIEW PL	29	$ 29,811	$ 1,028	4,178	$252,691	$ 60.48	3
	St. Paul	102825205	STP/ 2019 DIMP/ Reaney Ave	63	$ 61,449	$ 975	8,478	$1,002,834	$ 118.29	4
	St. Paul	104401101	STP / 2020 DIMP / HIGHWOOD AVE - Q3 CREW	9	$ 8,881	$ 987	2,279	$97,734	$ 42.88	3
	St. Paul	104561491	STP/844 Hampden 20' 8" Steel to PE Dimp	0	$ -	N/A	17	$8,694	$ 511.41	1
	St. Paul	104854006	STP/ 10th St W/1630' PE Main Replacement	0	$ -	N/A	1,757	$174,396	$ 99.26	4
White Bear Lake	Dellwood	104554192	NWB/ Old Hwy 8/ Replace 250' of 2" PEC	0	$ -	N/A	158	$2,227	$ 14.10	3
	Lake Elmo	104336119	LKE / 2020 DIMP / 31ST-JANERO-JAMLEY	34	$ 42,548	$ 1,251	6,568	$213,075	$ 32.44	1
	Lake Elmo	104814510	LKE / 2020 DIMP / STILLWATER BLVD	13	$ 17,359	$ 1,335	3,746	$158,700	$ 42.37	1
	Mahtomedi	102466246	MTD/ 2018 DIMP / NEPTUNE ST	7	$ 10,094	$ 1,442	1,524	$115,801	$ 75.98	4
	Maplewood	102900270	MPW / 2019 DIMP / LARPENTEUR AVE	17	$ 18,459	$ 1,086	2,389	$213,807	$ 89.50	3
	Maplewood	104379024/104471560	MPW / 2020 DIMP / COUNTY ROAD B E	16	$ 17,780	$ 1,111	4,552	$162,224	$ 35.64	3
	New Brighton	104560295	NWB / 2020 DIMP / 9TH AVE NW	70	$ 60,043	$ 858	4,865	$160,505	$ 32.99	4
	New Brighton	104560296	NWB / 2020 DIMP / 12TH AVE NW	26	$ 23,028	$ 886	3,075	$85,224	$ 27.72	4
	New Brighton	104623446	NWB / 2020 DIMP / 10TH AVE NW	39	$ 32,773	$ 840	3,570	$114,681	$ 32.12	3
	New Brighton	104623449	NWB / 2020 DIMP / 11TH AVE NW	47	$ 58,557	$ 1,246	3,780	$109,498	$ 28.97	4
	New Brighton	104826653	NWB / 2020 DIMP / POPPYSEED DR	71	$ 109,677	$ 1,545	8,015	$615,024	$ 76.73	4
	North Oaks	104560298	NTO / 2020 DIMP / SPRING FARM LN	30	$ 53,336	$ 1,778	8,852	$271,087	$ 30.62	2
	North Oaks	104586290	NTO/ Mallard Rd N/ Recon 500' of 2"	0	$ -	N/A	535	$7,841	$ 14.66	2
	North St. Paul	104183081	NSP / 2020 DIMP / 15th AVE E	46	$ 50,078	$ 1,089	5,942	$256,541	$ 43.17	3
	North St. Paul	104425351	NSP OAKHILL PL RENEW MAIN DIMP	1	$ 1,159	$ 1,159	600	$16,787	$ 27.98	3
	North St. Paul	104970572	NSP / 2020 DIMP / DIVISION ST PHS 1	49	$ 42,749	$ 872	7,184	$277,747	$ 38.66	4
	North St. Paul	105161034	NSP / 2020 DIMP / DIVISION ST PHS 2	206	$ 206,247	$ 1,001	17,508	$569,299	$ 32.52	4
	North St. Paul	104306341	NSP / 2020 DIMP / 11TH AVE E	8	$ 12,996	$ 1,624	2,045	$127,597	$ 62.39	4
	Oakdale	103825338	OKD / 2020 DIMP / 52ND-UPP 51ST-GERSHWIN	20	$ 22,312	$ 1,116	3,711	$147,529	$ 39.75	4
	Shoreview	102869890	SHV / 2019 DIMP / VICTORIA ST	17	$ 25,076	$ 1,475	4,415	$384,908	$ 87.18	4
	Shoreview	103697613	SHV / 2019 DIMP / INGERSON RD	4	$ 871	$ 218	6,257	$85,479	$ 13.66	2
	Shoreview	104328947	SHV/ Pinewood Dr/ Recon 8800'	54	$ 53,440	$ 990	9,153	$223,623	$ 24.43	2
	Shoreview	104692241	SHV / 2020 DIMP / BRIGADOON DR	89	$ 81,520	$ 916	7,737	$444,634	$ 57.47	2
	White Bear Lake	102552601	WBL /2019 DIMP/ S SHORE BVD, E/BELLAIRE	56	$ 77,087	$ 1,377	9,823	$375,258	$ 38.20	4
	White Bear Lake	104345520	WBL / 2020 DIMP / LINCOLN AVE	22	$ 30,491	$ 1,386	2,467	$80,089	$ 32.46	4
	White Bear Lake	104475573	WBL/Bellaire Ave/ DIMP	0	$ -	N/A	268	$11,538	$ 43.05	4
Wyoming	Forest Lake	104426790	FRL / 2020 DIMP / 210TH ST N - FALCON	16	$ 17,526	$ 1,095	2,872	$123,098	$ 42.86	1
	Wyoming	105121540	WYO / 2020 DIMP / E VIKING BLVD	78	$ 95,858	$ 1,229	7,175	$223,087	$ 31.09	4
	Wyoming	105233332	WYO / 2020 DIMP /FOREST BLVD N	20	$ 45,615	$ 2,281	8,646	$380,907	$ 44.06	4
2020 DIMP Main & Service Replacements				**3,104**	**$3,360,934**	**$ 1,083**	**412,564**	**$19,276,331**	**$ 46.72**	

** Project list above includes non-recoverable internal labor.*

NSP-MN Main & Service Replacement Projects 2021									
Area	City	Description	Estimated Services	Estimated Service Cost	Service CPU	Estimated Footage	Estimated Main Cost	Main CPU	Class Location
Grand Forks	East Grand Forks	BW/EGF/GD/DIMP/3rd ST NW&3rd Ave NW	42	$ 45,477	$ 1,083	3,344	$ 156,232	$ 46.72	4
Moorhead	Moorhead	Moorhead - S 8th Street	15	$ 16,242	$ 1,083	1,800	$ 84,096	$ 46.72	4
Moorhead	Moorhead	Moorhead - Concordia College	1	$ 1,083	$ 1,083	2,190	$ 102,317	$ 46.72	1
Moorhead	Moorhead	Moorhead - S 30th Ave	30	$ 32,483	$ 1,083	20,950	$ 978,784	$ 46.72	4
Moorhead	Moorhead	Moorhead Center Mall	4	$ 4,331	$ 1,083	2,950	$ 137,824	$ 46.72	4
Newport	Cottage Grove	Cottage Grove - Grenadier	7	$ 7,579	$ 1,083	600	$ 28,032	$ 46.72	2
Newport	Cottage Grove	Cottage Grove - Hyde	3	$ 3,248	$ 1,083	200	$ 9,344	$ 46.72	2
Newport	West St. Paul	Concord St - St. Paul	87	$ 94,202	$ 1,083	13,300	$ 621,376	$ 46.72	4
Newport	West St. Paul	West St. Paul - Moreland Avenue	54	$ 58,470	$ 1,083	2,800	$ 130,816	$ 46.72	4
Newport	South St. Paul	South St. Paul - Marie Ave	66	$ 71,463	$ 1,083	5,180	$ 242,010	$ 46.72	4
Newport	South St. Paul	SSP - Messer & Malden	7	$ 7,579	$ 1,083	1,250	$ 58,400	$ 46.72	4
Northwest	St. Cloud	St. Cloud - 14th Ave NE	7	$ 7,579	$ 1,083	1,000	$ 46,720	$ 46.72	4
Northwest	St. Cloud	St. Cloud - 6th Ave S	33	$ 35,732	$ 1,083	4,100	$ 191,552	$ 46.72	1
Northwest	St. Cloud	St. Cloud - Rusan Street	20	$ 21,656	$ 1,083	8,500	$ 397,120	$ 46.72	2
Northwest	St. Cloud	St. Cloud - Sherwood Mobile Home Park	100	$ 108,278	$ 1,083	6,000	$ 280,320	$ 46.72	4
Northwest	St. Cloud	St. Cloud - Cloverleaf Trailer	157	$ 169,996	$ 1,083	7,500	$ 350,400	$ 46.72	4
Northwest	St. Cloud	W. St. Germain St. - St. Cloud	31	$ 33,566	$ 1,083	5,000	$ 233,600	$ 46.72	4
St. Paul	Inver Grove Heights	IGH - S Robert Trail	31	$ 33,566	$ 1,083	6,050	$ 282,656	$ 46.72	4
St. Paul	Roseville	Roseville - Terminal Road	27	$ 29,235	$ 1,083	3,175	$ 148,336	$ 46.72	4
St. Paul	Roseville	County B 2 - DIMP/RECON	16	$ 17,324	$ 1,083	2,850	$ 133,152	$ 46.72	4
St. Paul	Roseville	Cleveland Ave N	9	$ 9,745	$ 1,083	3,680	$ 171,930	$ 46.72	4
St. Paul	St. Paul	St. Paul - Churchill	152	$ 164,583	$ 1,083	8,400	$ 392,448	$ 46.72	4
St. Paul	St. Paul	STP 139651 - COMO Ave	74	$ 80,126	$ 1,083	6,100	$ 284,992	$ 46.72	4
St. Paul	St. Paul	Saint Paul - Water Street	28	$ 30,318	$ 1,083	4,250	$ 198,560	$ 46.72	4
St. Paul	St. Paul	Saint Paul - Snelling & Concordia	44	$ 47,642	$ 1,083	2,750	$ 128,480	$ 46.72	4
St. Paul	St. Paul	Larpenteur & Jackson	0	$ -	$ 1,083	4,600	$ 214,912	$ 46.72	3
St. Paul	St. Paul	St. Paul - Ohio Street	6	$ 6,497	$ 1,083	1,050	$ 49,056	$ 46.72	4
St. Paul	St. Paul	Edgerton & Wheelock	12	$ 12,993	$ 1,083	1,400	$ 65,408	$ 46.72	4
St. Paul	St. Paul	Whitall Ave	8	$ 8,662	$ 1,083	400	$ 18,688	$ 46.72	4
Southeast	Faribault	Woodland Dr & Greenleaf Rd Faribault	84	$ 90,954	$ 1,083	7,170	$ 334,982	$ 46.72	1
Southeast	Faribault	Faribault - Downtown	284	$ 307,510	$ 1,083	7,920	$ 370,022	$ 46.72	4
Southeast	Faribault	Lincoln Ave NW & 2nd St NW Farib	72	$ 77,960	$ 1,083	7,300	$ 341,056	$ 46.72	1
Southeast	Faribault	Faribault - Greenwood Place	83	$ 89,871	$ 1,083	4,007	$ 187,207	$ 46.72	4
Southeast	Goodview	Goodview - 54th	44	$ 47,642	$ 1,083	5,250	$ 245,280	$ 46.72	1
Southeast	Red Wing	Old W Main & Jackson - Red Wing	9	$ 9,745	$ 1,083	1,020	$ 47,654	$ 46.72	4
Southeast	Red Wing	West Ave & 9th St	2	$ 2,166	$ 1,083	100	$ 4,672	$ 46.72	1
Southeast	Red Wing	Old Zumbrota St & Guernsey Ln - Red Wing	28	$ 30,318	$ 1,083	3,970	$ 185,478	$ 46.72	1
Southeast	Red Wing	Red Wing - Levee Road	2	$ 2,166	$ 1,083	1,000	$ 46,720	$ 46.72	4
Southeast	Red Wing	Red Wing - W 5th St	22	$ 23,821	$ 1,083	3,450	$ 161,184	$ 46.72	4
Southeast	Red Wing	Red Wing - Featherstone Rd	15	$ 16,242	$ 1,083	1,790	$ 83,629	$ 46.72	4
Southeast	Winona	Winona - Cottonwood Dr	8	$ 8,662	$ 1,083	1,200	$ 56,064	$ 46.72	4
Southeast	Winona	Winona - Marian & Gale	94	$ 101,781	$ 1,083	5,190	$ 242,477	$ 46.72	4
Southeast	Winona	Winona - Theurer Blvd	9	$ 9,745	$ 1,083	4,200	$ 196,224	$ 46.72	1
Southeast	Winona	Winona - Industrial Park Rd	19	$ 20,573	$ 1,083	5,820	$ 271,910	$ 46.72	4
Southeast	Winona	Winona - Frontenac Dr & Menard Rd	16	$ 17,324	$ 1,083	3,250	$ 151,840	$ 46.72	4
Southeast	Winona	Lion's Park - Winona	2	$ 2,166	$ 1,083	190	$ 8,877	$ 46.72	1
White Bear Lake	Arden Hills	Arden Hills - Lexington Ave	35	$ 37,897	$ 1,083	7,000	$ 327,040	$ 46.72	4
White Bear Lake	Little Canada	Little Canada - S Owasso Blvd	9	$ 9,745	$ 1,083	2,200	$ 102,784	$ 46.72	3
White Bear Lake	Little Canada	Little Canada - Country Drive	38	$ 41,146	$ 1,083	9,600	$ 448,512	$ 46.72	4
White Bear Lake	Little Canada	Maplewood - Kohlman Avenue	26	$ 28,152	$ 1,083	8,400	$ 392,448	$ 46.72	4
White Bear Lake	Little Canada	Arden Hills - Red Fox Rd	11	$ 11,911	$ 1,083	2,000	$ 93,440	$ 46.72	4
White Bear Lake	Mahtomedi	Mahtomedi - Wildwood Road	32	$ 34,649	$ 1,083	2,000	$ 93,440	$ 46.72	4
White Bear Lake	Maplewood	Maplewood Mall PEA	3	$ 3,248	$ 1,083	800	$ 37,376	$ 46.72	4
White Bear Lake	New Brighton	New Brighton 7th St NW	48	$ 51,973	$ 1,083	5,750	$ 268,640	$ 46.72	4
White Bear Lake	New Brighton	Windsor Court - New Brighton	80	$ 86,622	$ 1,083	3,600	$ 168,192	$ 46.72	3
White Bear Lake	North St. Paul	HWY 36 - Castle Ave	14	$ 15,159	$ 1,083	3,550	$ 165,856	$ 46.72	4
White Bear Lake	Shoreview	Lexington & Cannon	132	$ 142,927	$ 1,083	14,000	$ 654,080	$ 46.72	4
White Bear Lake	Shoreview	Shoreview - Rice/Marie Street	20	$ 21,656	$ 1,083	2,000	$ 93,440	$ 46.72	2
White Bear Lake	Shoreview	Victoria St (former Cty Rd E) - Shoreview	3	$ 3,248	$ 1,083	1,850	$ 86,432	$ 46.72	4
White Bear Lake	White Bear Lake	Lakewood Ave - WBL	180	$ 194,900	$ 1,083	12,000	$ 560,640	$ 46.72	2
Wyoming	Forest Lake	Forest Lake - Harrow Ave	0	$ -	$ 1,083	6,000	$ 280,320	$ 46.72	1
Wyoming	Forest Lake	Forest Lake - Lake St & 4th Ave SW	38	$ 41,146	$ 1,083	3,300	$ 154,176	$ 46.72	4
Wyoming	Lindstrom	Broadway St - Lindstrom	30	$ 32,483	$ 1,083	2,500	$ 116,800	$ 46.72	4
2021 Designed DIMP-related Main Replacement Total			**2,563**	**$ 2,775,165**	**$ 1,083**	**280,746**	**$ 13,116,453**	**$ 46.72**	

** Project list above includes non-recoverable internal labor.*
*** Cost estimates based on $46.72/ft of main and $1,083/service per Attachment D1*

NSP-MN Main & Service Replacement Projects 2022									
Area	**City**	**Description**	**Estimated Services**	**Estimated Service Cost**	**Service CPU**	**Estimated Footage**	**Estimated Main Cost**	**Main CPU**	**Class Location**
Moorhead	Moorhead	Moorhead - 5th and 4th St S	296	$ 320,503	$ 1,083	26,000	$ 1,214,720	$ 46.72	4
Moorhead	Moorhead	Moorhead - 16th St N	28	$ 30,318	$ 1,083	2,850	$ 133,152	$ 46.72	4
Moorhead	Moorhead	Moorhead - 20th St N	84	$ 90,954	$ 1,083	7,750	$ 362,080	$ 46.72	1
Moorhead	Moorhead	Moorhead - Highway 75	52	$ 56,305	$ 1,083	8,050	$ 376,096	$ 46.72	4
St. Paul	Falcon Heights	Falcon Heights - Larpenteur Ave	4	$ 4,331	$ 1,083	1,250	$ 58,400	$ 46.72	4
St. Paul	Roseville	Rice Street 6" - Roseville	50	$ 54,139	$ 1,083	7,400	$ 345,728	$ 46.72	4
St. Paul	St. Paul	Oakdale Ave - West St. Paul	27	$ 29,235	$ 1,083	5,500	$ 256,960	$ 46.72	4
St. Paul	St. Paul	St. Paul - Milton St. N	18	$ 19,490	$ 1,083	1,800	$ 84,096	$ 46.72	4
St. Paul	St. Paul	Hampden Ave - St. Paul	59	$ 63,884	$ 1,083	4,625	$ 216,080	$ 46.72	4
St. Paul	St. Paul	STP 139472 - Rice Street	24	$ 25,987	$ 1,083	800	$ 37,376	$ 46.72	4
Southeast	Northfield	Northfield - Woodley St W	11	$ 11,911	$ 1,083	2,240	$ 104,653	$ 46.72	4
White Bear Lake	Maplewood	Century & Stillwater	26	$ 28,152	$ 1,083	3,750	$ 175,200	$ 46.72	4
White Bear Lake	New Brighton	Forest Dale Rd - New Brighton	49	$ 53,056	$ 1,083	5,200	$ 242,944	$ 46.72	3
Wyoming	Stacy	Forest Ave - Stacy	45	$ 48,725	$ 1,083	5,800	$ 270,976	$ 46.72	4
2022 Designed DIMP-related Main Replacement Total			**773**	**$ 836,989**	**$ 1,083**	**83,015**	**$ 3,878,461**	**$ 46.72**	

** Remaining projects are in-process of development and design; this work will take place the last quarter of 2021 and the first two quarters of 2022.*
*** Cost estimates based on $46.72/ft of main and $1,083/service per Attachment D1*

2020		
Project Name	**Project Description**	**Assumptions**
Brainerd Lakes IP - ECDA	· Project Type: ECDA · Regulation: 49 CFR 192.1007(d) · Overview: Conducted ECDA to provide baseline assessment. · Location: Brainerd, MN · 2020 Assessment Period: May – October 2020 2020 Actual O&M Costs: $246,827	
H005 - Lexington to Snelling Capital Project (no O&M)	· Project Type: Pipeline Replacement · Regulation: 49 CFR 192.1007(d) · Overview: 3.0 mile replacement project; the pipeline was constructed in 1964 using vintage materials and construction methods; resulting in threats associated with material and construction defects. · Location: Arden Hills beginning at the intersection of Snelling and Hamline and continuing north to Lexington and I694. · Constructed in 2018 2020 Actual Costs: -$43,661 Restoration/Material Credits	· Benefits: Eliminate poor performance, unknown construction · Current Classification: High Pressure Distribution · Future Classification: Distribution
Colby Lake Lateral - Woodlane to Colby Lake Capital Project (no O&M)	· Project Type: Pipeline Replacement · Regulation: 49 CFR 192.1007(d) · Overview: 2.5 mile replacement project; the pipeline was constructed in 1964-1965 using vintage materials and construction methods which, while acceptable at the time, are now associated with threats that contribute to the probability of failures in the pipelines. · Location: Woodbury, MN · Constructed in 2018 2020 Actual Costs: -$71 Material Credits	· Benefits: ILI assessable · Current Classification: High Pressure Distribution · Future Classification: Distribution
County Road B - Rice to Hamline Capital Project (no O&M)	· Project Type: Pipeline Replacement · Regulation: 49 CFR 192.1007(d) · Overview: 3.4 mile replacement project; the pipeline was constructed in 1953-1959 using vintage materials and construction methods which, while acceptable at the time, are now associated with threats that contribute to the probability of failures in the pipelines. · Location: Roseville, MN · Engineering in 2020. Construction planned in 2021 and 2022 2020 Actual Costs: $ 433,687 Engineering	· Benefits: ILI assessable · Current Classification: Distribution · Future Classification: Distribution
Langdon Line - TBS to 1st St in St. Paul Park Capital Project (no O&M)	· Project Type: Pipeline Replacement · Regulation: 49 CFR 192.1007(d) · Overview: 5.8 mile replacement project; the pipeline was originally installed in · Location: Cottage Grove, MN & St. Paul Park, MN · Engineering in 2020. Construction planned in 2021 and 2022 2020 Actual Costs: $ 924,306 Engineering	· Benefits: ILI assessable · Current Classification: Distribution · Future Classification: Distribution

2021		
Project Name	**Project Description**	**Assumptions**
River Crossing Assessments	· Project Type: Underwater Assessment · Regulation: 49 CFR 192.1007(d) · Overview: Underwater assessment to inspect for pipeline damage. · Locations: Brainerd, Clear Lake, Faribault, Newport, Northfield, St. Augusta, St. Cloud, St. Paul, St. Stephen, and Watab MN. · 2021 Assessment Period: September – October 2021 2021 Estimated O&M Costs: $96,000	· Mobilization: $4,000 · Assessment cost: $3,000 - $13,000
Brainerd Lakes IP	· Project Type: Follow up Digs from 2020 Survey · Regulation: 49 CFR 192.1007(d) · Overview: Reporting and follow up digs based on results of ECDA baseline assessment. · Location: Brainerd, MN · 2021 Assessment Period: May – October 2021 2021 Estimated O&M Costs: $60,000	· Cost/mile of survey: N/A · Dig cost: $30,000 - $80,000
H005	· Project Type: Follow up Digs from 2014 Survey · Regulation: 49 CFR 192.1007(d) · Overview: Follow up digs based on results of baseline assessment. · Location: New Brighton MN · 2021 Assessment Period: September – October 2021 2021 Estimated O&M Costs: $250,000	· Cost/mile of survey: N/A · Dig cost: $30,000 - $80,000
11006 - St. Cloud	· Project Type: ECDA · Regulation: 49 CFR 192.1007(d) · Overview: Conducting ECDA to provide baseline assessment. · Location: St. Cloud, MN · 2021 Assessment Period: September – October 2021 2021 Estimated O&M Costs: $18,000	· Cost/mile of survey: $6,500 · Dig cost: $30,000 - $80,000
11008 - Clear Lake Line	· Project Type: ECDA · Regulation: 49 CFR 192.1007(d) · Overview: Conducting ECDA to provide baseline assessment. · Location: Clear Lake, MN · 2021 Assessment Period: September – October 2021 2021 Estimated O&M Costs: $155,000	· Cost/mile of survey: $6,500 · Dig cost: $30,000 - $80,000
County Road B - Rice to Lexington	· Project Type: Pipeline Replacement · Regulation: 49 CFR 192.1007(d) · Overview: 3.4 mile replacement project; the pipeline was constructed in 1953-1959 using vintage materials and construction methods which, while acceptable at the time, are now associated with threats that contribute to the probability of failures in the pipelines. · Location: Roseville, MN · Construction expected to be completed in 2021 and 2022 Capital Project (no O&M) 2021 Estimated Costs: $ 12,990,000	· Benefits: ILI assessable · Current Classification: Distribution · Future Classification: Distribution
Langdon Line - TBS to Scott Blvd	· Project Type: Pipeline Replacement · Regulation: 49 CFR 192.1007(d) · Overview: 5.8 mile replacement project; the pipeline was originally installed in 1958 using multi diameter piping and mechanical couplings. Replacement with a new single diameter pipeline will make the line capable of being inspected with ILI tools. · Location: Cottage Grove, MN & St. Paul Park, MN · Construction expected to be completed in 2021 and 2022 Capital Project (no O&M) 2021 Estimated Costs: $ 10,120,000	· Benefits: ILI assessable · Current Classification: Distribution · Future Classification: Distribution

2022		
Project Name	**Project Description**	**Assumptions**
Brainerd Lakes IP	· Project Type: Follow up digs · Regulation: 49 CFR 192.1007(d) · Overview: Follow up digs based on results of ECDA baseline assessment. · Location: St. Cloud, MN · 2022 Assessment Period: May – October 2022 2022 Estimated O&M Costs: $44,000	· Cost/mile of survey: $6,500 · Dig cost: $30,000 - $80,000
11006 - St. Cloud	· Project Type: Follow up digs · Regulation: 49 CFR 192.1007(d) · Overview: Follow up digs based on results of ECDA baseline assessment. · Location: St. Cloud, MN · 2022 Assessment Period: May – October 2022 2022 Estimated O&M Costs: $40,000	· Cost/mile of survey: $6,500 · Dig cost: $30,000 - $80,000
11008 - Clear Lake Line	· Project Type: Follow up digs · Regulation: 49 CFR 192.1007(d) · Overview: Follow up digs based on results of ECDA baseline assessment. · Location: Clear Lake, MN · 2022 Assessment Period: May – October 2022 2022 Estimated O&M Costs: $96,000	· Cost/mile of survey: $6,500 · Dig cost: $30,000 - $80,000
Rahr Lateral	· Project Type: Indirect survey · Regulation: 49 CFR 192.1007(d) · Overview: Conducting ECDA to provide baseline assessment. · Location: Jackson, MN · 2022 Assessment Period: May – October 2022 2022 Estimated O&M Costs: $46,000	· Cost/mile of survey: $6,500 · Dig cost: $30,000 - $80,000
Winona Support Line	· Project Type: Indirect survey · Regulation: 49 CFR 192.1007(d) · Overview: Conducting ECDA to provide baseline assessment. · Location: Winona, MN · 2022 Assessment Period: May – October 2022 2022 Estimated O&M Costs: $24,000	· Cost/mile of survey: $6,500 · Dig cost: $30,000 - $80,000
County Road B - Lexington to Hamline & Cty Rd C	· Project Type: Pipeline Replacement · Regulation: 49 CFR 192.1007(d) · Overview: 3.4 mile replacement project; the pipeline was constructed in 1953-1959 using vintage materials and construction methods which, while acceptable at the time, are now associated with threats that contribute to the probability of failures in the pipelines. · Location: Roseville, MN Capital Project (no O&M) · Construction expected to be completed in 2021 and 2022 2022 Estimated Costs $ 17,860,000	· Benefits: ILI assessable · Current Classification: Distribution · Future Classification: Distribution
Langdon Line - Scott Blvd to 1st St	· Project Type: Pipeline Replacement · Regulation: 49 CFR 192.1007(d) · Overview: 5.8 mile replacement project; the pipeline was originally installed in 1958 using multi diameter piping and mechanical couplings. Replacement with a new single diameter pipeline will make the line capable of being inspected with ILI tools. · Location: Cottage Grove, MN & St. Paul Park, MN Capital Project (no O&M) · Construction expected to be completed in 2021 and 2022 2022 Estimated Costs $ 8,260,000	· Benefits: ILI assessable · Current Classification: Distribution · Future Classification: Distribution
H005	· Project Type: Pipeline Replacement · Regulation: 49 CFR 192.1007(d) · Overview: 2.9 mile replacement project; the pipeline was originally installed in the 1960's. Replacement with a new single diamter pipeline will make the line capable of being inspected with ILI tools. · Location: Arden Hills, MN & New Brighton, MN Capital Project (no O&M) · Engineering & Design in 2022; Construction in 2023 2022 Estimated Costs $ 1,440,000	· Benefits: ILI assessable · Current Classification: Distribution · Future Classification: Distribution

NSP-MN Distribution Valve Replacement Projects 2020				
Project Name/Location	**Valve #**	**Size/Mtl**	**Cost**	
Snelling & Englewood, STP	EV1020	12" SC	$	18,236
Fairview & Juno, STP	EV1030	16" SC	$	3,645
Fairview & Montreal, STP **	EV1037	16" SC	$	15,496
Fairview & Montreal, STP **	EV1038	16" SC	$	-
Hwy 19 W TBS, Northfield **	EV3512	8" SC	$	24,427
Hwy 19 W TBS, Northfield **	EV3513	6" SC	$	-
		Total Cost:	$	61,804

Total valves: 6

** 2020 costs represent carryover costs from 2019 installs.*

*** EV1037 & EV1038 are in the same intersection and considered 1 project. EV3512 & EV3513 are in the same intersection and considered 1 project.*

NSP-MN Distribution Valve Replacement Projects 2021			
Project Name/Location	**Valve #**	**Size/Mtl**	**Estimated Cost**
St Albans & Arlington (Southside), STP	EV1074	12" SC	$ 75,000
Dodd Rd & Hwy 110 (North of Intersection), Mendota Heights**	EV1107 & EV1108	12" SC	$ 75,000
Victoria St N & Co Rd C W (Eastside), Roseville	DV6781	4" SC	$ 15,000
Victoria St N & Woodhill Dr (Southside), Roseville	EV6149	4" SC	$ 15,000
Marion St & Thomas Ave (Westside), St Paul	DV1397	3" Steel	$ 10,000
Alrington & St Albans (West of Intersection), St Paul	NEW	12" SC	$ 75,000
Alley East of 7th Ave S & I-494 (North of Intersection), South St Paul	NEW	8" SC	$ 50,000
6th St & 44th Ave, Winona	NEW	6" SC	$ 40,000
Dale & Minnehaha (East of Intersection), St Paul	NEW	6" PE	$ 25,000
Afton Rd & Tower Dr (West of Intersection), Woodbury	NEW	6" PE	$ 25,000
St Johns Dr & Brookview Rd (East of Intersection), Woodbury	NEW	4" PE	$ 7,500
Interlachen & Duckwood (North of Intersection), Woodbury	NEW	4" PE	$ 7,500
Saratoga & Grand (North of Intersection), St Paul	NEW	4" PE	$ 7,500
Dale & Charles Ave (East of Intersection), St Paul	NEW	4" PE	$ 7,500
1355 Grant St, Lake City	NEW	4" PE	$ 7,500
North of 8316 Hadley Ave S, Cottage Grove	NEW	4" PE	$ 7,500
Ventura Dr & Courtly Rd (Northwest of Intersection), Woodbury	NEW	4" PE	$ 7,500
Radio Dr & Dale Rd (East of Intersection), Woodbury	EV4162	4" PE	$ 7,500
Chestnut & 4th St, Winona	NEW	2" PE	$ 5,000
Annapolis St W & Ohio St (East of Intersection), St Paul	NEW	2" PE	$ 5,000
Baker St W & Smith Ave S (East of Intersection), St Paul	NEW	2" PE	$ 5,000
3rd Ave N & Marie Ave (North of Intersection), South St Paul	NEW	2" PE	$ 5,000
James Ave & Edgcumbe (South of Intersection), St Paul	NEW	2" PE	$ 5,000
Dewey St & Marshall Ave (West of Intersection), St Paul	NEW	2" PE	$ 5,000
Lakeview Dr & Hudson Rd (South of Intersection), Woodbury	NEW	2" PE	$ 5,000
Lake Rd & Kingsfield Ln (North of Intersection), Woodbury	NEW	2" PE	$ 5,000
Lake Rd & Eagle Valley Dr (Northwest of Intersection), Woodbury	NEW	2" PE	$ 5,000
Lake Rd & Eagle Valley Dr (Northeast of Intersection), Woodbury	NEW	2" PE	$ 5,000
Ventura Dr & Courtly Rd (Northeast of Intersection), Woodbury	NEW	2" PE	$ 5,000
75th St E & Dawn Ave (South of Intersection), Inver Grove Heights	NEW	2" PE	$ 5,000
Concord St S (South of the East Co Rd Line Crossing), South St Paul	NEW	2" PE	$ 5,000
Springwood Ln & 9th Ave SW, Faribault	NEW	2" PE	$ 5,000
Greenwood Pl & 9th St SW, Faribault	NEW	2" PE	$ 5,000
210 Minnesota St, Lake City	NEW	2" SC	$ 7,500
Valve(s) to be identified	TBD	TBD	$ 27,500
		Estimated Total Cost:	$ 575,000

Total valves: 34

** Project list above includes non-recoverable internal labor.*

*** EV1107 & EV1108 are in the same intersection and considered 1 project.*

NSP-MN Distribution Valve Replacement Projects 2022			
Project Name/Location	**Valve #**	**Size/Mtl**	**Estimated 2022 Cost**
Summit & Fairview (Westside), St Paul	EV1325	16" Steel	$ 150,000
Lake Rd & Radio Dr (West of Intersection), Woodbury	EV5030	4" PE	$ 7,500
Annapolis St E & Oakdale Ave (South of Intersection), West St Paul	NEW	8" PE	$ 50,000
Fry St (between Edmund & Charles), St Paul	NEW	12" Steel	$ 75,000
Commonwealth & Cleveland (east of intersection), St Paul	NEW	8" Steel	$ 50,000
Upper 55th St E & 9th Ave S (North of Intersection), South St Paul	NEW	6" PE	$ 25,000
10th Ave S & 4th St S (East of Intersection), South St Paul	NEW	6" PE	$ 25,000
Valley Creek Rd & Bielenberg Dr (North of Intersection), Woodbury	NEW	4" PE	$ 7,500
Pioneer Dr & Interlachen (North of Intersection), Woodbury	NEW	4" PE	$ 7,500
Otto Ave & Lexington (North of Intersection), St Paul	NEW	4" PE	$ 7,500
Snelling & Dayton (East of Intersection), St Paul	NEW	4" PE	$ 7,500
Lake Rd & Wyndham Way (East of Intersection), Woodbury	NEW	4" PE	$ 7,500
Lake Rd & Radio Dr (North of Intersection), Woodbury	NEW	4" PE	$ 7,500
1875 50th St E (South of Tee), Inver Grove Heights	NEW	4" PE	$ 7,500
Haskell St E & Robert St S (West of Intersection), West St Paul	NEW	4" PE	$ 7,500
Settlers Ridge Pkwy & Brookview Rd (West of Intersection), Woodbury	NEW	4" PE	$ 7,500
Settlers Ridge Pkwy & Hudson Rd (West of Intersection), Woodbury	NEW	4" PE	$ 7,500
Settlers Ridge Pkwy & Oak Grove Blvd (West of Intersection), Woodbury	NEW	4" PE	$ 7,500
Settlers Ridge Pkwy & Halstead (North of Intersection), Woodbury	NEW	4" PE	$ 7,500
Hartford & Albert St (North of Intersection), St Paul	NEW	3" Steel	$ 10,000
6th Ave S & 9th St S (East of Intersection), South St Paul	NEW	2" PE	$ 5,000
Edgerton & Maryland (East of Instersection), St Paul	NEW	2" PE	$ 5,000
Hamline & Blair-Northside (East of Intersection), St Paul	NEW	2" PE	$ 5,000
St Johns Dr & Conifer Pass (East of Intersection), Woodbury	NEW	2" PE	$ 5,000
St Johns Dr & Water Lily Ln (East of Intersection), Woodbury	NEW	2" PE	$ 5,000
Cottage Grove Dr & Eagles Nest (west of Intersection), Woodbury	NEW	2" PE	$ 5,000
Woodcrest Dr & Grey Eagle Dr (South of Intersection), Woodbury	NEW	2" PE	$ 5,000
9th Ave S & 49th St E (West of Intersection), Inver Grove Heights	NEW	2" PE	$ 5,000
9th Ave S & Marie Ave (West of Intersection), South St Paul	NEW	2" PE	$ 5,000
Morton St W & Hall Ave (Northwest of Intersection), St Paul	NEW	2" PE	$ 5,000
Morton St W & Hall Ave (Northeast of Intersection), St Paul	NEW	2" PE	$ 5,000
Valve(s) to be identified	TBD	TBD	$ 12,500
		Estimated Total Cost:	$ 550,000

Total valves: 31

** Known valves, subject to change.*

*** Project list above includes non-recoverable internal labor.*

2021				
Casing Location	**Size**	**Leaking**	**Shorted**	**Estimated Cost**
16" Bore across Hwy 61-Winona	16"	N	Y	$1,360,000
Bore Hwy 36 & Rice St.	12"	N	Y	$175,000
Snelling & Transit Ave - Roseville	8"	N	Y	$295,000
Division St. & 18th Ave - St. Cloud	8"	N	Y	$350,000
Casing under RR tracks 400' E of Rice St. at entrance to 1900 Rice St. (St. Paul Water)	4"	N	Y	$125,000
RR Crossing at Fairview & Cty C	4"	N	Y	$125,000
12" Dodd & Hwy 110	12"	N	Unknown	$220,000
			Total	**$2,650,000**

2022				
Casing Location	**Size**	**Leaking**	**Shorted**	**Estimated Cost**
Bore Hwy 36 & Rice St.	12"	N	Y	$470,000
Century & Stillwater	6"	N	Y	$120,000
			Total	**$590,000**

Quantitative Risk Assessment for 2022 GUIC Programs and Initiatives

DIMP

Methodology

Xcel Energy's risk assessment methodology is a process to evaluate unwanted consequences and the likelihood of the consequences occurring on the Company's natural gas infrastructure. The goal of the Company's integrity programs is to protect the public, property and the environment from pipeline failures.

The purpose of this risk assessment methodology is to develop a quantitative risk score and assign a risk category (high, medium, low) for identified projects that are funded through the Company's GUIC Rider.

These quantitative risk assessment methodologies assign numeric values to likelihood and consequences by using available data and quantifying assessments. In some cases, subject matter expert (SME) input is utilized.

DIMP Poor Performing Mains & Services Project Risk

SEE ATTACHMENT D2(b)

Uses Commercial Software: J-DIMP™ by JANA

Data Inputs include data such as Leak Date, Leak Class, Leak Cause, Pipe Length, Pipe Material, Pipe Pressure, Pipe Diameter, Pipe Coating, Year Installed, Cathodic Protection, Presence of Excess Flow Valve on Service, Building Class and proximity to pipeline, and Population Density.

A Bundle (or project) is comprised of mains and services with similar material, diameter, pressure, cathodic protection status, and installation year. Typical projects consist of approximately 1500 feet of main and associated services and risers, and any valves that may be attached to the mains piping. Bundle lengths can vary significantly from project to project and serve as a starting point for establishing the scope of DIMP Poor Performing Main & Service projects.

The risk score used to rank the risk associated with each Bundle is calculated using the risk scores of each asset within the Bundle and is then normalized by the length (in feet) of the assets within the bundle.

Main Risk = ∑ (Likelihood of Failure x Consequence of Failure) for each threat

Service Risk = ∑ (Likelihood of Failure x Consequence of Failure) for each threat

Valve Risk = ∑ (Likelihood of Failure x Consequence of Failure) for each threat

Riser Risk = ∑ (Likelihood of Failure x Consequence of Failure) for each threat

The risk scores are generated for each year over the course of the next decade (10 years) to allow for an understanding of the rate of change of the risk associated with the projects.

Likelihood of failure in the J-DIMP™ model is calculated utilizing a Weibul Proportional Hazard Model for 25 specific threat types derived from the 8 primary threat categories established by PHMSA in 192.1007PHMSA (and noted on page 2, Attachment D).

Consequence of failure in the J-DIMP™ model is calculated for each threat for each individual asset and is based on the probability and magnitude of a number of loss of function or loss of containment scenarios that may come about due to each threat, and considers consequence factors such as Health and Safety, Property Damage, and Economic Loss.

As can be noted from the calculation above, Main & Service project risk scores (i.e. the Bundle Risk / Length scores) are calculated on a per foot basis. This allows for a direct comparison of projects that may vary significantly in length. The projects are grouped into high-, medium- and low-risk categories based on the resulting Bundle Risk / Length scores generated by the model.

Projects may also be designated as high or medium risk via engineering judgment provided by subject matter experts (SMEs) who evaluate factors such as recent leakage which is not yet in the J-DIMP model, field observations that the pipe has significant corrosion, the presence of problematic material types such as bare steel or copper, the presence of mechanical compression couplings, the presence of poor CP conditions, or emerging risk factors based on industry incidents or findings.

As the J-DIMP™ model is primarily used to rank and evaluate potential replacement projects, it is important to calculate not only the inherent risk presented by an asset in the Xcel Energy gas distribution network, but also the risk reduction achieved by replacing the asset, or mitigated risk. Mitigated risk is calculated as the difference in risk between a current asset (the baseline risk condition) and a hypothetical new asset in the same location and subject to the same operating conditions.

The two risk profiles needed to calculate the mitigated risk for every Bundle (or project) are evaluated in the same way as the baseline Bundle Risk score, and the resulting Mitigated Bundle Risk score is provided on a per foot basis to allow for a direct comparison of assets and bundles that may vary significantly in length. As with the baseline risk scores, the mitigated risk scores are generated for each year over the course of the next decade (10 years); for project evaluation the sum of the mitigated risk score over the decade is used.

The projects are grouped into high-, medium- and low-risk reduction categories based on the resulting Mitigated Bundle Risk / Length scores by the model. The resulting distribution of these scores is shown in the tables below.

Projects that are in the high- or medium-risk baseline risk categories and are also in one of the high- or medium-risk reduction mitigated risk categories, are considered good candidates for selection in the Poor Performing Mains & Services replacement program. On the other hand, Bundles (or projects) that may be in the high- or medium-risk baseline risk categories but are ranked in the low-risk reduction category, may be good candidates for operational changes such as accelerated leak survey.

Risk Reduction Category	Project Risk Scores Range (Mitigated Risk/Foot)	Number of J-DIMP™ Projects Currently Identified as of April 2021	Percentage	Main Mileage Currently Identified as of April 2021	Percentage
High	Score > 1.18	1,255	2%	95	1%
Medium	0.6695 ≤ Score ≤ 1.18	2,420	5%	216	2%
Low	0 ≤ Score ≤ 0.6695	46,686	93%	9,134	97%
Total	**All**	**50,361**	**100%**	**9,445**	**100%**

DIMP Intermediate Pressure (IP) Line Assessments
Line Replacements Project Risk

Project	Regulation	Current Classific-tion	Mech-anical Joint	Manufac-turing/ Construct-ion Defect	Corros-ion	3rd Party Damage	Other Leak History	Conseq-uence	Risk Score	Risk Level
Langdon Line (Scott Blvd to 1st St)	49 CFR 192.1007(d)	Distribution	2	2	1	1	0	3	15	High
County Road B (Lexington to Hamline & Cty Rd C)	49 CFR 192.1007(d)	Distribution	2	2	1	1	1	3	15	High

IP = distribution pipeline with MAOP > 60 psig

Used for decisions on replacement or other mitigation necessity

Data inputs:

- Construction Risk Factor - Presence of Mechanical Joint Joining Method
- Manufacturing/Construction Risk Factor – Post Construction Pressure Test
- History of Corrosion, 3rd Party Damage and other leakage
- Pipeline Class Location

Risk Score = Likelihood of Failure x Consequence of Failure

Likelihood of Failure = (Mechanical Joint Risk Factor + Manufacturing/Construction Risk Factor + Maximum Score of (Corrosion Risk Factor, 3rd Party Damage Risk Factor, Other Leak History Factor)

Mechanical Joint Risk Factor Lookup Table

Condition	Score
Pipeline Segment Contains Mechanical Joints	2
Does Not Include Mechanical Joints	0

Manufacturing/Construction Defect Risk Factor Lookup Table

Condition	Score
Post Construction Pressure Test < (MAOP x class location test factor from 192.619(a)(2)) OR Documentation of Pressure Test is not Traceable, Verifiable and Complete (TVC)	2
Post Construction Pressure Test ≥ (MAOP x class location test factor from 192.619(a)(2))	0

Corrosion Risk Factor Lookup Table

Condition	Score
History of Corrosion Leakage	1
Presence of Corrosion Pitting	1
No history of Corrosion leakage or pitting	0

3rd Party Damage Risk Factor Lookup Table

Condition	Score
Presence of 3rd Party Damage	1
No Presence of 3rd Party Damage	0

Other Leak History Risk Factor Lookup Table

Condition	Score
History of Leakage due to Causes other than corrosion or 3rd Party Damage	1
No History of Other Leakage	0

Consequence of Failure Lookup Table

Class Location	Score
4	4
3	3
2	2
1	0.5

Projects may also be designated as high risk or medium risk via engineering judgment provided by subject matter experts (SMEs).

Risk Matrix

			Consequence			
			Class 1	Class 2	Class 3	Class 4
			0.5	**2**	**3**	**4**
Likelihood of Failure	Mechanical Coupled **AND** No TVC Test to criteria **AND** Corrosion/Leakage/3rd Party	**5**	2.5	10	15	20
	Mechanical Coupled **AND** No TVC Test to criteria **AND NOT** Corrosion/Leakage/3rd Party	**4**	2	8	12	16
	Mechanical Coupled **OR** No TVC Test to criteria **AND** Corrosion/Leakage/3rd Party	**3**	1.5	6	9	12
	Mechanical Coupled **OR** No TVC Test to criteria **AND NOT** Corrosion/Leakage/3rd Party	**2**	1	4	6	8
	Not Mechanically Coupled, Pressure Test is TVC and meets criteria, no Corrosion/Leakage/3rd Party	**0**	0	0	0	0

High Risk, Risk Score ≥ 10
Medium Risk, 4 ≤ Risk Score < 10
Low Risk, Risk < 4

DIMP Intermediate Pressure (IP) Line Assessments

Line Assessments Project Risk

Project	Years Since Assessment	Pipeline Class Location	Risk Score	Risk Level
Rahr Lateral	Never Assessed	Class 4	12	High
Winona Support Line	Never Assessed	Class 4	12	High

IP = distribution pipeline with MAOP > 60 psig

Used for decisions on prioritizing integrity assessments

Data inputs:

- Years since last integrity assessment
- Pipeline Class Location

Risk Score = Likelihood of Failure x Consequence of Failure

Risk Matrix

			Consequence			
			Class 1	Class 2	Class 3	Class 4
			1	**2**	**3**	**4**
Likelihood of Failure	Last Assessment > 35 years prior or no previous assessment	**3**	3	6	9	12
	20 years ≤ Last Assessment < 35 years prior	**2**	2	4	6	8
	10 years ≤ Last Assessment < 20 years prior	**1.5**	1.5	3	4.5	6
	Last Assessment < 10 years prior	**0.5**	0.5	1	1.5	2

High Risk, Risk Score ≥ 8
Medium Risk, 4 ≤ Risk Score < 8
Low Risk, Risk < 4

DIMP Distribution Valve Replacement Project Risk

Project Name/Location	Size/Mtl	Main Line Valve Operable ? Y or N	Vault Condition? Good or Poor	Atmospheric Corrosion Status? Present or Not Present	Likelihood of Failure Score	Consequence of Failue Score	Risk Score	Risk Level
Summit & Fairview (Westside), St Paul	16" Steel	N	Poor	Not Present	3.75	4	15	High

The current list of inoperable valves were identified during annual inspections and field operating procedures and require replacement. As valves continue to be inspected by field personnel, exceptions will be reported and will be scored using the method lined out below. If valves score in the medium to high risk, then they may be added to the DIMP Distribution Valve Replacement Program.

Data inputs:

- Number of Premises in Existing Emergency Area due to non-functional valve
- Valve Operability
- Atmospheric Corrosion History
- Vault Condition

Risk Score = Likelihood of Failure x Consequence of Failure

Likelihood of Failure = Valve Operability Risk Factor + Vault Condition Risk Factor + Atmospheric Corrosion Risk Factor

Valve Operability Risk Factor Lookup Table

Valve Operable	Score
No	3
Yes	0

Vault Condition Risk Factor Lookup Table

Vault Condition	**Score**
Vault Condition Poor (Inaccessible due to water intrusion)	0.75
Vault Condition Good	0

Atmospheric Corrosion Risk Factor Lookup Table

Atmospheric Corrosion Status	**Score**
Atmospheric Corrosion Present	0.25
Atmospheric Corrosion Not Present	0

Consequence of Failure Lookup Table

Premise Count of Existing Emergency Area if valve remains inoperable	**Score**
Premises in Existing Emergency Area > 4000	4
3000 < Premises in Existing Emergency Area ≤ 4000	3
2000 < Premises in Existing Emergency Area ≤ 3000	2
Premises in Existing Emergency Area ≤ 2000	1

Risk Matrix

			Consequence			
			Existing Emergency Area < 2000 services	2000 < Premises in Existing Emergency Area ≤ 3000	3000 < Premises in Existing Emergency Area ≤ 4000	Premises in Existing Emergency Area > 4000
			1	**2**	**3**	**4**
Likelihood of Failure	Valve Inoperable AND Vault Condition Poor AND Atmospheric Corrosion	**4**	4	8	12	16
	Valve Inoperable AND Vault Condition Poor	**3.75**	3.75	7.5	11.25	15
	Valve Inoperable AND Atmospheric Corrosion	**3.25**	3.25	6.5	9.75	13
	Valve Inoperable	**3**	3	6	9	12
	Valve Operable but Vault Condition Poor AND Atmospheric Corrosion	**1**	1	2	3	4

High Risk, Risk Score ≥ 12
Medium Risk, 6 ≤ Risk Score < 12
Low Risk, Risk < 6

DIMP Distribution Casing Renewal Project Risk

Project Name/Location	Size	Likelihood of Failure Score	Consequence	Risk Score	Risk Level
Bore Hwy 36 & Rice St.	12”	4	3	12	Medium
Century & Stillwater	6”	4	3	12	Medium

Data inputs:

- Indication of a metallic short or electrolytic short between the casing and carrier pipe
- Guided Wave Ultrasonic Testing (“GWUT”) indication of carrier pipe corrosion metal loss in excess of 5% of the cross-sectional area, in accordance with PHMSA Guided Wave UT Go-No Go Procedures (I.e., “18-point checklist)
- Carrier Pipe diameter, operating pressure and location

Risk Score = Likelihood of Failure x Consequence of Failure

Consequence of Failure = Potential Impact Radius of downstream pipeline (PIR)

$$PIR\ (ft) = .69 * \sqrt{Pressure(psig) * Diameter(in)^2}$$

Likelihood of Failure Lookup Table

Condition	Score
Indication of a metallic short between the casing and carrier pipe or unable to verify no metallic short. A leak on the carrier pipe.	4
Indication of an electrolytic contact between the casing and carrier pipe.	3
No indication of a metallic short or electrolytic contact but indication of carrier pipe corrosion metal loss in excess of 5% of the cross-sectional area.	2
Indication of a change in casing integrity based on an evaluation of the casing monitoring program data using the PHMSA Guidelines for Integrity Assessment of Carrier Pipes.	1

Consequence of Failure Lookup Table

Condition	**Score**
Transmission Carrier Pipe that contains HCA	5
Transmission Carrier Pipe – Class 3 or Class 4; Distribution Main Carrier Pipe – PIR > 100 feet	4
Transmission Carrier Pipe – Class 1 or Class 2; Distribution Main Carrier Pipe – 20 ft. < PIR ≤ 100 ft.	3
Distribution Main Carrier Pipe – PIR ≤ 20 feet	2
Distribution Service Carrier Pipe	1

Risk Matrix

			Consequence				
			Distribution Service Carrier Pipe	Distribution Main Carrier Pipe – PIR ≤ 20 ft.	Transmission Carrier Pipe – Class 1 or Class 2 OR Distribution Main Carrier Pipe – 20 ft. < PIR ≤ 100 ft.	Transmission Carrier Pipe – Class 3 or Class 4 OR Distribution Main Carrier Pipe – PIR> 100 ft.	Transmission Carrier Pipe that Contains HCA
			1	**2**	**3**	**4**	**5**
Likelihood of Failure	Indication of a metallic short between the casing and carrier pipe or unable to verify no metallic short	**4**	4	8	12	16	20
	Indication of an electrolytic contact between the casing and carrier pipe	**3**	3	6	9	12	15
	No indication of a metallic short or electrolytic contact but indication of carrier pipe corrosion metal loss in excess of 5% of the cross-sectional area	**2**	2	4	6	8	10
	Indication of a change in casing integrity based on an evaluation of the casing monitoring program data using PHMSA Guidelines for Integrity Assessment of Cased Pipe	**1**	1	2	3	4	5

High Risk, Risk Score ≥ 15

Medium Risk, 6 ≤ Risk Score < 15

Low Risk, Risk < 6

DIMP Replacements Risk Assessment Scores

DIMP Problematic Mains & Services

Priority	J-DIMP Mitigated Risk/Foot	Priority Distribution
High	Score > 1.18	10
Medium	0.6695 ≤ Score ≤ 1.18	4
Low	Score < 0.6695	0
Total	All	14

Work Order Number	Description	Total Design FT.	Tot. Svc	YR INSTALLED	BASE MATERIAL	BASE PRESSURE	J-DIMP Mitigated Risk/Foot	Class Location
TBD	Forest Dale Rd - New Brighton	5,200	49	1959	Coated Steel	LOW	0.81	3
TBD	Oakdale Ave - West St. Paul	5,500	27	1965	Coated Steel	MEDIUM	1.35	4
TBD	St. Paul - Milton St. N	1,800	18	1965	Coated Steel	MEDIUM	2.27	4
TBD	Rice Street 6" - Roseville	7,400	50	1956	Coated Steel	MEDIUM	1.65	4
TBD	Hampden Ave - St. Paul	4,625	59	1954	Coated Steel	MEDIUM	1.90	4
TBD	Northfield - Woodley St W	2,240	11	1971	PE (Aldyl-A)	MEDIUM	1.22	4
TBD	Moorhead - 5th and 4th St S	26,000	296	1961	Coated Steel	LOW	1.14	4
TBD	Forest Ave - Stacy	5,800	45	1970	PE (Aldyl-A)	MEDIUM	SME	4
TBD	Moorhead - 16th St N	2,850	28	1962	Coated Steel	LOW	1.90	4
TBD	Moorhead - Highway 75	8,050	52	1961	Coated Steel	LOW	1.63	4
TBD	Moorhead - 20th St N	7,750	84	1961	Coated Steel/PE (Aldyl-A)	LOW	1.06	1
TBD	Century & Stillwater	3,750	26	1972	PE (Aldyl-A)	MEDIUM	0.71	4
TBD	STP 139472 - Rice Street	800	24	1980	PE (Aldyl-A)	MEDIUM	1.28	4
TBD	Falcon Heights - Larpenteur Ave	1,250	4	Unknown	PE (TR-418)	MEDIUM	1.22	4
TBD								

*Scoring included for known 2022 projects with completed engineering design.

216B.1635 RECOVERY OF GAS UTILITY INFRASTRUCTURE COSTS.

Subdivision 1. **Definitions.** (a) "Gas utility" means a public utility as defined in section 216B.02, subdivision 4, that furnishes natural gas service to retail customers.

(b) "Gas utility infrastructure costs" or "GUIC" means costs incurred in gas utility projects that:

(1) do not serve to increase revenues by directly connecting the infrastructure replacement to new customers;

(2) are in service but were not included in the gas utility's rate base in its most recent general rate case, or are planned to be in service during the period covered by the report submitted under subdivision 2, but in no case longer than the one-year forecast period in the report; and

(3) do not constitute a betterment, unless the betterment is based on requirements by a political subdivision or a federal or state agency, as evidenced by specific documentation, an order, or other similar requirement from the government entity requiring the replacement or modification of infrastructure.

(c) "Gas utility projects" means:

(1) replacement of natural gas facilities located in the public right-of-way required by the construction or improvement of a highway, road, street, public building, or other public work by or on behalf of the United States, the state of Minnesota, or a political subdivision; and

(2) replacement or modification of existing natural gas facilities, including surveys, assessments, reassessment, and other work necessary to determine the need for replacement or modification of existing infrastructure that is required by a federal or state agency.

Subd. 2. **Gas infrastructure filing.** A public utility submitting a petition to recover gas infrastructure costs under this section must submit to the commission, the department, and interested parties a gas infrastructure project plan report and a petition for rate recovery of only incremental costs associated with projects under subdivision 1, paragraph (c). The report and petition must be made at least 150 days in advance of implementation of the rate schedule, provided that the rate schedule will not be implemented until the petition is approved by the commission pursuant to subdivision 5. The report must be for a forecast period of one year.

Subd. 3. **Gas infrastructure project plan report.** The gas infrastructure project plan report required to be filed under subdivision 2 shall include all pertinent information and supporting data on each proposed project including, but not limited to, project description and scope, estimated project costs, and project in-service date.

Subd. 4. **Cost recovery petition for utility's facilities.** Notwithstanding any other provision of this chapter, the commission may approve a rate schedule for the automatic annual adjustment of charges for gas utility infrastructure costs net of revenues under this section, including a rate of return, income taxes on the rate of return, incremental property taxes, incremental depreciation expense, and any incremental operation and maintenance costs. A gas utility's petition for approval of a rate schedule to recover gas utility infrastructure costs outside of a general rate case under section 216B.16 is subject to the following:

(1) a gas utility may submit a filing under this section no more than once per year; and

(2) a gas utility must file sufficient information to satisfy the commission regarding the proposed GUIC. The information includes, but is not limited to:

(i) the information required to be included in the gas infrastructure project plan report under subdivision 3;

(ii) the government entity ordering or requiring the gas utility project and the purpose for which the project is undertaken;

(iii) a description of the estimated costs and salvage value, if any, associated with the existing infrastructure replaced or modified as a result of the project;

(iv) a comparison of the utility's estimated costs included in the gas infrastructure project plan and the actual costs incurred, including a description of the utility's efforts to ensure the costs of the facilities are reasonable and prudently incurred;

(v) calculations to establish that the rate adjustment is consistent with the terms of the rate schedule, including the proposed rate design and an explanation of why the proposed rate design is in the public interest;

(vi) the magnitude and timing of any known future gas utility projects that the utility may seek to recover under this section;

(vii)the magnitude of GUIC in relation to the gas utility's base revenue as approved by the commission in the gas utility's most recent general rate case, exclusive of gas purchase costs and transportation charges;

(viii)the magnitude of GUIC in relation to the gas utility's capital expenditures since its most recent general rate case; and

(ix) the amount of time since the utility last filed a general rate case and the utility's reasons for seeking recovery outside of a general rate case.

Subd. 5. **Commission action.** Upon receiving a gas utility report and petition for cost recovery under subdivision 2 and assessment and verification under subdivision 4, the commission may approve the annual GUIC rate adjustments provided that, after notice and comment, the costs included for recovery through the rate schedule are prudently incurred and achieve gas facility improvements at the lowest reasonable and prudent cost to ratepayers.

Subd. 6. **Rate of return.** The return on investment for the rate adjustment shall be at the level approved by the commission in the public utility's last general rate case, unless the commission determines that a different rate of return is in the public interest.

Subd. 7. **Commission authority; rules.** The commission may issue orders and adopt rules necessary to implement and administer this section.

History: *2005 c 97 art 10 s 1,3; 2013 c 85 art 7 s 2,9*

NOTE: This section expires June 30, 2023. Laws 2005, chapter 97, article 10, section 3, as amended by Laws 2013, chapter 85, article 7, section 9.

Capital TIMP, DIMP, and Mandated Relocations Expenditures Actual and Forecast Through 2026

Total Expenditures (CWIP plus RWIP excluding Internal Labor)

	2012 - 2020 Expenditures	2021	2022	2023	2024	2025	2026	Total Expenditures
Total TIMP	131,731,239	1,925,478	4,198,192	15,693,493	15,971,730	15,933,015	16,068,515	201,521,662
Total DIMP	139,026,306	42,328,591	45,974,890	35,943,154	35,707,457	36,464,943	37,425,575	372,870,917
Mandated Relocations	-	14,405,271	10,958,714	11,520,029	10,835,192	10,020,143	10,289,122	68,028,470
Total GUIC Expenditures	270,757,546	58,659,340	61,131,796	63,156,675	62,514,379	62,418,101	63,783,212	642,421,049

* Schedule does not include regulatory adjustments, disallowed projects, or base rate removals.

TIMP Capital Revenue Requirements for 2022

	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Annual 2022
Rate Base													
CWIP	-	-	-	-	-	-	-	-	-	-	-	-	-
Plant In-Service	127,633,363	127,792,152	127,956,037	128,121,771	128,287,863	128,667,636	129,218,879	129,693,848	130,107,437	130,471,653	130,782,686	131,055,031	131,055,031
Less Accumulated Book Depreciation Reserve	10,955,579	11,149,305	11,343,878	11,538,787	11,733,998	11,912,713	12,078,527	12,251,085	12,429,078	12,611,458	12,798,445	12,988,823	12,988,823
Less Accumulated Deferred Taxes	13,038,496	13,179,689	13,320,882	13,462,075	13,603,267	13,744,460	13,885,653	14,026,845	14,168,038	14,309,231	14,450,424	14,591,616	14,591,616
End Of Month Rate Base	103,639,288	103,463,158	103,291,277	103,120,909	102,950,599	103,010,463	103,254,699	103,415,918	103,510,321	103,550,964	103,533,818	103,474,592	103,474,592
Average Rate Base (Prior Mo + Cur Month/2)	103,718,564	103,551,223	103,377,218	103,206,093	103,035,754	102,980,531	103,132,581	103,335,308	103,463,119	103,530,643	103,542,391	103,504,205	
Return on Rate Base													
Debt Return (Avg RB * Wtd Cost of Debt)	194,472	194,159	193,832	193,511	193,192	193,088	193,374	193,754	193,993	194,120	194,142	194,070	2,325,708
Equity Return (Avg RB * Wtd Cost of Equity)	410,553	409,890	409,201	408,524	407,850	407,631	408,233	409,036	409,542	409,809	409,855	409,704	4,909,828
Total Return on Rate Base	605,025	604,049	603,034	602,036	601,042	600,720	601,607	602,789	603,535	603,929	603,997	603,775	7,235,536
Income Statement Items													
AFUDC Pre-Eligible	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating Expenses	44,070	44,070	44,070	44,070	44,070	44,070	44,070	44,070	44,070	44,070	44,070	44,070	528,843
Property Taxes	190,515	190,515	190,515	190,515	190,515	190,515	190,515	190,515	190,515	190,515	190,515	190,515	2,286,183
Book Depreciation	201,533	201,732	201,926	202,123	202,322	202,649	203,206	203,821	204,353	204,819	205,224	205,573	2,439,281
Deferred Taxes	141,193	141,193	141,193	141,193	141,193	141,193	141,193	141,193	141,193	141,193	141,193	141,193	1,694,313
Gross Up for Income Tax (see below)	25,996	25,766	24,695	24,497	24,300	(9,083)	(7,566)	27,269	27,309	27,300	28,083	27,953	246,520
Total Income Statement Expense	603,307	603,277	602,399	602,399	602,400	569,344	571,419	606,868	607,440	607,897	609,085	609,305	7,195,140
Total Revenue Requirement	**1,208,332**	**1,207,326**	**1,205,432**	**1,204,434**	**1,203,442**	**1,170,064**	**1,173,026**	**1,209,657**	**1,210,975**	**1,211,826**	**1,213,082**	**1,213,079**	**14,430,676**
Capital Structure													
Weighted Cost of Debt	2.25%												
Weighted Cost of Equity	4.75%												
Required Rate of Return	7.00%												
Current Income Tax Calculation													
Equity Return	410,553	409,890	409,201	408,524	407,850	407,631	408,233	409,036	409,542	409,809	409,855	409,704	4,909,828
Book Depreciation	201,533	201,732	201,926	202,123	202,322	202,649	203,206	203,821	204,353	204,819	205,224	205,573	2,439,281
Deferred Taxes	141,193	141,193	141,193	141,193	141,193	141,193	141,193	141,193	141,193	141,193	141,193	141,193	1,694,313
Less Tax Depreciation	689,688	689,688	691,818	691,818	691,818	776,308	776,308	691,818	691,818	691,818	689,688	689,688	8,462,273
Plus CPI-Tax Interest (If Applicable)	858	753	722	712	699	2,317	4,918	5,374	4,434	3,680	3,041	2,521	30,030
Total	64,449	63,881	61,224	60,735	60,246	(22,518)	(18,757)	67,606	67,704	67,683	69,625	69,303	611,179
Tax Rate (T/(1-T)	0.403351	0.403351	0.403351	0.403351	0.403351	0.403351	0.403351	0.403351	0.403351	0.403351	0.403351	0.403351	
Gross Up for Income Tax	25,996	25,766	24,695	24,497	24,300	(9,083)	(7,566)	27,269	27,309	27,300	28,083	27,953	246,520

DIMP and Mandated Relocations Capital Revenue Requirements for 2022

	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Annual 2022
Rate Base													
CWIP	-	-	-	-	-	-	-	-	-	-	-	-	-
Plant In-Service	158,945,524	159,558,909	160,246,932	162,024,118	165,432,028	168,819,755	172,378,220	176,183,530	179,637,161	182,953,577	185,720,339	239,021,814	239,021,814
Less Accumulated Book Depreciation Reserve	5,050,298	5,054,043	5,419,516	5,624,766	5,725,084	5,852,075	5,976,898	6,135,987	6,327,017	6,535,983	6,770,732	7,123,792	7,123,792
Less Accumulated Deferred Taxes	13,117,292	13,342,847	13,568,403	13,793,958	14,019,514	14,245,069	14,470,625	14,696,180	14,921,735	15,147,291	15,372,846	15,598,402	15,598,402
End Of Month Rate Base	140,777,933	141,162,018	141,259,013	142,605,394	145,687,431	148,722,611	151,930,697	155,351,363	158,388,409	161,270,303	163,576,760	216,299,621	216,299,621
Average Rate Base (Prior Mo + Cur Month/2)	140,672,830	140,969,976	141,210,516	141,932,203	144,146,412	147,205,021	150,326,654	153,641,030	156,869,886	159,829,356	162,423,532	189,938,191	
Return on Rate Base													
Debt Return (Avg RB * Wtd Cost of Debt)	263,762	264,319	264,770	266,123	270,275	276,009	281,862	288,077	294,131	299,680	304,544	356,134	3,429,686
Equity Return (Avg RB * Wtd Cost of Equity)	556,830	558,006	558,958	561,815	570,580	582,687	595,043	608,162	620,943	632,658	642,926	751,839	7,240,447
Total Return on Rate Base	820,592	822,325	823,728	827,938	840,854	858,696	876,905	896,239	915,074	932,338	947,471	1,107,973	10,670,133
Income Statement Items													
AFUDC Pre-Eligible	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating Expenses	20,833	20,833	20,833	20,833	20,833	20,833	20,833	20,833	20,833	20,833	20,833	20,833	250,000
Property Taxes	236,557	236,557	236,557	236,557	236,557	236,557	236,557	236,557	236,557	236,557	236,557	236,557	2,838,684
Book Depreciation	307,304	308,563	394,789	311,921	316,721	323,127	329,680	336,639	343,495	349,877	355,592	409,880	4,087,589
Deferred Taxes	225,555	225,555	225,555	225,555	225,555	225,555	225,555	225,555	225,555	225,555	225,555	225,555	2,706,665
Gross Up for Income Tax (see below)	39,618	42,532	75,212	(4,100)	(52,948)	(21,396)	(15,244)	(1,196)	37,082	57,536	85,167	153,187	395,451
Total Income Statement Expense	829,867	834,041	952,947	790,766	746,718	784,677	797,382	818,388	863,523	890,359	923,704	1,046,014	10,278,389
Total Revenue Requirement	**1,650,459**	**1,656,366**	**1,776,675**	**1,618,704**	**1,587,572**	**1,643,373**	**1,674,288**	**1,714,628**	**1,778,598**	**1,822,697**	**1,871,175**	**2,153,986**	**20,948,521**
Capital Structure													
Weighted Cost of Debt	2.25%												
Weighted Cost of Equity	4.75%												
Required Rate of Return	7.00%												
Current Income Tax Calculation													
Equity Return	556,830	558,006	558,958	561,815	570,580	582,687	595,043	608,162	620,943	632,658	642,926	751,839	7,240,447
Book Depreciation	307,304	308,563	394,789	311,921	316,721	323,127	329,680	336,639	343,495	349,877	355,592	409,880	4,087,589
Deferred Taxes	225,555	225,555	225,555	225,555	225,555	225,555	225,555	225,555	225,555	225,555	225,555	225,555	2,706,665
Less Tax Depreciation	1,074,109	1,071,785	1,079,811	1,200,819	1,345,301	1,297,929	1,314,436	1,314,207	1,252,848	1,229,339	1,182,078	1,094,812	14,457,474
Plus CPI-Tax Interest (If Applicable)	82,641	85,106	86,977	91,363	101,174	113,514	126,365	140,885	154,789	163,894	169,153	87,324	1,403,185
Total	98,221	105,446	186,469	(10,165)	(131,271)	(53,046)	(37,792)	(2,966)	91,935	142,646	211,148	379,787	980,413
Tax Rate (T/(1-T)	0.403351	0.403351	0.403351	0.403351	0.403351	0.403351	0.403351	0.403351	0.403351	0.403351	0.403351	0.403351	0.403351
Gross Up for Income Tax	39,618	42,532	75,212	(4,100)	(52,948)	(21,396)	(15,244)	(1,196)	37,082	57,536	85,167	153,187	395,451

* Schedule does not include regulatory adjustments, disallowed projects, or base rate removals. Final revenue requirement removes $6.7M in Mandated Relocates currently in base rates.

Current Mandated Relocations Revenue Requirement
Comparison to Last Approved Natural Gas Rate Case
Docket No. G002/GR-09-1153

	2010 Test Year	2022 Forecast	Expenditures in 2022 GUIC Rider
CWIP Expenditures (excl Labor Internal)	6,407,133	10,301,913	
RWIP Expenditures	292,867	656,801	
Total Expenditures (excl Internal Labor)	6,700,000	10,958,714	4,258,714
			*excl Internal Lbr
Average Balances:			
Plant Investment	3,210,983	22,820,446	
Depreciation Reserve	(107,782)	(620,332)	
CWIP	10,342	-	
Accumulated Deferred Taxes	74,106	700,018	
Average Rate Base	3,255,001	22,435,609	
Expenses:			
Book Depreciation	77,304	489,784	
Annual Deferred Tax	148,211	408,096	
ITC Flow Thru	-	-	
Property Taxes	-	230,175	
subtotal expense	225,516	1,128,055	
Tax Preference Items:			
Tax Depreciation & Removal Expense	613,280	1,925,031	
Tax Credits (enter as negative)	-	-	
Avoided Tax Interest	21,806	21,593	
AFUDC	35,519	-	
Returns:			
Debt Return	97,097	401,794	
Equity Return	172,287	848,233	
Tax Calculations:			
Equity Return	172,287	848,233	
Taxable Expense	225,516	897,880	
plus Tax Additions	21,806	21,593	
less Tax Deductions	(648,798)	(1,955,938)	
subtotal	(229,190)	(188,233)	
Tax gross-up factor = t / (1-t)	0.403351	0.403351	
Current Income Tax Requirement	(92,444)	(75,924)	
Tax Credit Revenue Requirement	-	-	Total Mandated Relocations Rev Req in 2022 Rider
Total Current Tax Revenue Requirement	(92,444)	(75,924)	
Total Capital Revenue Requirements	366,937	2,302,158	1,935,221

2010 Revenue Requirement removed as a Base Rate regulatory adjustment
2022 Revenue Requirement included in DIMP

Annual Summary

	Annual Retirements	Estimate of 2010 Rate Base for Replaced Assets	Depreciation Expense
2012	$ 47	$ 14	$ 1
2013	1,053	322	31
2014	537,681	164,566	16,007
2015	1,801,071	551,247	53,619
2016	1,269,324	388,497	37,788
2017	2,669,862	817,154	79,483
2018	370,315	106,852	10,968
2019	679,259	186,478	20,034
2020	1,968,282	533,705	57,778
2021	1,005,952	275,055	29,497
2022	1,005,952	275,055	29,497
Total	$ 11,308,798	$ 3,298,945	$ 334,701

3-Yr Average Retirements 2018-2020	% of Remaining NBV for replaced assets	Composite Depreciation Rate
$ 1,005,952	27.3%	2.9%

Calculation of Estimated Annual GUIC-Related Retirements
for 2012-2022

Asset Detail

Asset ID	Book Value	Estimated Reserve 1/1/2010	Net Book Value 1/1/2010	Estimated GUIC Retirement	% of Book Value Retired	Estimate of 2010 Rate Base for Replaced Asset	Approved Depreciation Rate	Depreciation Expense	Utility Account
4584498	$ 1,138,113	$ 727,159	$ 410,954	$ (588,411)	52%	$ 212,465	2.8889%	$ 16,999	20367000-Transmission Mains
4584499	118,508	71,834	46,674	(58,295)	49%	22,959	2.8889%	1,684	20367000-Transmission Mains
4584500	160,030	91,759	68,271	(79,213)	49%	33,793	2.8889%	2,288	20367000-Transmission Mains
4584501	667,967	339,232	328,736	(596,455)	89%	293,541	2.8889%	17,231	20367000-Transmission Mains
4584502	13,645	6,482	7,162	(5,781)	42%	3,034	2.8889%	167	20367000-Transmission Mains
4584544	25,153	32,699	(7,546)	(22,031)	88%	(6,609)	2.8889%	636	20367000-Transmission Mains
4584545	137,819	179,165	(41,346)	(7,115)	5%	(2,135)	2.8889%	206	20367000-Transmission Mains
4584659	379,108	436,124	(57,015)	(19,802)	5%	(2,978)	2.8889%	572	20376010-Distribution Mains-Steel
4584661	27,934	30,782	(2,848)	(2,597)	9%	(265)	2.8889%	75	20376010-Distribution Mains-Steel
4584698	104,515	120,233	(15,718)	(193)	0%	(29)	2.8889%	6	20376010-Distribution Mains-Steel
4584720	(2,751)	(3,576)	825	340	12%	102	2.8889%	(10)	20376010-Distribution Mains-Steel
4584724	669	870	(201)	(276)	41%	(83)	2.8889%	8	20376010-Distribution Mains-Steel
4584725	3,006	3,908	(902)	(681)	23%	(204)	2.8889%	20	20376010-Distribution Mains-Steel
4584727	2,993	3,891	(898)	(883)	29%	(265)	2.8889%	26	20376010-Distribution Mains-Steel
4584729	2,675	3,477	(802)	(857)	32%	(257)	2.8889%	25	20376010-Distribution Mains-Steel
4584731	842	1,095	(253)	(359)	43%	(108)	2.8889%	10	20376010-Distribution Mains-Steel
4584733	2,817	3,649	(833)	(712)	25%	(210)	2.8889%	21	20376010-Distribution Mains-Steel
4584735	2,170	2,760	(589)	(537)	25%	(146)	2.8889%	16	20376010-Distribution Mains-Steel
4584736	11,111	13,858	(2,747)	(2,996)	27%	(741)	2.8889%	87	20376010-Distribution Mains-Steel
4584737	13,504	16,516	(3,012)	(2,804)	21%	(625)	2.8889%	81	20376010-Distribution Mains-Steel
4584738	11,996	14,382	(2,385)	(2,318)	19%	(461)	2.8889%	67	20376010-Distribution Mains-Steel
4584739	3,938	4,626	(688)	(873)	22%	(152)	2.8889%	25	20376010-Distribution Mains-Steel
4584740	17,798	20,475	(2,677)	(3,522)	20%	(530)	2.8889%	102	20376010-Distribution Mains-Steel
4584742	10,211	11,500	(1,288)	(1,638)	16%	(207)	2.8889%	47	20376010-Distribution Mains-Steel
4584743	13,022	14,349	(1,328)	(2,666)	20%	(272)	2.8889%	77	20376010-Distribution Mains-Steel
4584744	12,955	13,962	(1,007)	(2,785)	21%	(216)	2.8889%	80	20376010-Distribution Mains-Steel
4584746	7,606	8,013	(407)	(1,693)	22%	(91)	2.8889%	49	20376010-Distribution Mains-Steel
4584749	6,101	6,280	(179)	(1,022)	17%	(30)	2.8889%	30	20376010-Distribution Mains-Steel
4584751	2,310	2,321	(12)	(333)	14%	(2)	2.8889%	10	20376010-Distribution Mains-Steel
4584819	43,767	56,897	(13,130)	(1,368)	3%	(411)	2.8889%	40	20376010-Distribution Mains-Steel
4584825	15,415	20,040	(4,625)	(794)	5%	(238)	2.8889%	23	20376010-Distribution Mains-Steel
4584827	50,957	66,244	(15,287)	(1,169)	2%	(351)	2.8889%	34	20376010-Distribution Mains-Steel
4584833	8,194	10,220	(2,026)	(973)	12%	(240)	2.8889%	28	20376010-Distribution Mains-Steel
4584835	12,413	15,182	(2,769)	(1,396)	11%	(311)	2.8889%	40	20376010-Distribution Mains-Steel
4584841	28,492	31,396	(2,905)	(1,292)	5%	(132)	2.8889%	37	20376010-Distribution Mains-Steel
4584854	89,162	42,108	47,054	(989)	1%	522	2.8889%	29	20376010-Distribution Mains-Steel
4584877	853	1,108	(256)	(284)	33%	(85)	2.8889%	8	20376010-Distribution Mains-Steel
4584879	713	926	(214)	(178)	25%	(53)	2.8889%	5	20376010-Distribution Mains-Steel

Calculation of Estimated Annual GUIC-Related Retirements
for 2012-2022

Asset Detail

Asset ID	Book Value	Estimated Reserve 1/1/2010	Net Book Value 1/1/2010	Estimated GUIC Retirement	% of Book Value Retired	Estimate of 2010 Rate Base for Replaced Asset	Approved Depreciation Rate	Depreciation Expense	Utility Account
4584880	217	276	(59)	(108)	50%	(29)	2.8889%	3	20376010-Distribution Mains-Steel
4584883	14,063	11,410	2,653	(7,031)	50%	1,327	2.8889%	203	20376010-Distribution Mains-Steel
4584885	20,492	9,678	10,814	(10,246)	50%	5,407	2.8889%	296	20376010-Distribution Mains-Steel
4584955	302,385	355,185	(52,800)	(11,765)	4%	(2,054)	2.8889%	340	20376010-Distribution Mains-Steel
4584956	38,057	43,780	(5,724)	(1,734)	5%	(261)	2.8889%	50	20376010-Distribution Mains-Steel
4584957	37,596	42,340	(4,744)	(1,722)	5%	(217)	2.8889%	50	20376010-Distribution Mains-Steel
4584960	52,660	58,029	(5,369)	(2,040)	4%	(208)	2.8889%	59	20376010-Distribution Mains-Steel
4584966	63,882	67,301	(3,419)	(2,250)	4%	(120)	2.8889%	65	20376010-Distribution Mains-Steel
4584969	52,181	53,710	(1,529)	(2,623)	5%	(77)	2.8889%	76	20376010-Distribution Mains-Steel
4584972	39,900	40,103	(203)	(1,643)	4%	(8)	2.8889%	47	20376010-Distribution Mains-Steel
4585002	3,389	4,405	(1,017)	(623)	18%	(187)	2.8889%	18	20376010-Distribution Mains-Steel
4585008	187,076	219,742	(32,666)	(16,316)	9%	(2,849)	2.8889%	471	20376010-Distribution Mains-Steel
4585051	1,325,901	305,062	1,020,839	(19,129)	1%	14,728	2.8889%	553	20376010-Distribution Mains-Steel
4585145	2,343	2,809	(466)	(1,171)	50%	(233)	2.8889%	34	20376010-Distribution Mains-Steel
4585148	7,083	5,746	1,336	(3,541)	50%	668	2.8889%	102	20376010-Distribution Mains-Steel
4585153	14,871	19,332	(4,461)	(1,155)	8%	(347)	2.8889%	33	20376010-Distribution Mains-Steel
4585154	15,078	19,537	(4,459)	(2,509)	17%	(742)	2.8889%	72	20376010-Distribution Mains-Steel
4585155	47,247	60,074	(12,827)	(8,544)	18%	(2,319)	2.8889%	247	20376010-Distribution Mains-Steel
4585156	35,695	44,522	(8,826)	(8,039)	23%	(1,988)	2.8889%	232	20376010-Distribution Mains-Steel
4585158	208,589	255,115	(46,526)	(42,612)	20%	(9,505)	2.8889%	1,231	20376010-Distribution Mains-Steel
4585159	132,735	159,127	(26,392)	(32,103)	24%	(6,383)	2.8889%	927	20376010-Distribution Mains-Steel
4585160	250,175	293,859	(43,684)	(56,088)	22%	(9,794)	2.8889%	1,620	20376010-Distribution Mains-Steel
4585161	286,264	329,317	(43,052)	(63,914)	22%	(9,612)	2.8889%	1,846	20376010-Distribution Mains-Steel
4585163	238,246	268,307	(30,061)	(54,934)	23%	(6,931)	2.8889%	1,587	20376010-Distribution Mains-Steel
4585166	257,627	283,893	(26,266)	(50,405)	20%	(5,139)	2.8889%	1,456	20376010-Distribution Mains-Steel
4585169	312,009	336,263	(24,255)	(63,759)	20%	(4,956)	2.8889%	1,842	20376010-Distribution Mains-Steel
4585172	314,643	331,483	(16,839)	(59,714)	19%	(3,196)	2.8889%	1,725	20376010-Distribution Mains-Steel
4585175	298,013	306,744	(8,732)	(55,486)	19%	(1,626)	2.8889%	1,603	20376010-Distribution Mains-Steel
4585178	96,238	96,727	(489)	(16,536)	17%	(84)	2.8889%	478	20376010-Distribution Mains-Steel
4585181	63,145	61,936	1,209	(9,306)	15%	178	2.8889%	269	20376010-Distribution Mains-Steel
4585184	53,722	51,393	2,329	(7,175)	13%	311	2.8889%	207	20376010-Distribution Mains-Steel
4585188	24,609	22,350	2,259	(2,098)	9%	193	2.8889%	61	20376010-Distribution Mains-Steel
4585190	27,017	23,882	3,134	(2,106)	8%	244	2.8889%	61	20376010-Distribution Mains-Steel
4585192	20,763	17,851	2,911	(2,736)	13%	384	2.8889%	79	20376010-Distribution Mains-Steel
4585195	163,961	136,998	26,963	(18,828)	11%	3,096	2.8889%	544	20376010-Distribution Mains-Steel
4585240	210,543	273,706	(63,163)	(21,832)	10%	(6,550)	2.8889%	631	20376010-Distribution Mains-Steel
4585242	348,346	452,850	(104,504)	(49,351)	14%	(14,805)	2.8889%	1,426	20376010-Distribution Mains-Steel
4585245	173,791	225,928	(52,137)	(27,679)	16%	(8,304)	2.8889%	800	20376010-Distribution Mains-Steel

Calculation of Estimated Annual GUIC-Related Retirements
for 2012-2022

Asset Detail

Asset ID	Book Value	Estimated Reserve 1/1/2010	Net Book Value 1/1/2010	Estimated GUIC Retirement	% of Book Value Retired	Estimate of 2010 Rate Base for Replaced Asset	Approved Depreciation Rate	Depreciation Expense	Utility Account
4585248	258,233	334,594	(76,361)	(39,216)	15%	(11,596)	2.8889%	1,133	20376010-Distribution Mains-Steel
4585251	280,415	356,545	(76,129)	(36,854)	13%	(10,005)	2.8889%	1,065	20376010-Distribution Mains-Steel
4585254	257,326	320,955	(63,629)	(36,599)	14%	(9,050)	2.8889%	1,057	20376010-Distribution Mains-Steel
4585256	422,598	516,859	(94,261)	(51,626)	12%	(11,515)	2.8889%	1,491	20376010-Distribution Mains-Steel
4585259	405,083	485,626	(80,543)	(44,712)	11%	(8,890)	2.8889%	1,292	20376010-Distribution Mains-Steel
4585261	377,895	443,880	(65,985)	(47,889)	13%	(8,362)	2.8889%	1,383	20376010-Distribution Mains-Steel
4585263	499,763	574,925	(75,161)	(51,275)	10%	(7,711)	2.8889%	1,481	20376010-Distribution Mains-Steel
4585265	403,328	454,218	(50,890)	(48,196)	12%	(6,081)	2.8889%	1,392	20376010-Distribution Mains-Steel
4585267	367,523	404,995	(37,471)	(34,419)	9%	(3,509)	2.8889%	994	20376010-Distribution Mains-Steel
4585269	460,817	496,640	(35,823)	(51,961)	11%	(4,039)	2.8889%	1,501	20376010-Distribution Mains-Steel
4585271	334,787	352,705	(17,917)	(35,637)	11%	(1,907)	2.8889%	1,030	20376010-Distribution Mains-Steel
4585273	320,022	329,398	(9,377)	(31,937)	10%	(936)	2.8889%	923	20376010-Distribution Mains-Steel
4585275	157,172	157,970	(799)	(13,047)	8%	(66)	2.8889%	377	20376010-Distribution Mains-Steel
4585277	269,925	264,759	5,166	(17,653)	7%	338	2.8889%	510	20376010-Distribution Mains-Steel
4585279	114,656	109,684	4,971	(10,123)	9%	439	2.8889%	292	20376010-Distribution Mains-Steel
4585281	80,781	75,322	5,459	(5,892)	7%	398	2.8889%	170	20376010-Distribution Mains-Steel
4585287	53,929	46,367	7,562	(3,516)	7%	493	2.8889%	102	20376010-Distribution Mains-Steel
4585289	190,640	159,289	31,351	(11,285)	6%	1,856	2.8889%	326	20376010-Distribution Mains-Steel
4585341	124,089	161,315	(37,227)	(7,994)	6%	(2,398)	2.8889%	231	20376010-Distribution Mains-Steel
4585343	280,109	364,141	(84,033)	(22,439)	8%	(6,732)	2.8889%	648	20376010-Distribution Mains-Steel
4585345	94,431	122,761	(28,329)	(4,574)	5%	(1,372)	2.8889%	132	20376010-Distribution Mains-Steel
4585347	283,534	367,376	(83,843)	(18,234)	6%	(5,392)	2.8889%	527	20376010-Distribution Mains-Steel
4585349	253,364	322,149	(68,785)	(17,847)	7%	(4,845)	2.8889%	516	20376010-Distribution Mains-Steel
4585351	216,259	269,733	(53,474)	(15,163)	7%	(3,749)	2.8889%	438	20376010-Distribution Mains-Steel
4585353	558,715	683,336	(124,621)	(34,225)	6%	(7,634)	2.8889%	989	20376010-Distribution Mains-Steel
4585355	153,671	184,225	(30,555)	(8,497)	6%	(1,689)	2.8889%	245	20376010-Distribution Mains-Steel
4585357	619,300	727,437	(108,137)	(40,370)	7%	(7,049)	2.8889%	1,166	20376010-Distribution Mains-Steel
4585359	292,741	336,768	(44,026)	(16,951)	6%	(2,549)	2.8889%	490	20376010-Distribution Mains-Steel
4585361	368,412	414,896	(46,484)	(20,578)	6%	(2,596)	2.8889%	594	20376010-Distribution Mains-Steel
4585363	184,374	203,172	(18,798)	(8,842)	5%	(901)	2.8889%	255	20376010-Distribution Mains-Steel
4585365	155,034	167,086	(12,052)	(5,551)	4%	(432)	2.8889%	160	20376010-Distribution Mains-Steel
4585368	91,213	96,094	(4,882)	(4,345)	5%	(233)	2.8889%	126	20376010-Distribution Mains-Steel
4585370	207,642	213,726	(6,084)	(8,623)	4%	(253)	2.8889%	249	20376010-Distribution Mains-Steel
4585372	138,051	138,753	(701)	(3,884)	3%	(20)	2.8889%	112	20376010-Distribution Mains-Steel
4585374	188,994	185,377	3,617	(4,717)	2%	90	2.8889%	136	20376010-Distribution Mains-Steel
4585376	126,593	121,105	5,489	(5,076)	4%	220	2.8889%	147	20376010-Distribution Mains-Steel
4585380	115,170	104,598	10,572	(3,583)	3%	329	2.8889%	104	20376010-Distribution Mains-Steel
4585386	144,878	121,052	23,825	(4,335)	3%	713	2.8889%	125	20376010-Distribution Mains-Steel

Calculation of Estimated Annual GUIC-Related Retirements
for 2012-2022

Asset Detail

Asset ID	Book Value	Estimated Reserve 1/1/2010	Net Book Value 1/1/2010	Estimated GUIC Retirement	% of Book Value Retired	Estimate of 2010 Rate Base for Replaced Asset	Approved Depreciation Rate	Depreciation Expense	Utility Account
4585390	114,713	90,292	24,421	(2,195)	2%	467	2.8889%	63	20376010-Distribution Mains-Steel
4585392	381,704	291,200	90,505	(5,813)	2%	1,378	2.8889%	168	20376010-Distribution Mains-Steel
4585394	487,708	360,258	127,451	(14,461)	3%	3,779	2.8889%	418	20376010-Distribution Mains-Steel
4585396	774,716	553,500	221,216	(14,302)	2%	4,084	2.8889%	413	20376010-Distribution Mains-Steel
4585402	588,454	377,669	210,785	(10,286)	2%	3,684	2.8889%	297	20376010-Distribution Mains-Steel
4585408	585,017	332,958	252,059	(10,946)	2%	4,716	2.8889%	316	20376010-Distribution Mains-Steel
4585410	653,892	356,321	297,571	(8,381)	1%	3,814	2.8889%	242	20376010-Distribution Mains-Steel
4585414	446,012	221,438	224,573	(4,444)	1%	2,238	2.8889%	128	20376010-Distribution Mains-Steel
4585416	1,303,765	615,725	688,040	(14,116)	1%	7,450	2.8889%	408	20376010-Distribution Mains-Steel
4585437	43,401	56,421	(13,020)	(26,034)	60%	(7,810)	2.8889%	752	20376010-Distribution Mains-Steel
4585439	635	826	(191)	(345)	54%	(104)	2.8889%	10	20376010-Distribution Mains-Steel
4585440	224	291	(67)	(168)	75%	(50)	2.8889%	5	20376010-Distribution Mains-Steel
4585441	60	77	(18)	(51)	86%	(15)	2.8889%	1	20376010-Distribution Mains-Steel
4585443	70	87	(17)	(46)	67%	(11)	2.8889%	1	20376010-Distribution Mains-Steel
4585444	60	73	(13)	(60)	100%	(13)	2.8889%	2	20376010-Distribution Mains-Steel
4585445	57	67	(10)	(48)	83%	(8)	2.8889%	1	20376010-Distribution Mains-Steel
4585446	141	162	(21)	(84)	60%	(13)	2.8889%	2	20376010-Distribution Mains-Steel
4585450	233,140	303,082	(69,942)	(7,717)	3%	(2,315)	2.8889%	223	20376010-Distribution Mains-Steel
4585451	299,262	389,040	(89,778)	(8,038)	3%	(2,411)	2.8889%	232	20376010-Distribution Mains-Steel
4585453	118,348	153,344	(34,996)	(5,988)	5%	(1,771)	2.8889%	173	20376010-Distribution Mains-Steel
4585454	101,373	128,895	(27,522)	(6,169)	6%	(1,675)	2.8889%	178	20376010-Distribution Mains-Steel
4585456	106,815	130,640	(23,825)	(3,828)	4%	(854)	2.8889%	111	20376010-Distribution Mains-Steel
4585458	188,605	221,538	(32,933)	(7,444)	4%	(1,300)	2.8889%	215	20376010-Distribution Mains-Steel
4585783	69,497	83,315	(13,818)	(9,306)	13%	(1,850)	2.8889%	269	20376010-Distribution Mains-Steel
4585784	118,211	138,852	(20,641)	(15,621)	13%	(2,728)	2.8889%	451	20376010-Distribution Mains-Steel
4585785	45,214	52,014	(6,800)	(6,042)	13%	(909)	2.8889%	175	20376010-Distribution Mains-Steel
4585787	11,051	12,445	(1,394)	(1,436)	13%	(181)	2.8889%	41	20376010-Distribution Mains-Steel
4585788	25,728	28,351	(2,623)	(3,098)	12%	(316)	2.8889%	90	20376010-Distribution Mains-Steel
4585791	251,980	271,569	(19,588)	(26,888)	11%	(2,090)	2.8889%	777	20376010-Distribution Mains-Steel
4585794	46,639	49,135	(2,496)	(5,002)	11%	(268)	2.8889%	145	20376010-Distribution Mains-Steel
4585797	35,000	36,025	(1,025)	(3,971)	11%	(116)	2.8889%	115	20376010-Distribution Mains-Steel
4585800	16,033	16,115	(81)	(1,258)	8%	(6)	2.8889%	36	20376010-Distribution Mains-Steel
4585830	102,935	123,401	(20,467)	(12,664)	12%	(2,518)	2.8889%	366	20376010-Distribution Mains-Steel
4585834	191,655	225,120	(33,465)	(22,298)	12%	(3,894)	2.8889%	644	20376010-Distribution Mains-Steel
4585836	165,548	190,446	(24,897)	(19,651)	12%	(2,955)	2.8889%	568	20376010-Distribution Mains-Steel
4585838	36,768	41,407	(4,639)	(4,275)	12%	(539)	2.8889%	124	20376010-Distribution Mains-Steel
4585840	46,692	51,453	(4,761)	(4,837)	10%	(493)	2.8889%	140	20376010-Distribution Mains-Steel
4585842	130,183	140,303	(10,120)	(13,529)	10%	(1,052)	2.8889%	391	20376010-Distribution Mains-Steel

Calculation of Estimated Annual GUIC-Related Retirements
for 2012-2022

Asset Detail

Asset ID	Book Value	Estimated Reserve 1/1/2010	Net Book Value 1/1/2010	Estimated GUIC Retirement	% of Book Value Retired	Estimate of 2010 Rate Base for Replaced Asset	Approved Depreciation Rate	Depreciation Expense	Utility Account
4585844	17,173	18,092	(919)	(1,532)	9%	(82)	2.8889%	44	20376010-Distribution Mains-Steel
4585846	43,287	44,556	(1,268)	(3,658)	8%	(107)	2.8889%	106	20376010-Distribution Mains-Steel
4585850	10,377	10,179	199	(1,210)	12%	23	2.8889%	35	20376010-Distribution Mains-Steel
4585853	13,595	12,677	919	(1,271)	9%	86	2.8889%	37	20376010-Distribution Mains-Steel
4585878	125,503	150,456	(24,954)	(12,987)	10%	(2,582)	2.8889%	375	20376010-Distribution Mains-Steel
4586210	3,973	4,216	(244)	(531)	13%	(33)	2.5556%	14	20376020-Distribution Mains-Plastic
4586213	25,867	26,130	(263)	(5,779)	22%	(59)	2.5556%	148	20376020-Distribution Mains-Plastic
4586216	19,565	19,264	301	(4,174)	21%	64	2.5556%	107	20376020-Distribution Mains-Plastic
4586218	66,864	64,124	2,740	(13,475)	20%	552	2.5556%	344	20376020-Distribution Mains-Plastic
4586221	10,625	9,918	707	(2,360)	22%	157	2.5556%	60	20376020-Distribution Mains-Plastic
4586224	5,618	5,101	518	(1,466)	26%	135	2.5556%	37	20376020-Distribution Mains-Plastic
4586226	14,243	12,566	1,676	(2,496)	18%	294	2.5556%	64	20376020-Distribution Mains-Plastic
4586229	9,101	7,797	1,304	(1,191)	13%	171	2.5556%	30	20376020-Distribution Mains-Plastic
4586231	42,930	35,681	7,249	(7,684)	18%	1,297	2.5556%	196	20376020-Distribution Mains-Plastic
4586233	15,499	12,485	3,013	(1,827)	12%	355	2.5556%	47	20376020-Distribution Mains-Plastic
4586234	26,627	20,769	5,858	(2,953)	11%	650	2.5556%	75	20376020-Distribution Mains-Plastic
4586235	147,883	111,568	36,316	(15,384)	10%	3,778	2.5556%	393	20376020-Distribution Mains-Plastic
4586236	95,363	69,506	25,857	(11,152)	12%	3,024	2.5556%	285	20376020-Distribution Mains-Plastic
4586237	16,476	11,587	4,889	(1,424)	9%	423	2.5556%	36	20376020-Distribution Mains-Plastic
4586238	31,453	21,316	10,137	(3,652)	12%	1,177	2.5556%	93	20376020-Distribution Mains-Plastic
4586239	32,069	20,914	11,156	(1,892)	6%	658	2.5556%	48	20376020-Distribution Mains-Plastic
4586240	38,284	23,987	14,297	(4,554)	12%	1,701	2.5556%	116	20376020-Distribution Mains-Plastic
4586241	19,111	11,486	7,626	(2,077)	11%	829	2.5556%	53	20376020-Distribution Mains-Plastic
4586242	14,426	8,301	6,125	(788)	5%	334	2.5556%	20	20376020-Distribution Mains-Plastic
4586243	45,613	25,080	20,533	(2,837)	6%	1,277	2.5556%	72	20376020-Distribution Mains-Plastic
4586244	94,354	49,467	44,888	(4,837)	5%	2,301	2.5556%	124	20376020-Distribution Mains-Plastic
4586245	36,279	18,092	18,187	(2,010)	6%	1,008	2.5556%	51	20376020-Distribution Mains-Plastic
4586246	23,686	11,206	12,480	(1,546)	7%	815	2.5556%	40	20376020-Distribution Mains-Plastic
4586247	111,619	49,954	61,664	(5,264)	5%	2,908	2.5556%	135	20376020-Distribution Mains-Plastic
4586248	28,678	12,101	16,577	(1,874)	7%	1,083	2.5556%	48	20376020-Distribution Mains-Plastic
4586249	66,602	26,401	40,201	(3,969)	6%	2,396	2.5556%	101	20376020-Distribution Mains-Plastic
4586250	55,514	20,586	34,928	(1,860)	3%	1,170	2.5556%	48	20376020-Distribution Mains-Plastic
4586251	149,004	51,443	97,560	(5,272)	4%	3,452	2.5556%	135	20376020-Distribution Mains-Plastic
4586252	102,416	32,740	69,676	(4,917)	5%	3,345	2.5556%	126	20376020-Distribution Mains-Plastic
4586253	102,655	30,191	72,464	(2,729)	3%	1,927	2.5556%	70	20376020-Distribution Mains-Plastic
4586254	91,510	24,573	66,937	(2,434)	3%	1,780	2.5556%	62	20376020-Distribution Mains-Plastic
4586284	16,350	18,189	(1,839)	(2,490)	15%	(280)	2.5556%	64	20376020-Distribution Mains-Plastic
4586286	12,527	13,295	(768)	(1,565)	12%	(96)	2.5556%	40	20376020-Distribution Mains-Plastic

Calculation of Estimated Annual GUIC-Related Retirements
for 2012-2022

Asset Detail

Asset ID	Book Value	Estimated Reserve 1/1/2010	Net Book Value 1/1/2010	Estimated GUIC Retirement	% of Book Value Retired	Estimate of 2010 Rate Base for Replaced Asset	Approved Depreciation Rate	Depreciation Expense	Utility Account
4586288	18,673	19,341	(667)	(1,864)	10%	(67)	2.5556%	48	20376020-Distribution Mains-Plastic
4586290	14,219	14,364	(145)	(1,141)	8%	(12)	2.5556%	29	20376020-Distribution Mains-Plastic
4586293	22,678	22,329	349	(2,355)	10%	36	2.5556%	60	20376020-Distribution Mains-Plastic
4586296	21,018	20,157	861	(2,145)	10%	88	2.5556%	55	20376020-Distribution Mains-Plastic
4586298	5,396	5,037	359	(632)	12%	42	2.5556%	16	20376020-Distribution Mains-Plastic
4586307	22,847	18,990	3,858	(1,045)	5%	177	2.5556%	27	20376020-Distribution Mains-Plastic
4586309	66,729	53,755	12,974	(4,291)	6%	834	2.5556%	110	20376020-Distribution Mains-Plastic
4586311	60,335	47,061	13,273	(2,315)	4%	509	2.5556%	59	20376020-Distribution Mains-Plastic
4586312	111,092	83,811	27,281	(5,573)	5%	1,369	2.5556%	142	20376020-Distribution Mains-Plastic
4586314	88,809	64,729	24,080	(1,785)	2%	484	2.5556%	46	20376020-Distribution Mains-Plastic
4586315	38,154	26,833	11,321	(2,309)	6%	685	2.5556%	59	20376020-Distribution Mains-Plastic
4586316	10,949	7,421	3,529	(608)	6%	196	2.5556%	16	20376020-Distribution Mains-Plastic
4586317	26,231	15,764	10,466	(756)	3%	302	2.5556%	19	20376020-Distribution Mains-Plastic
4586318	42,989	24,737	18,253	(1,898)	4%	806	2.5556%	48	20376020-Distribution Mains-Plastic
4586319	72,438	39,829	32,609	(2,442)	3%	1,099	2.5556%	62	20376020-Distribution Mains-Plastic
4586320	110,407	57,883	52,525	(2,917)	3%	1,388	2.5556%	75	20376020-Distribution Mains-Plastic
4586321	258,758	129,040	129,718	(5,655)	2%	2,835	2.5556%	145	20376020-Distribution Mains-Plastic
4586322	99,509	47,080	52,430	(1,172)	1%	617	2.5556%	30	20376020-Distribution Mains-Plastic
4586323	177,505	79,441	98,064	(2,615)	1%	1,444	2.5556%	67	20376020-Distribution Mains-Plastic
4586325	101,998	40,432	61,566	(2,294)	2%	1,384	2.5556%	59	20376020-Distribution Mains-Plastic
4586326	155,250	57,570	97,680	(1,800)	1%	1,133	2.5556%	46	20376020-Distribution Mains-Plastic
4586327	165,181	57,028	108,153	(2,971)	2%	1,945	2.5556%	76	20376020-Distribution Mains-Plastic
4586328	379,000	121,157	257,844	(4,833)	1%	3,288	2.5556%	124	20376020-Distribution Mains-Plastic
4586329	327,721	96,383	231,338	(2,341)	1%	1,652	2.5556%	60	20376020-Distribution Mains-Plastic
4586330	279,664	75,097	204,567	(3,202)	1%	2,342	2.5556%	82	20376020-Distribution Mains-Plastic
4586332	322,465	78,343	244,121	(2,613)	1%	1,978	2.5556%	67	20376020-Distribution Mains-Plastic
4586334	11,328	11,443	(115)	(347)	3%	(4)	2.5556%	9	20376020-Distribution Mains-Plastic
4586336	17,630	17,358	272	(608)	3%	9	2.5556%	16	20376020-Distribution Mains-Plastic
4586348	153,133	115,529	37,605	(2,932)	2%	720	2.5556%	75	20376020-Distribution Mains-Plastic
4586368	529,808	169,366	360,442	(2,165)	0%	1,473	2.5556%	55	20376020-Distribution Mains-Plastic
4586457	87,414	95,009	(7,595)	(3,172)	4%	(276)	2.5556%	81	20376020-Distribution Mains-Plastic
4586459	27,449	29,132	(1,683)	(1,021)	4%	(63)	2.5556%	26	20376020-Distribution Mains-Plastic
4586461	64,639	66,949	(2,310)	(2,037)	3%	(73)	2.5556%	52	20376020-Distribution Mains-Plastic
4586463	28,386	28,674	(289)	(1,015)	4%	(10)	2.5556%	26	20376020-Distribution Mains-Plastic
4586465	20,232	19,921	312	(639)	3%	10	2.5556%	16	20376020-Distribution Mains-Plastic
4586469	32,709	30,532	2,177	(772)	2%	51	2.5556%	20	20376020-Distribution Mains-Plastic
4586474	21,640	19,093	2,547	(498)	2%	59	2.5556%	13	20376020-Distribution Mains-Plastic
4586476	68,667	58,829	9,838	(1,819)	3%	261	2.5556%	46	20376020-Distribution Mains-Plastic

Calculation of Estimated Annual GUIC-Related Retirements
for 2012-2022

Asset Detail

Asset ID	Book Value	Estimated Reserve 1/1/2010	Net Book Value 1/1/2010	Estimated GUIC Retirement	% of Book Value Retired	Estimate of 2010 Rate Base for Replaced Asset	Approved Depreciation Rate	Depreciation Expense	Utility Account
4586478	46,783	38,883	7,899	(925)	2%	156	2.5556%	24	20376020-Distribution Mains-Plastic
4586480	71,182	57,343	13,839	(1,059)	1%	206	2.5556%	27	20376020-Distribution Mains-Plastic
4586481	97,993	76,435	21,558	(2,804)	3%	617	2.5556%	72	20376020-Distribution Mains-Plastic
4586482	201,128	151,737	49,391	(3,988)	2%	979	2.5556%	102	20376020-Distribution Mains-Plastic
4586484	310,304	226,167	84,137	(5,275)	2%	1,430	2.5556%	135	20376020-Distribution Mains-Plastic
4586485	334,393	235,173	99,220	(4,876)	1%	1,447	2.5556%	125	20376020-Distribution Mains-Plastic
4586486	145,519	98,620	46,900	(476)	0%	153	2.5556%	12	20376020-Distribution Mains-Plastic
4586487	252,210	164,475	87,735	(3,398)	1%	1,182	2.5556%	87	20376020-Distribution Mains-Plastic
4586488	288,570	180,806	107,763	(2,812)	1%	1,050	2.5556%	72	20376020-Distribution Mains-Plastic
4586489	276,832	166,372	110,459	(3,139)	1%	1,252	2.5556%	80	20376020-Distribution Mains-Plastic
4586490	467,080	268,764	198,316	(5,135)	1%	2,180	2.5556%	131	20376020-Distribution Mains-Plastic
4586491	402,492	221,306	181,186	(4,094)	1%	1,843	2.5556%	105	20376020-Distribution Mains-Plastic
4586492	860,193	450,969	409,224	(7,064)	1%	3,361	2.5556%	181	20376020-Distribution Mains-Plastic
4586493	847,137	422,460	424,677	(5,887)	1%	2,951	2.5556%	150	20376020-Distribution Mains-Plastic
4586494	412,742	195,275	217,466	(3,415)	1%	1,799	2.5556%	87	20376020-Distribution Mains-Plastic
4586495	452,368	202,454	249,914	(2,825)	1%	1,561	2.5556%	72	20376020-Distribution Mains-Plastic
4586496	210,957	89,017	121,939	(1,145)	1%	662	2.5556%	29	20376020-Distribution Mains-Plastic
4586497	1,042,404	413,204	629,200	(6,008)	1%	3,626	2.5556%	154	20376020-Distribution Mains-Plastic
4586498	737,520	273,489	464,032	(3,410)	0%	2,146	2.5556%	87	20376020-Distribution Mains-Plastic
4586499	1,051,280	362,952	688,328	(4,372)	0%	2,863	2.5556%	112	20376020-Distribution Mains-Plastic
4586500	1,583,487	506,200	1,077,288	(6,191)	0%	4,212	2.5556%	158	20376020-Distribution Mains-Plastic
4586501	1,468,532	431,895	1,036,637	(5,454)	0%	3,850	2.5556%	139	20376020-Distribution Mains-Plastic
4586502	1,729,586	464,439	1,265,147	(6,251)	0%	4,573	2.5556%	160	20376020-Distribution Mains-Plastic
4586503	2,503,772	608,297	1,895,475	(7,462)	0%	5,649	2.5556%	191	20376020-Distribution Mains-Plastic
4586506	1,539	1,554	(16)	(219)	14%	(2)	2.5556%	6	20376020-Distribution Mains-Plastic
4586507	20,640	19,266	1,374	(1,479)	7%	98	2.5556%	38	20376020-Distribution Mains-Plastic
4586511	25,743	21,397	4,347	(1,996)	8%	337	2.5556%	51	20376020-Distribution Mains-Plastic
4586517	287,604	209,622	77,982	(7,253)	3%	1,967	2.5556%	185	20376020-Distribution Mains-Plastic
4586519	113,301	79,683	33,618	(2,803)	2%	832	2.5556%	72	20376020-Distribution Mains-Plastic
4586525	265,618	166,426	99,192	(4,993)	2%	1,865	2.5556%	128	20376020-Distribution Mains-Plastic
4586531	152,073	83,616	68,457	(3,779)	2%	1,701	2.5556%	97	20376020-Distribution Mains-Plastic
4586533	811,014	425,186	385,827	(8,906)	1%	4,237	2.5556%	228	20376020-Distribution Mains-Plastic
4586535	234,049	116,718	117,331	(3,648)	2%	1,829	2.5556%	93	20376020-Distribution Mains-Plastic
4586537	289,957	137,184	152,774	(3,723)	1%	1,962	2.5556%	95	20376020-Distribution Mains-Plastic
4586541	224,217	94,613	129,605	(1,845)	1%	1,066	2.5556%	47	20376020-Distribution Mains-Plastic
4586543	814,548	322,883	491,665	(6,726)	1%	4,060	2.5556%	172	20376020-Distribution Mains-Plastic
4586545	673,729	249,833	423,896	(3,948)	1%	2,484	2.5556%	101	20376020-Distribution Mains-Plastic
4586546	610,057	210,621	399,436	(3,096)	1%	2,027	2.5556%	79	20376020-Distribution Mains-Plastic

Calculation of Estimated Annual GUIC-Related Retirements
for 2012-2022

Asset Detail

Asset ID	Book Value	Estimated Reserve 1/1/2010	Net Book Value 1/1/2010	Estimated GUIC Retirement	% of Book Value Retired	Estimate of 2010 Rate Base for Replaced Asset	Approved Depreciation Rate	Depreciation Expense	Utility Account
4586548	739,920	236,533	503,387	(4,695)	1%	3,194	2.5556%	120	20376020-Distribution Mains-Plastic
4586549	1,090,416	320,691	769,725	(7,673)	1%	5,417	2.5556%	196	20376020-Distribution Mains-Plastic
4586550	1,656,456	444,802	1,211,654	(10,447)	1%	7,641	2.5556%	267	20376020-Distribution Mains-Plastic
4586551	757,110	183,942	573,169	(4,856)	1%	3,676	2.5556%	124	20376020-Distribution Mains-Plastic
4586553	19,790	9,869	9,921	(503)	3%	252	2.5556%	13	20376020-Distribution Mains-Plastic
4586571	78,556	85,382	(6,826)	(4,456)	6%	(387)	2.5556%	114	20376020-Distribution Mains-Plastic
4586573	80,197	85,114	(4,917)	(7,470)	9%	(458)	2.5556%	191	20376020-Distribution Mains-Plastic
4586575	255,511	264,644	(9,133)	(20,572)	8%	(735)	2.5556%	526	20376020-Distribution Mains-Plastic
4586578	292,377	295,350	(2,973)	(18,591)	6%	(189)	2.5556%	475	20376020-Distribution Mains-Plastic
4586581	222,221	218,798	3,423	(17,020)	8%	262	2.5556%	435	20376020-Distribution Mains-Plastic
4586583	268,204	257,213	10,990	(20,441)	8%	838	2.5556%	522	20376020-Distribution Mains-Plastic
4586585	386,162	360,462	25,700	(25,160)	7%	1,674	2.5556%	643	20376020-Distribution Mains-Plastic
4586587	283,454	257,340	26,114	(19,284)	7%	1,777	2.5556%	493	20376020-Distribution Mains-Plastic
4586589	508,730	448,852	59,878	(32,938)	6%	3,877	2.5556%	842	20376020-Distribution Mains-Plastic
4586591	497,404	426,139	71,265	(28,852)	6%	4,134	2.5556%	737	20376020-Distribution Mains-Plastic
4586593	342,207	284,426	57,782	(18,651)	5%	3,149	2.5556%	477	20376020-Distribution Mains-Plastic
4586595	453,464	365,301	88,163	(20,397)	4%	3,966	2.5556%	521	20376020-Distribution Mains-Plastic
4586597	999,885	779,915	219,970	(40,818)	4%	8,980	2.5556%	1,043	20376020-Distribution Mains-Plastic
4586599	2,950,300	2,225,796	724,504	(105,996)	4%	26,029	2.5556%	2,709	20376020-Distribution Mains-Plastic
4586601	3,195,908	2,329,358	866,550	(118,745)	4%	32,197	2.5556%	3,035	20376020-Distribution Mains-Plastic
4586602	1,687,144	1,186,539	500,605	(59,107)	4%	17,538	2.5556%	1,511	20376020-Distribution Mains-Plastic
4586604	1,125,930	763,053	362,878	(40,484)	4%	13,048	2.5556%	1,035	20376020-Distribution Mains-Plastic
4586606	1,157,668	754,955	402,712	(26,715)	2%	9,293	2.5556%	683	20376020-Distribution Mains-Plastic
4586607	1,539,411	964,535	574,876	(43,673)	3%	16,309	2.5556%	1,116	20376020-Distribution Mains-Plastic
4586609	1,049,859	630,951	418,908	(27,311)	3%	10,897	2.5556%	698	20376020-Distribution Mains-Plastic
4586610	1,485,316	854,670	630,646	(39,437)	3%	16,744	2.5556%	1,008	20376020-Distribution Mains-Plastic
4586612	847,318	465,888	381,429	(17,480)	2%	7,869	2.5556%	447	20376020-Distribution Mains-Plastic
4586613	1,476,062	773,848	702,214	(33,683)	2%	16,024	2.5556%	861	20376020-Distribution Mains-Plastic
4586614	3,822,588	1,906,291	1,916,297	(60,353)	2%	30,256	2.5556%	1,542	20376020-Distribution Mains-Plastic
4586615	1,699,833	804,221	895,612	(31,977)	2%	16,848	2.5556%	817	20376020-Distribution Mains-Plastic
4586616	2,031,800	909,319	1,122,481	(30,000)	1%	16,574	2.5556%	767	20376020-Distribution Mains-Plastic
4586617	1,916,219	808,586	1,107,633	(27,361)	1%	15,815	2.5556%	699	20376020-Distribution Mains-Plastic
4586618	3,052,458	1,209,981	1,842,478	(43,292)	1%	26,132	2.5556%	1,106	20376020-Distribution Mains-Plastic
4586619	3,062,603	1,135,680	1,926,923	(36,861)	1%	23,192	2.5556%	942	20376020-Distribution Mains-Plastic
4586621	5,234,772	1,807,294	3,427,479	(57,853)	1%	37,880	2.5556%	1,478	20376020-Distribution Mains-Plastic
4586624	6,207,668	1,984,429	4,223,239	(70,821)	1%	48,181	2.5556%	1,810	20376020-Distribution Mains-Plastic
4586625	6,865,747	2,019,216	4,846,531	(67,927)	1%	47,949	2.5556%	1,736	20376020-Distribution Mains-Plastic
4586628	5,201,250	1,396,671	3,804,579	(52,349)	1%	38,292	2.5556%	1,338	20376020-Distribution Mains-Plastic

Calculation of Estimated Annual GUIC-Related Retirements
for 2012-2022

Asset Detail

Asset ID	Book Value	Estimated Reserve 1/1/2010	Net Book Value 1/1/2010	Estimated GUIC Retirement	% of Book Value Retired	Estimate of 2010 Rate Base for Replaced Asset	Approved Depreciation Rate	Depreciation Expense	Utility Account
4586629	6,158,564	1,496,236	4,662,327	(54,457)	1%	41,227	2.5556%	1,392	20376020-Distribution Mains-Plastic
4586631	79,929	86,874	(6,945)	(6,056)	8%	(526)	2.5556%	155	20376020-Distribution Mains-Plastic
4586633	45,798	48,606	(2,808)	(2,751)	6%	(169)	2.5556%	70	20376020-Distribution Mains-Plastic
4586635	28,786	29,815	(1,029)	(2,609)	9%	(93)	2.5556%	67	20376020-Distribution Mains-Plastic
4586637	87,872	88,766	(894)	(3,401)	4%	(35)	2.5556%	87	20376020-Distribution Mains-Plastic
4586639	163,711	161,189	2,522	(6,863)	4%	106	2.5556%	175	20376020-Distribution Mains-Plastic
4586641	149,775	143,638	6,138	(11,749)	8%	481	2.5556%	300	20376020-Distribution Mains-Plastic
4586643	136,533	127,446	9,087	(6,265)	5%	417	2.5556%	160	20376020-Distribution Mains-Plastic
4586645	184,396	167,408	16,988	(11,516)	6%	1,061	2.5556%	294	20376020-Distribution Mains-Plastic
4586647	179,122	158,040	21,082	(8,117)	5%	955	2.5556%	207	20376020-Distribution Mains-Plastic
4586649	91,400	78,304	13,095	(2,331)	3%	334	2.5556%	60	20376020-Distribution Mains-Plastic
4586651	115,840	96,281	19,559	(1,515)	1%	256	2.5556%	39	20376020-Distribution Mains-Plastic
4586653	371,660	299,401	72,259	(17,305)	5%	3,365	2.5556%	442	20376020-Distribution Mains-Plastic
4586655	587,124	457,959	129,165	(24,431)	4%	5,375	2.5556%	624	20376020-Distribution Mains-Plastic
4586657	1,353,997	1,021,496	332,501	(45,401)	3%	11,149	2.5556%	1,160	20376020-Distribution Mains-Plastic
4586659	1,494,805	1,089,498	405,307	(43,089)	3%	11,683	2.5556%	1,101	20376020-Distribution Mains-Plastic
4586661	1,276,232	897,552	378,681	(28,621)	2%	8,492	2.5556%	731	20376020-Distribution Mains-Plastic
4586663	718,057	486,633	231,424	(17,680)	2%	5,698	2.5556%	452	20376020-Distribution Mains-Plastic
4586665	731,485	477,027	254,458	(12,115)	2%	4,215	2.5556%	310	20376020-Distribution Mains-Plastic
4586667	1,293,263	810,308	482,955	(22,694)	2%	8,475	2.5556%	580	20376020-Distribution Mains-Plastic
4586669	1,195,203	718,302	476,902	(31,033)	3%	12,382	2.5556%	793	20376020-Distribution Mains-Plastic
4586671	1,101,424	633,774	467,651	(18,312)	2%	7,775	2.5556%	468	20376020-Distribution Mains-Plastic
4586673	2,552,656	1,403,550	1,149,106	(29,779)	1%	13,405	2.5556%	761	20376020-Distribution Mains-Plastic
4586675	1,504,771	788,899	715,872	(25,112)	2%	11,947	2.5556%	642	20376020-Distribution Mains-Plastic
4586677	3,684,635	1,837,495	1,847,140	(50,158)	1%	25,144	2.5556%	1,282	20376020-Distribution Mains-Plastic
4586679	3,994,046	1,889,652	2,104,393	(54,396)	1%	28,660	2.5556%	1,390	20376020-Distribution Mains-Plastic
4586681	2,751,839	1,231,568	1,520,272	(23,884)	1%	13,195	2.5556%	610	20376020-Distribution Mains-Plastic
4586683	3,394,332	1,432,305	1,962,027	(36,967)	1%	21,368	2.5556%	945	20376020-Distribution Mains-Plastic
4586685	3,758,173	1,489,723	2,268,450	(52,946)	1%	31,958	2.5556%	1,353	20376020-Distribution Mains-Plastic
4586687	4,144,531	1,536,882	2,607,649	(47,505)	1%	29,889	2.5556%	1,214	20376020-Distribution Mains-Plastic
4586689	1,914,494	660,975	1,253,519	(17,696)	1%	11,586	2.5556%	452	20376020-Distribution Mains-Plastic
4586691	2,590,184	828,014	1,762,170	(29,455)	1%	20,039	2.5556%	753	20376020-Distribution Mains-Plastic
4586693	2,342,366	688,890	1,653,476	(12,682)	1%	8,952	2.5556%	324	20376020-Distribution Mains-Plastic
4586695	1,680,122	451,157	1,228,966	(5,688)	0%	4,160	2.5556%	145	20376020-Distribution Mains-Plastic
4586697	1,722,775	418,552	1,304,223	(5,593)	0%	4,234	2.5556%	143	20376020-Distribution Mains-Plastic
4586700	6,971	5,438	1,534	(46)	1%	10	2.5556%	1	20376020-Distribution Mains-Plastic
4586704	386,117	202,428	183,689	(716)	0%	341	2.5556%	18	20376020-Distribution Mains-Plastic
4586705	1,132,668	564,852	567,817	(4,987)	0%	2,500	2.5556%	127	20376020-Distribution Mains-Plastic

Calculation of Estimated Annual GUIC-Related Retirements
for 2012-2022

Asset Detail

Asset ID	Book Value	Estimated Reserve 1/1/2010	Net Book Value 1/1/2010	Estimated GUIC Retirement	% of Book Value Retired	Estimate of 2010 Rate Base for Replaced Asset	Approved Depreciation Rate	Depreciation Expense	Utility Account
4586707	1,553,901	695,438	858,463	(12,598)	1%	6,960	2.5556%	322	20376020-Distribution Mains-Plastic
4586709	1,269,470	503,212	766,258	(10,087)	1%	6,089	2.5556%	258	20376020-Distribution Mains-Plastic
4586710	2,292,746	850,200	1,442,546	(13,714)	1%	8,629	2.5556%	350	20376020-Distribution Mains-Plastic
4586714	714,646	228,454	486,192	(3,870)	1%	2,633	2.5556%	99	20376020-Distribution Mains-Plastic
4586716	1,085,880	319,357	766,523	(4,076)	0%	2,877	2.5556%	104	20376020-Distribution Mains-Plastic
4586720	1,285,358	312,281	973,078	(5,361)	0%	4,059	2.5556%	137	20376020-Distribution Mains-Plastic
4586731	9,559	10,145	(586)	(1,261)	13%	(77)	2.5556%	32	20376020-Distribution Mains-Plastic
4586733	8,368	8,667	(299)	(921)	11%	(33)	2.5556%	24	20376020-Distribution Mains-Plastic
4586735	31,858	32,182	(324)	(3,423)	11%	(35)	2.5556%	87	20376020-Distribution Mains-Plastic
4586737	21,999	21,660	339	(2,306)	10%	36	2.5556%	59	20376020-Distribution Mains-Plastic
4586740	29,369	28,165	1,204	(2,740)	9%	112	2.5556%	70	20376020-Distribution Mains-Plastic
4586743	33,563	31,329	2,234	(3,046)	9%	203	2.5556%	78	20376020-Distribution Mains-Plastic
4586745	38,280	34,753	3,527	(3,188)	8%	294	2.5556%	81	20376020-Distribution Mains-Plastic
4586748	23,209	20,477	2,732	(1,792)	8%	211	2.5556%	46	20376020-Distribution Mains-Plastic
4586750	77,390	66,302	11,088	(5,617)	7%	805	2.5556%	144	20376020-Distribution Mains-Plastic
4586752	77,899	64,746	13,153	(5,565)	7%	940	2.5556%	142	20376020-Distribution Mains-Plastic
4586754	54,773	44,124	10,649	(3,342)	6%	650	2.5556%	85	20376020-Distribution Mains-Plastic
4586756	89,847	70,081	19,766	(5,197)	6%	1,143	2.5556%	133	20376020-Distribution Mains-Plastic
4586757	154,777	116,768	38,008	(8,318)	5%	2,043	2.5556%	213	20376020-Distribution Mains-Plastic
4586758	233,263	170,015	63,248	(11,212)	5%	3,040	2.5556%	287	20376020-Distribution Mains-Plastic
4586759	171,427	120,562	50,865	(8,258)	5%	2,450	2.5556%	211	20376020-Distribution Mains-Plastic
4586760	78,046	52,893	25,154	(3,290)	4%	1,060	2.5556%	84	20376020-Distribution Mains-Plastic
4586762	146,925	92,058	54,868	(5,737)	4%	2,142	2.5556%	147	20376020-Distribution Mains-Plastic
4586763	101,853	61,213	40,641	(3,257)	3%	1,300	2.5556%	83	20376020-Distribution Mains-Plastic
4586764	181,251	104,294	76,957	(5,413)	3%	2,298	2.5556%	138	20376020-Distribution Mains-Plastic
4586766	123,068	64,520	58,548	(3,432)	3%	1,633	2.5556%	88	20376020-Distribution Mains-Plastic
4586767	84,785	42,282	42,503	(2,055)	2%	1,030	2.5556%	53	20376020-Distribution Mains-Plastic
4586769	68,733	30,761	37,972	(1,364)	2%	754	2.5556%	35	20376020-Distribution Mains-Plastic
4586770	77,477	32,693	44,784	(1,099)	1%	635	2.5556%	28	20376020-Distribution Mains-Plastic
4586780	340,507	82,727	257,780	(3,169)	1%	2,399	2.5556%	81	20376020-Distribution Mains-Plastic
4586815	206,303	118,710	87,594	(2,460)	1%	1,045	2.5556%	63	20376020-Distribution Mains-Plastic
4586834	407,920	182,562	225,358	(1,779)	0%	983	2.5556%	45	20376020-Distribution Mains-Plastic
4587204	174,123	226,360	(52,237)	(5,819)	3%	(1,746)	3.2500%	189	20380010-Distribution Service-Steel
4587209	226,947	295,031	(68,084)	(10,872)	5%	(3,262)	3.2500%	353	20380010-Distribution Service-Steel
4587213	349,928	454,906	(104,978)	(16,636)	5%	(4,991)	3.2500%	541	20380010-Distribution Service-Steel
4587219	421,364	547,773	(126,409)	(19,265)	5%	(5,780)	3.2500%	626	20380010-Distribution Service-Steel
4587225	251,034	326,344	(75,310)	(11,068)	4%	(3,320)	3.2500%	360	20380010-Distribution Service-Steel
4587229	571,319	742,715	(171,396)	(13,346)	2%	(4,004)	3.2500%	434	20380010-Distribution Service-Steel

Calculation of Estimated Annual GUIC-Related Retirements
for 2012-2022

Asset Detail

Asset ID	Book Value	Estimated Reserve 1/1/2010	Net Book Value 1/1/2010	Estimated GUIC Retirement	% of Book Value Retired	Estimate of 2010 Rate Base for Replaced Asset	Approved Depreciation Rate	Depreciation Expense	Utility Account
4587240	549,571	714,442	(164,871)	(20,864)	4%	(6,259)	3.2500%	678	20380010-Distribution Service-Steel
4587246	626,845	814,898	(188,053)	(23,694)	4%	(7,108)	3.2500%	770	20380010-Distribution Service-Steel
4587251	717,463	932,702	(215,239)	(24,431)	3%	(7,329)	3.2500%	794	20380010-Distribution Service-Steel
4587255	424,371	551,682	(127,311)	(14,413)	3%	(4,324)	3.2500%	468	20380010-Distribution Service-Steel
4587263	306,330	398,229	(91,899)	(9,269)	3%	(2,781)	3.2500%	301	20380010-Distribution Service-Steel
4587270	262,839	341,690	(78,852)	(7,921)	3%	(2,376)	3.2500%	257	20380010-Distribution Service-Steel
4587278	137,246	178,419	(41,174)	(4,823)	4%	(1,447)	3.2500%	157	20380010-Distribution Service-Steel
4587283	153,698	199,807	(46,109)	(5,940)	4%	(1,782)	3.2500%	193	20380010-Distribution Service-Steel
4587288	74,252	96,527	(22,276)	(3,126)	4%	(938)	3.2500%	102	20380010-Distribution Service-Steel
4587294	40,781	53,015	(12,234)	(516)	1%	(155)	3.2500%	17	20380010-Distribution Service-Steel
4587298	70,295	91,383	(21,089)	(1,736)	2%	(521)	3.2500%	56	20380010-Distribution Service-Steel
4587301	201,597	262,077	(60,479)	(3,316)	2%	(995)	3.2500%	108	20380010-Distribution Service-Steel
4587304	110,666	143,001	(32,335)	(1,476)	1%	(431)	3.2500%	48	20380010-Distribution Service-Steel
4587308	116,604	148,293	(31,688)	(2,082)	2%	(566)	3.2500%	68	20380010-Distribution Service-Steel
4587319	145,927	181,113	(35,186)	(1,717)	1%	(414)	3.2500%	56	20380010-Distribution Service-Steel
4587371	29,541	38,403	(8,862)	(1,387)	5%	(416)	3.2500%	45	20380010-Distribution Service-Steel
4587373	87,876	114,239	(26,363)	(4,479)	5%	(1,344)	3.2500%	146	20380010-Distribution Service-Steel
4587377	66,084	85,909	(19,825)	(530)	1%	(159)	3.2500%	17	20380010-Distribution Service-Steel
4587381	57,885	75,251	(17,366)	(601)	1%	(180)	3.2500%	20	20380010-Distribution Service-Steel
4587383	107,665	139,965	(32,300)	(5,024)	5%	(1,507)	3.2500%	163	20380010-Distribution Service-Steel
4587386	88,545	115,109	(26,564)	(4,310)	5%	(1,293)	3.2500%	140	20380010-Distribution Service-Steel
4587388	55,632	72,321	(16,690)	(2,512)	5%	(754)	3.2500%	82	20380010-Distribution Service-Steel
4587392	31,462	40,900	(9,438)	(1,147)	4%	(344)	3.2500%	37	20380010-Distribution Service-Steel
4587393	11,885	15,450	(3,565)	(396)	3%	(119)	3.2500%	13	20380010-Distribution Service-Steel
4587394	4,514	5,869	(1,354)	(238)	5%	(71)	3.2500%	8	20380010-Distribution Service-Steel
4587400	5,075	6,597	(1,522)	(267)	5%	(80)	3.2500%	9	20380010-Distribution Service-Steel
4587557	16,997	22,096	(5,099)	(2,637)	16%	(791)	3.2500%	86	20380020-Distribut Service-Plastic
4587558	8,008	10,262	(2,254)	(1,441)	18%	(406)	3.2500%	47	20380020-Distribut Service-Plastic
4587561	26,040	32,547	(6,507)	(5,430)	21%	(1,357)	3.2500%	176	20380020-Distribut Service-Plastic
4587566	47,865	58,312	(10,447)	(1,251)	3%	(273)	3.2500%	41	20380020-Distribut Service-Plastic
4587568	26,928	31,953	(5,025)	(2,693)	10%	(502)	3.2500%	88	20380020-Distribut Service-Plastic
4587570	32,506	37,543	(5,037)	(5,643)	17%	(875)	3.2500%	183	20380020-Distribut Service-Plastic
4587575	34,225	38,446	(4,221)	(5,306)	16%	(654)	3.2500%	172	20380020-Distribut Service-Plastic
4587577	27,160	29,650	(2,490)	(4,058)	15%	(372)	3.2500%	132	20380020-Distribut Service-Plastic
4587580	27,699	29,362	(1,663)	(3,735)	13%	(224)	3.2500%	121	20380020-Distribut Service-Plastic
4587584	50,207	51,632	(1,425)	(3,561)	7%	(101)	3.2500%	116	20380020-Distribut Service-Plastic
4587587	29,069	28,974	95	(3,471)	12%	11	3.2500%	113	20380020-Distribut Service-Plastic
4587590	20,454	19,741	714	(2,351)	11%	82	3.2500%	76	20380020-Distribut Service-Plastic

Calculation of Estimated Annual GUIC-Related Retirements
for 2012-2022

Asset Detail

Asset ID	Book Value	Estimated Reserve 1/1/2010	Net Book Value 1/1/2010	Estimated GUIC Retirement	% of Book Value Retired	Estimate of 2010 Rate Base for Replaced Asset	Approved Depreciation Rate	Depreciation Expense	Utility Account
4587593	69,914	65,263	4,652	(6,124)	9%	407	3.2500%	199	20380020-Distribut Service-Plastic
4587595	129,366	116,665	12,701	(11,415)	9%	1,121	3.2500%	371	20380020-Distribut Service-Plastic
4587598	48,919	42,568	6,351	(4,659)	10%	605	3.2500%	151	20380020-Distribut Service-Plastic
4587601	47,566	39,886	7,680	(2,643)	6%	427	3.2500%	86	20380020-Distribut Service-Plastic
4587603	65,608	52,938	12,669	(5,467)	8%	1,056	3.2500%	178	20380020-Distribut Service-Plastic
4587605	81,429	63,128	18,301	(4,161)	5%	935	3.2500%	135	20380020-Distribut Service-Plastic
4587607	95,387	70,931	24,457	(1,635)	2%	419	3.2500%	53	20380020-Distribut Service-Plastic
4587609	82,100	58,452	23,648	(1,073)	1%	309	3.2500%	35	20380020-Distribut Service-Plastic
4587612	101,633	69,143	32,490	(3,551)	3%	1,135	3.2500%	115	20380020-Distribut Service-Plastic
4587614	67,793	43,976	23,817	(3,178)	5%	1,116	3.2500%	103	20380020-Distribut Service-Plastic
4587616	122,557	75,622	46,935	(4,902)	4%	1,877	3.2500%	159	20380020-Distribut Service-Plastic
4587619	95,018	55,623	39,395	(4,109)	4%	1,704	3.2500%	134	20380020-Distribut Service-Plastic
4587622	151,357	83,814	67,543	(4,571)	3%	2,040	3.2500%	149	20380020-Distribut Service-Plastic
4587626	157,410	82,185	75,225	(4,660)	3%	2,227	3.2500%	151	20380020-Distribut Service-Plastic
4587630	133,968	65,707	68,262	(4,322)	3%	2,202	3.2500%	140	20380020-Distribut Service-Plastic
4587633	153,842	70,586	83,256	(3,303)	2%	1,788	3.2500%	107	20380020-Distribut Service-Plastic
4587636	221,142	94,467	126,675	(5,238)	2%	3,000	3.2500%	170	20380020-Distribut Service-Plastic
4587639	172,670	68,297	104,373	(4,518)	3%	2,731	3.2500%	147	20380020-Distribut Service-Plastic
4587642	205,638	74,830	130,808	(2,311)	1%	1,470	3.2500%	75	20380020-Distribut Service-Plastic
4587645	177,693	59,038	118,654	(2,812)	2%	1,877	3.2500%	91	20380020-Distribut Service-Plastic
4587649	183,996	55,311	128,686	(4,135)	2%	2,892	3.2500%	134	20380020-Distribut Service-Plastic
4587651	640	832	(192)	(160)	25%	(48)	3.2500%	5	20380020-Distribut Service-Plastic
4587657	13,265	16,580	(3,315)	(1,237)	9%	(309)	3.2500%	40	20380020-Distribut Service-Plastic
4587659	20,960	25,535	(4,575)	(1,906)	9%	(416)	3.2500%	62	20380020-Distribut Service-Plastic
4587661	21,545	25,565	(4,020)	(1,921)	9%	(359)	3.2500%	62	20380020-Distribut Service-Plastic
4587663	17,803	20,561	(2,759)	(1,259)	7%	(195)	3.2500%	41	20380020-Distribut Service-Plastic
4587665	14,639	16,445	(1,805)	(949)	6%	(117)	3.2500%	31	20380020-Distribut Service-Plastic
4587667	75,333	82,240	(6,906)	(4,383)	6%	(402)	3.2500%	142	20380020-Distribut Service-Plastic
4587669	23,925	25,362	(1,436)	(1,475)	6%	(89)	3.2500%	48	20380020-Distribut Service-Plastic
4587671	63,140	64,932	(1,793)	(4,047)	6%	(115)	3.2500%	132	20380020-Distribut Service-Plastic
4587673	85,096	84,819	277	(4,570)	5%	15	3.2500%	149	20380020-Distribut Service-Plastic
4587676	88,898	85,796	3,102	(4,621)	5%	161	3.2500%	150	20380020-Distribut Service-Plastic
4587679	101,145	94,415	6,730	(5,010)	5%	333	3.2500%	163	20380020-Distribut Service-Plastic
4587682	110,408	99,568	10,840	(5,182)	5%	509	3.2500%	168	20380020-Distribut Service-Plastic
4587685	54,260	47,215	7,044	(367)	1%	48	3.2500%	12	20380020-Distribut Service-Plastic
4587688	41,248	34,588	6,660	(1,447)	4%	234	3.2500%	47	20380020-Distribut Service-Plastic
4587691	52,948	42,724	10,225	(1,925)	4%	372	3.2500%	63	20380020-Distribut Service-Plastic
4587694	58,116	45,054	13,062	(1,571)	3%	353	3.2500%	51	20380020-Distribut Service-Plastic

Calculation of Estimated Annual GUIC-Related Retirements
for 2012-2022

Asset Detail

Asset ID	Book Value	Estimated Reserve 1/1/2010	Net Book Value 1/1/2010	Estimated GUIC Retirement	% of Book Value Retired	Estimate of 2010 Rate Base for Replaced Asset	Approved Depreciation Rate	Depreciation Expense	Utility Account
4587697	50,819	37,789	13,030	(1,392)	3%	357	3.2500%	45	20380020-Distribut Service-Plastic
4587699	82,555	58,776	23,779	(2,256)	3%	650	3.2500%	73	20380020-Distribut Service-Plastic
4587702	117,769	80,121	37,648	(3,194)	3%	1,021	3.2500%	104	20380020-Distribut Service-Plastic
4587705	171,861	111,483	60,379	(3,773)	2%	1,325	3.2500%	123	20380020-Distribut Service-Plastic
4587708	134,889	83,231	51,658	(3,250)	2%	1,245	3.2500%	106	20380020-Distribut Service-Plastic
4587711	523,598	306,510	217,088	(9,924)	2%	4,115	3.2500%	323	20380020-Distribut Service-Plastic
4587714	210,619	116,630	93,989	(3,628)	2%	1,619	3.2500%	118	20380020-Distribut Service-Plastic
4587717	316,276	165,130	151,146	(5,240)	2%	2,504	3.2500%	170	20380020-Distribut Service-Plastic
4587720	227,619	111,639	115,980	(3,917)	2%	1,996	3.2500%	127	20380020-Distribut Service-Plastic
4587723	370,163	169,839	200,324	(5,923)	2%	3,205	3.2500%	192	20380020-Distribut Service-Plastic
4587727	340,739	145,556	195,182	(3,909)	1%	2,239	3.2500%	127	20380020-Distribut Service-Plastic
4587731	348,277	137,756	210,521	(4,815)	1%	2,910	3.2500%	156	20380020-Distribut Service-Plastic
4587734	360,636	131,233	229,403	(4,212)	1%	2,679	3.2500%	137	20380020-Distribut Service-Plastic
4587738	284,803	94,626	190,177	(2,216)	1%	1,480	3.2500%	72	20380020-Distribut Service-Plastic
4587741	409,098	122,978	286,120	(3,653)	1%	2,555	3.2500%	119	20380020-Distribut Service-Plastic
4587829	4,463	5,801	(1,339)	(109)	2%	(33)	3.2500%	4	20380020-Distribut Service-Plastic
4587830	31,251	40,626	(9,375)	(648)	2%	(194)	3.2500%	21	20380020-Distribut Service-Plastic
4587831	24,995	32,032	(7,037)	(490)	2%	(138)	3.2500%	16	20380020-Distribut Service-Plastic
4587834	32,615	40,766	(8,150)	(228)	1%	(57)	3.2500%	7	20380020-Distribut Service-Plastic
4587837	48,200	58,720	(10,520)	(1,054)	2%	(230)	3.2500%	34	20380020-Distribut Service-Plastic
4587839	40,213	47,717	(7,504)	(748)	2%	(140)	3.2500%	24	20380020-Distribut Service-Plastic
4587842	59,945	69,235	(9,289)	(1,013)	2%	(157)	3.2500%	33	20380020-Distribut Service-Plastic
4587844	71,286	80,077	(8,791)	(1,268)	2%	(156)	3.2500%	41	20380020-Distribut Service-Plastic
4587846	59,469	64,921	(5,452)	(1,331)	2%	(122)	3.2500%	43	20380020-Distribut Service-Plastic
4587848	183,936	194,979	(11,043)	(2,745)	1%	(165)	3.2500%	89	20380020-Distribut Service-Plastic
4587850	165,376	170,072	(4,695)	(2,329)	1%	(66)	3.2500%	76	20380020-Distribut Service-Plastic
4587853	120,481	120,090	392	(1,970)	2%	6	3.2500%	64	20380020-Distribut Service-Plastic
4587856	257,455	248,472	8,984	(1,788)	1%	62	3.2500%	58	20380020-Distribut Service-Plastic
4587858	356,993	333,240	23,753	(6,017)	2%	400	3.2500%	196	20380020-Distribut Service-Plastic
4587862	524,491	472,997	51,494	(7,980)	2%	783	3.2500%	259	20380020-Distribut Service-Plastic
4587866	311,420	270,991	40,429	(4,375)	1%	568	3.2500%	142	20380020-Distribut Service-Plastic
4587869	216,477	181,524	34,954	(2,506)	1%	405	3.2500%	81	20380020-Distribut Service-Plastic
4587872	310,612	250,631	59,982	(3,869)	1%	747	3.2500%	126	20380020-Distribut Service-Plastic
4587876	417,633	323,770	93,863	(3,797)	1%	853	3.2500%	123	20380020-Distribut Service-Plastic
4587881	403,724	300,212	103,512	(2,784)	1%	714	3.2500%	90	20380020-Distribut Service-Plastic
4587888	629,711	448,331	181,380	(3,515)	1%	1,012	3.2500%	114	20380020-Distribut Service-Plastic
4587892	541,738	368,556	173,182	(5,106)	1%	1,632	3.2500%	166	20380020-Distribut Service-Plastic
4587896	965,684	626,418	339,266	(7,243)	1%	2,545	3.2500%	235	20380020-Distribut Service-Plastic

Calculation of Estimated Annual GUIC-Related Retirements
for 2012-2022

Asset Detail

Asset ID	Book Value	Estimated Reserve 1/1/2010	Net Book Value 1/1/2010	Estimated GUIC Retirement	% of Book Value Retired	Estimate of 2010 Rate Base for Replaced Asset	Approved Depreciation Rate	Depreciation Expense	Utility Account
4587901	871,232	537,581	333,651	(6,294)	1%	2,410	3.2500%	205	20380020-Distribut Service-Plastic
4587905	598,161	350,159	248,002	(3,684)	1%	1,527	3.2500%	120	20380020-Distribut Service-Plastic
4587909	810,315	448,711	361,603	(4,331)	1%	1,933	3.2500%	141	20380020-Distribut Service-Plastic
4587913	1,005,461	524,958	480,503	(5,935)	1%	2,836	3.2500%	193	20380020-Distribut Service-Plastic
4587921	1,118,680	548,672	570,008	(6,501)	1%	3,312	3.2500%	211	20380020-Distribut Service-Plastic
4587925	908,009	416,614	491,395	(3,831)	0%	2,073	3.2500%	125	20380020-Distribut Service-Plastic
4587928	1,094,115	467,382	626,733	(5,331)	0%	3,054	3.2500%	173	20380020-Distribut Service-Plastic
4587931	1,633,120	645,957	987,163	(7,340)	0%	4,437	3.2500%	239	20380020-Distribut Service-Plastic
4587935	1,552,319	564,877	987,441	(6,492)	0%	4,130	3.2500%	211	20380020-Distribut Service-Plastic
4587940	2,242,431	745,047	1,497,384	(5,553)	0%	3,708	3.2500%	180	20380020-Distribut Service-Plastic
4587946	3,414,708	1,026,485	2,388,223	(10,972)	0%	7,673	3.2500%	357	20380020-Distribut Service-Plastic
4587951	370,050	481,065	(111,015)	(1,700)	0%	(510)	3.2500%	55	20380020-Distribut Service-Plastic
4587952	83,467	106,966	(23,499)	(2,616)	3%	(736)	3.2500%	85	20380020-Distribut Service-Plastic
4587956	228,507	285,609	(57,102)	(6,347)	3%	(1,586)	3.2500%	206	20380020-Distribut Service-Plastic
4587960	369,208	449,787	(80,579)	(10,315)	3%	(2,251)	3.2500%	335	20380020-Distribut Service-Plastic
4587965	477,197	566,245	(89,048)	(20,660)	4%	(3,855)	3.2500%	671	20380020-Distribut Service-Plastic
4587969	587,441	678,473	(91,032)	(27,679)	5%	(4,289)	3.2500%	900	20380020-Distribut Service-Plastic
4587973	656,746	737,736	(80,990)	(30,351)	5%	(3,743)	3.2500%	986	20380020-Distribut Service-Plastic
4587978	920,453	1,004,838	(84,385)	(41,249)	4%	(3,782)	3.2500%	1,341	20380020-Distribut Service-Plastic
4587985	884,086	937,162	(53,076)	(39,060)	4%	(2,345)	3.2500%	1,269	20380020-Distribut Service-Plastic
4587990	1,382,162	1,421,404	(39,243)	(55,101)	4%	(1,564)	3.2500%	1,791	20380020-Distribut Service-Plastic
4587994	2,352,154	2,344,508	7,646	(96,235)	4%	313	3.2500%	3,128	20380020-Distribut Service-Plastic
4587999	2,924,814	2,822,757	102,057	(113,490)	4%	3,960	3.2500%	3,688	20380020-Distribut Service-Plastic
4588004	4,876,870	4,552,381	324,489	(176,087)	4%	11,716	3.2500%	5,723	20380020-Distribut Service-Plastic
4588009	5,254,129	4,738,282	515,847	(178,716)	3%	17,546	3.2500%	5,808	20380020-Distribut Service-Plastic
4588013	3,621,692	3,151,516	470,176	(83,497)	2%	10,840	3.2500%	2,714	20380020-Distribut Service-Plastic
4588017	2,453,004	2,056,930	396,074	(72,686)	3%	11,736	3.2500%	2,362	20380020-Distribut Service-Plastic
4588021	2,972,750	2,398,689	574,061	(76,806)	3%	14,832	3.2500%	2,496	20380020-Distribut Service-Plastic
4588027	3,515,635	2,725,494	790,141	(92,321)	3%	20,749	3.2500%	3,000	20380020-Distribut Service-Plastic
4588032	3,692,236	2,745,571	946,665	(90,395)	2%	23,177	3.2500%	2,938	20380020-Distribut Service-Plastic
4588037	3,878,947	2,761,670	1,117,277	(89,546)	2%	25,792	3.2500%	2,910	20380020-Distribut Service-Plastic
4588041	4,864,964	3,309,737	1,555,227	(100,753)	2%	32,209	3.2500%	3,274	20380020-Distribut Service-Plastic
4588046	4,398,027	2,852,904	1,545,123	(84,655)	2%	29,741	3.2500%	2,751	20380020-Distribut Service-Plastic
4588052	6,318,714	3,898,870	2,419,845	(112,862)	2%	43,222	3.2500%	3,668	20380020-Distribut Service-Plastic
4588058	6,278,899	3,675,620	2,603,279	(102,520)	2%	42,505	3.2500%	3,332	20380020-Distribut Service-Plastic
4588063	8,209,086	4,545,778	3,663,308	(129,895)	2%	57,966	3.2500%	4,222	20380020-Distribut Service-Plastic
4588067	5,848,228	3,053,400	2,794,829	(81,086)	1%	38,751	3.2500%	2,635	20380020-Distribut Service-Plastic
4588072	6,820,222	3,345,073	3,475,149	(87,014)	1%	44,337	3.2500%	2,828	20380020-Distribut Service-Plastic

Calculation of Estimated Annual GUIC-Related Retirements
for 2012-2022

Asset Detail

Asset ID	Book Value	Estimated Reserve 1/1/2010	Net Book Value 1/1/2010	Estimated GUIC Retirement	% of Book Value Retired	Estimate of 2010 Rate Base for Replaced Asset	Approved Depreciation Rate	Depreciation Expense	Utility Account
4588077	6,690,418	3,069,705	3,620,713	(81,721)	1%	44,226	3.2500%	2,656	20380020-Distribut Service-Plastic
4588082	6,947,860	2,967,975	3,979,885	(77,759)	1%	44,542	3.2500%	2,527	20380020-Distribut Service-Plastic
4588087	6,471,056	2,559,532	3,911,524	(67,006)	1%	40,503	3.2500%	2,178	20380020-Distribut Service-Plastic
4588093	6,961,238	2,533,143	4,428,095	(66,799)	1%	42,491	3.2500%	2,171	20380020-Distribut Service-Plastic
4588098	6,791,745	2,256,556	4,535,189	(57,456)	1%	38,366	3.2500%	1,867	20380020-Distribut Service-Plastic
4588103	7,047,641	2,118,570	4,929,071	(57,814)	1%	40,435	3.2500%	1,879	20380020-Distribut Service-Plastic
4588124	3,282	4,205	(924)	(365)	11%	(103)	3.2500%	12	20380020-Distribut Service-Plastic
4588126	4,250	5,311	(1,062)	(425)	10%	(106)	3.2500%	14	20380020-Distribut Service-Plastic
4588128	24,342	29,655	(5,313)	(2,775)	11%	(606)	3.2500%	90	20380020-Distribut Service-Plastic
4588130	39,645	47,043	(7,398)	(4,482)	11%	(836)	3.2500%	146	20380020-Distribut Service-Plastic
4588133	30,407	35,119	(4,712)	(2,954)	10%	(458)	3.2500%	96	20380020-Distribut Service-Plastic
4588136	61,092	68,626	(7,534)	(5,572)	9%	(687)	3.2500%	181	20380020-Distribut Service-Plastic
4588140	66,892	73,025	(6,133)	(5,486)	8%	(503)	3.2500%	178	20380020-Distribut Service-Plastic
4588144	99,341	105,305	(5,964)	(8,444)	8%	(507)	3.2500%	274	20380020-Distribut Service-Plastic
4588146	116,338	119,641	(3,303)	(9,378)	8%	(266)	3.2500%	305	20380020-Distribut Service-Plastic
4588149	126,513	126,102	411	(9,398)	7%	31	3.2500%	305	20380020-Distribut Service-Plastic
4588152	218,755	211,122	7,633	(15,204)	7%	531	3.2500%	494	20380020-Distribut Service-Plastic
4588155	414,005	386,458	27,547	(19,336)	5%	1,287	3.2500%	628	20380020-Distribut Service-Plastic
4588158	411,518	371,115	40,402	(23,687)	6%	2,326	3.2500%	770	20380020-Distribut Service-Plastic
4588161	257,815	224,345	33,470	(13,638)	5%	1,771	3.2500%	443	20380020-Distribut Service-Plastic
4588164	155,502	130,394	25,108	(7,734)	5%	1,249	3.2500%	251	20380020-Distribut Service-Plastic
4588167	141,253	113,976	27,277	(7,117)	5%	1,374	3.2500%	231	20380020-Distribut Service-Plastic
4588169	225,226	174,606	50,620	(9,320)	4%	2,095	3.2500%	303	20380020-Distribut Service-Plastic
4588172	169,157	125,786	43,371	(6,704)	4%	1,719	3.2500%	218	20380020-Distribut Service-Plastic
4588175	297,366	211,714	85,652	(9,528)	3%	2,744	3.2500%	310	20380020-Distribut Service-Plastic
4588177	218,448	148,615	69,833	(7,820)	4%	2,500	3.2500%	254	20380020-Distribut Service-Plastic
4588179	252,265	163,639	88,626	(7,659)	3%	2,691	3.2500%	249	20380020-Distribut Service-Plastic
4588182	177,852	109,741	68,111	(4,067)	2%	1,558	3.2500%	132	20380020-Distribut Service-Plastic
4588185	212,736	124,534	88,202	(5,855)	3%	2,428	3.2500%	190	20380020-Distribut Service-Plastic
4588188	295,568	163,671	131,897	(8,248)	3%	3,681	3.2500%	268	20380020-Distribut Service-Plastic
4588191	240,215	125,418	114,797	(5,993)	2%	2,864	3.2500%	195	20380020-Distribut Service-Plastic
4588195	246,296	120,799	125,497	(5,333)	2%	2,717	3.2500%	173	20380020-Distribut Service-Plastic
4588199	311,615	142,976	168,639	(6,602)	2%	3,573	3.2500%	215	20380020-Distribut Service-Plastic
4588202	263,701	112,647	151,054	(5,274)	2%	3,021	3.2500%	171	20380020-Distribut Service-Plastic
4588204	296,994	117,472	179,522	(5,390)	2%	3,258	3.2500%	175	20380020-Distribut Service-Plastic
4588207	289,704	105,421	184,283	(4,418)	2%	2,810	3.2500%	144	20380020-Distribut Service-Plastic
4588210	323,783	107,577	216,206	(4,949)	2%	3,304	3.2500%	161	20380020-Distribut Service-Plastic
4588213	598,336	179,864	418,472	(8,067)	1%	5,642	3.2500%	262	20380020-Distribut Service-Plastic

Calculation of Estimated Annual GUIC-Related Retirements
for 2012-2022

Asset Detail

Asset ID	Book Value	Estimated Reserve 1/1/2010	Net Book Value 1/1/2010	Estimated GUIC Retirement	% of Book Value Retired	Estimate of 2010 Rate Base for Replaced Asset	Approved Depreciation Rate	Depreciation Expense	Utility Account
4790078	1,334	820	514	(1,334)	100%	514	4.0323%	54	20378000-Dist Meas & Reg Sta Eq-Gen
4790079	2,568	1,578	990	(2,568)	100%	990	4.0323%	104	20378000-Dist Meas & Reg Sta Eq-Gen
4790080	3,965	2,437	1,528	(3,965)	100%	1,528	4.0323%	160	20378000-Dist Meas & Reg Sta Eq-Gen
4790081	3,704	2,276	1,428	(3,704)	100%	1,428	4.0323%	149	20378000-Dist Meas & Reg Sta Eq-Gen
4790082	243	149	94	(243)	100%	94	4.0323%	10	20378000-Dist Meas & Reg Sta Eq-Gen
4790091	1,542	948	594	(1,542)	100%	594	4.0323%	62	20378000-Dist Meas & Reg Sta Eq-Gen
4790092	4,958	3,047	1,911	(4,958)	100%	1,911	4.0323%	200	20378000-Dist Meas & Reg Sta Eq-Gen
4790093	4,300	2,643	1,657	(4,300)	100%	1,657	4.0323%	173	20378000-Dist Meas & Reg Sta Eq-Gen
4790094	2,841	1,746	1,095	(2,841)	100%	1,095	4.0323%	115	20378000-Dist Meas & Reg Sta Eq-Gen
4790095	4,958	3,047	1,911	(4,958)	100%	1,911	4.0323%	200	20378000-Dist Meas & Reg Sta Eq-Gen
4790096	2,398	1,474	924	(2,398)	100%	924	4.0323%	97	20378000-Dist Meas & Reg Sta Eq-Gen
4790097	221	136	85	(221)	100%	85	4.0323%	9	20378000-Dist Meas & Reg Sta Eq-Gen
4790694	3,877	2,633	1,244	(3,877)	100%	1,244	4.0323%	156	20378000-Dist Meas & Reg Sta Eq-Gen
4790695	4,306	2,925	1,381	(4,306)	100%	1,381	4.0323%	174	20378000-Dist Meas & Reg Sta Eq-Gen
4790696	3,582	2,433	1,149	(3,582)	100%	1,149	4.0323%	144	20378000-Dist Meas & Reg Sta Eq-Gen
4790697	3,877	2,633	1,244	(3,877)	100%	1,244	4.0323%	156	20378000-Dist Meas & Reg Sta Eq-Gen
4790698	3,852	2,616	1,236	(3,852)	100%	1,236	4.0323%	155	20378000-Dist Meas & Reg Sta Eq-Gen
4790699	326	221	104	(326)	100%	104	4.0323%	13	20378000-Dist Meas & Reg Sta Eq-Gen
4791503	12,832	5,119	7,713	(12,832)	100%	7,713	4.0323%	517	20378000-Dist Meas & Reg Sta Eq-Gen
4791504	3,164	1,262	1,902	(3,164)	100%	1,902	4.0323%	128	20378000-Dist Meas & Reg Sta Eq-Gen
4791505	3,122	1,246	1,877	(3,122)	100%	1,877	4.0323%	126	20378000-Dist Meas & Reg Sta Eq-Gen
4791506	2,840	1,133	1,707	(2,840)	100%	1,707	4.0323%	115	20378000-Dist Meas & Reg Sta Eq-Gen
4791507	2,484	991	1,493	(2,484)	100%	1,493	4.0323%	100	20378000-Dist Meas & Reg Sta Eq-Gen
4791549	3,057	1,813	1,244	(3,057)	100%	1,244	4.0323%	123	20378000-Dist Meas & Reg Sta Eq-Gen
4791949	3,605	972	2,634	(3,605)	100%	2,634	4.0323%	145	20378000-Dist Meas & Reg Sta Eq-Gen
4791975	3,075	829	2,246	(3,075)	100%	2,246	4.0323%	124	20378000-Dist Meas & Reg Sta Eq-Gen
4795404	235,492	48,478	187,013	(973)	0%	773	2.8889%	28	20376010-Distribution Mains-Steel
4795418	2,289,980	497,792	1,792,189	(13,602)	1%	10,646	2.5556%	348	20376020-Distribution Mains-Plastic
4795421	958,468	208,350	750,118	(358)	0%	280	2.5556%	9	20376020-Distribution Mains-Plastic
4795440	163,113	43,872	119,242	(1,359)	1%	994	3.2500%	44	20380020-Distribut Service-Plastic
4795442	3,679,824	989,740	2,690,084	(22,440)	1%	16,405	3.2500%	729	20380020-Distribut Service-Plastic
4795443	629,901	169,421	460,481	(6,216)	1%	4,544	3.2500%	202	20380020-Distribut Service-Plastic
4795444	1,554,981	418,234	1,136,747	(5,990)	0%	4,379	3.2500%	195	20380020-Distribut Service-Plastic
5287228	357,704	77,757	279,947	(2,237)	1%	1,751	2.5556%	57	20376020-Distribution Mains-Plastic
6851764	383,504	83,365	300,138	(2,656)	1%	2,079	2.5556%	68	20376020-Distribution Mains-Plastic
7391636	2,343,510	556,165	1,787,345	(6,953)	0%	5,303	3.2500%	226	20380020-Distribut Service-Plastic
7391712	5,477,475	1,050,603	4,426,872	(36,122)	1%	29,193	2.5556%	923	20376020-Distribution Mains-Plastic
7391717	9,049,917	2,147,738	6,902,179	(65,461)	1%	49,926	3.2500%	2,127	20380020-Distribut Service-Plastic

Calculation of Estimated Annual GUIC-Related Retirements
for 2012-2022

Asset Detail

Asset ID	Book Value	Estimated Reserve 1/1/2010	Net Book Value 1/1/2010	Estimated GUIC Retirement	% of Book Value Retired	Estimate of 2010 Rate Base for Replaced Asset	Approved Depreciation Rate	Depreciation Expense	Utility Account
7391893	99,347	23,577	75,770	(376)	0%	287	3.2500%	12	20380020-Distribut Service-Plastic
7391922	1,060,308	203,372	856,937	(6,327)	1%	5,114	2.5556%	162	20376020-Distribution Mains-Plastic
7391969	1,834,750	351,913	1,482,837	(5,489)	0%	4,436	2.5556%	140	20376020-Distribution Mains-Plastic
8500823	895,435	212,506	682,929	(5,110)	1%	3,898	3.2500%	166	20380020-Distribut Service-Plastic
8500834	397,301	76,204	321,097	(4,627)	1%	3,739	2.5556%	118	20376020-Distribution Mains-Plastic
11287563	48,417	9,287	39,130	(149)	0%	121	2.5556%	4	20376020-Distribution Mains-Plastic
12435917	3,936,724	654,403	3,282,321	(22,548)	1%	18,800	2.5556%	576	20376020-Distribution Mains-Plastic
13014594	1,989,769	330,760	1,659,008	(5,834)	0%	4,864	2.5556%	149	20376020-Distribution Mains-Plastic
13819657	102,463	17,032	85,430	(1,717)	2%	1,431	2.5556%	44	20376020-Distribution Mains-Plastic
14766146	170,970	26,914	144,055	(5,807)	3%	4,893	2.8889%	168	20376010-Distribution Mains-Steel
16268507	437,882	61,591	376,291	(2,436)	1%	2,094	2.5556%	62	20376020-Distribution Mains-Plastic
16276071	1,336,352	187,967	1,148,385	(1,617)	0%	1,390	2.5556%	41	20376020-Distribution Mains-Plastic
16276709	5,215,361	733,574	4,481,787	(27,097)	1%	23,286	2.5556%	692	20376020-Distribution Mains-Plastic
16638119	6,276,384	1,092,314	5,184,070	(32,830)	1%	27,116	3.2500%	1,067	20380020-Distribut Service-Plastic
23860823	1,641,033	188,854	1,452,179	(14,481)	1%	12,814	2.5556%	370	20376020-Distribution Mains-Plastic
23860828	884,920	101,839	783,081	(589)	0%	521	2.5556%	15	20376020-Distribution Mains-Plastic
23861345	3,160,746	363,747	2,796,999	(14,485)	0%	12,818	2.5556%	370	20376020-Distribution Mains-Plastic
23861375	2,011,886	231,533	1,780,353	(5,144)	0%	4,552	2.5556%	131	20376020-Distribution Mains-Plastic
23861380	851,685	98,014	753,671	(8,076)	1%	7,146	2.5556%	206	20376020-Distribution Mains-Plastic
23863724	166,038	19,108	146,930	(3,904)	2%	3,455	2.5556%	100	20376020-Distribution Mains-Plastic
32303665	388	42	346	(4)	1%	4	2.8889%	0	20376010-Distribution Mains-Steel
33898552	6,532,610	584,725	5,947,885	(31,730)	0%	28,890	2.5556%	811	20376020-Distribution Mains-Plastic
33898670	1,771,043	158,524	1,612,520	(3,607)	0%	3,284	2.5556%	92	20376020-Distribution Mains-Plastic
34949551	993,907	88,963	904,943	(200)	0%	183	2.5556%	5	20376020-Distribution Mains-Plastic
34949792	421,667	37,743	383,924	(3,654)	1%	3,327	2.5556%	93	20376020-Distribution Mains-Plastic
36954016	143,348	12,831	130,517	(4,017)	3%	3,657	2.5556%	103	20376020-Distribution Mains-Plastic
44260449	1,559,565	99,710	1,459,854	(4,781)	0%	4,475	2.5556%	122	20376020-Distribution Mains-Plastic
44260798	174,411	11,151	163,260	(2,014)	1%	1,886	2.5556%	51	20376020-Distribution Mains-Plastic
44261044	4,357,797	278,615	4,079,182	(21,787)	0%	20,394	2.5556%	557	20376020-Distribution Mains-Plastic
45695733	1,773,948	113,417	1,660,531	(3,941)	0%	3,689	2.5556%	101	20376020-Distribution Mains-Plastic
51432385	2,253,868	463,572	1,790,296	(6,342)	0%	5,037	3.2500%	206	20380020-Distribut Service-Plastic
51432386	188,822	38,837	149,986	(2,219)	1%	1,762	3.2500%	72	20380020-Distribut Service-Plastic
51432387	4,602,876	946,712	3,656,163	(26,319)	1%	20,906	3.2500%	855	20380020-Distribut Service-Plastic
51432404	2,301,483	400,540	1,900,943	(6,442)	0%	5,321	3.2500%	209	20380020-Distribut Service-Plastic
51432410	2,118,109	301,603	1,816,506	(5,961)	0%	5,112	3.2500%	194	20380020-Distribut Service-Plastic
51432415	4,545,791	647,288	3,898,504	(19,265)	0%	16,522	3.2500%	626	20380020-Distribut Service-Plastic
51432419	5,494,375	608,502	4,885,874	(20,463)	0%	18,197	3.2500%	665	20380020-Distribut Service-Plastic
51432420	396,716	43,936	352,779	(1,892)	0%	1,683	3.2500%	61	20380020-Distribut Service-Plastic

Calculation of Estimated Annual GUIC-Related Retirements
for 2012-2022

Asset Detail

Asset ID	Book Value	Estimated Reserve 1/1/2010	Net Book Value 1/1/2010	Estimated GUIC Retirement	% of Book Value Retired	Estimate of 2010 Rate Base for Replaced Asset	Approved Depreciation Rate	Depreciation Expense	Utility Account
51432423	1,561,331	172,917	1,388,414	(2,774)	0%	2,467	3.2500%	90	20380020-Distribut Service-Plastic
51432425	4,622,227	365,651	4,256,576	(16,701)	0%	15,379	3.2500%	543	20380020-Distribut Service-Plastic
51432431	1,357,487	107,387	1,250,100	(2,703)	0%	2,489	3.2500%	88	20380020-Distribut Service-Plastic
51432432	685,819	141,058	544,761	(3,257)	0%	2,587	3.2500%	106	20380020-Distribut Service-Plastic
51432433	504,178	71,791	432,387	(2,586)	1%	2,217	3.2500%	84	20380020-Distribut Service-Plastic
51432437	87,382	6,913	80,470	(704)	1%	648	3.2500%	23	20380020-Distribut Service-Plastic
51432447	910,775	158,507	752,268	(3,832)	0%	3,165	3.2500%	125	20380020-Distribut Service-Plastic
51432448	515,588	40,787	474,801	(2,849)	1%	2,624	3.2500%	93	20380020-Distribut Service-Plastic
52893431	1,911,909	73,343	1,838,567	(9,793)	1%	9,418	2.5556%	250	20376020-Distribution Mains-Plastic
52896108	76,280	3,620	72,660	(967)	1%	921	3.2500%	31	20380020-Distribut Service-Plastic
55410534	414	20	394	(5,834)	1411%	5,557	3.2500%	190	20380020-Distribut Service-Plastic
55673138	749,806	28,763	721,043	(1,119)	0%	1,076	2.5556%	29	20376020-Distribution Mains-Plastic
55675327	51,808	2,459	49,349	(1,016)	2%	968	3.2500%	33	20380020-Distribut Service-Plastic
56468336	714,396	27,405	686,991	(1,076)	0%	1,035	2.5556%	28	20376020-Distribution Mains-Plastic
56760362	2,062,989	79,138	1,983,851	(10,919)	1%	10,501	2.5556%	279	20376020-Distribution Mains-Plastic
56763759	35,878	1,703	34,175	(815)	2%	777	3.2500%	27	20380020-Distribut Service-Plastic
58037637	3,866,538	183,522	3,683,016	(9,203)	0%	8,766	3.2500%	299	20380020-Distribut Service-Plastic
58037665	985,827	46,792	939,035	(1,243)	0%	1,184	3.2500%	40	20380020-Distribut Service-Plastic
58037827	578,539	27,460	551,079	(1,952)	0%	1,859	3.2500%	63	20380020-Distribut Service-Plastic
58045438	360,167	5,698	354,468	(6,014)	2%	5,918	3.2500%	195	20380020-Distribut Service-Plastic
	$ 471,295,323	$ 219,413,956	$ 251,881,367	$ (9,792,568)		$ 2,677,555		$ 287,139	

% of Remaining NBV for replaced assets	27.34%	Composite Depreciation Rate	2.9322%

Replacement Projects Summary

Project No	Project Description	Install Dates of Replaced Assets
GUIC TIMP		
11503515	ASV/REV Installation on High Pressure systems - MN Rider	No related retirements. New installations
50001418	ASV/REV Instalation on HP	No related retirements. New installations
11615874	East Metro Pipe Replac. Proj HP Gas	1940s/1950s
12013233	East Metro Pipeline Replacement - Reg Installation	1940s/1950s
11676981	East Metro Pipe Replac. Proj Distr	1940s/1950s
11706370	Install Rice & Co Rd Regulator	1940s/1950s
11819647	RTUs - East Metro Pipe Replacement	1940s/1950s
11649797	High Bridge Lateral Replacement	1948/but partial relocation in 1960
34000342	High Bridge Lat Replace Dist Reg	1948/but partial relocation in 1960
11649521	NSPM TIMP Mitigation of ILI Results	Island Line 1950s / East County Line Casings 1960
11651650	NSPM Pre 1950 Trans and IP Pipe	1950s
34003261	NSPM Trans and IP Pipe - Distr	1950s
50000704	MN/WBL/County Rd B Replacement-NSP to Rice	1950s
50000709	MN/STP/ECL Replace-Maplewood to NSP	1957
GUIC DIMP		
11649520	NSPM Install 6" and 4" Distribution Valves	No related retirements. New installations
50000646	NSPM Install 6" and 4" Distribution Valves	No related retirements. New installations
11649522	NSPM Programmatic Main Replacements	See Detail on Valve/Mains/Services Tabs
50000644	NSPM Programmatic Main Replacements	See Detail on Valve/Mains/Services Tabs
11649766	NSPM Programmatic Service Replacement	See Detail on Valve/Mains/Services Tabs
50000645	NSPM Programmatic Service Replacement	See Detail on Valve/Mains/Services Tabs
50002555	MN - Programmatic Main Replacements	See Detail on Valve/Mains/Services Tabs
50002156	MN/STP/STP/St Peter St DIMP	See Detail on Valve/Mains/Services Tabs
50002199	MN/Downtown St Cloud/Low Pressure	See Detail on Valve/Mains/Services Tabs
11813698	Pipeline Data Project Dist - NSPM	No related retirements. New installations
11980562	Hugo Line ILI improvements	No related retirements. Assessment work only
12173704	Replace Emr Vlvs in NSPM metro Dist Sys	See Detail on Valve/Mains/Services Tabs
12173830	NSPM Programmatic Service Reply	See Detail on Valve/Mains/Services Tabs
12173831	NSPM Programmatic Main Replace	See Detail on Valve/Mains/Services Tabs
34000462	Sartell Bridge Replacement	See Detail on Valve/Mains/Services Tabs
50000705	MN/STP/County Rd B Replace-Rice to Hamline	1950s
50000939	MN/Colby Lake Lateral Replace	1964-1965
50000937	MN/Arden Hills/System H05 Replace	1964
50000708	MN/NPT/Langdon Line Replacement	1958

Note: Please note that replaced assets shown in our retirement and net book value estimate (Pages 2-18) do not directly correlate to this listing. See our Petition for an explanation of our retirement process.

Calculation of Estimated Annual GUIC-Related Retirements
for 2012-2022

Valve Replacements

Functional Class	Type of Asset Replaced	Project Description	Location	Year Retired Asset was Installed	Quantity Replaced	Year of Replacement	Valve #	Valve Size
Distribution	Valve	Inoperable Emergency Valve	7th & Dale, STP	Uknown	1	2017	EV1241	12" SC
Distribution	Valve	Inoperable Emergency Valve	Cypress & 6th, STP	1974	1	2017	EV1218	6" SC
Distribution	Valve	Inoperable Emergency Valve	Victoria & St. Anthony, STP	Uknown	1	2017	EV1069	6" SC
Distribution	Valve	Inoperable Emergency Valve	Roselawn & McMenomie	1954	1	2017	DV6070	4" SC
Distribution	Valve	Inoperable Emergency Valve	Roselawn & McMenomie	1954	1	2017	DV6068	6" SC
Distribution	Valve	Inoperable Emergency Valve	Roselawn & McMenomie	1954	1	2017	EV6069	6" SC
Distribution	Valve	Inoperable Emergency Valve	McKnight & 3rd St E	1954	1	2017	EV1289	4" SC
Distribution	Valve	Inoperable Emergency Valve	McKnight & 3rd St E	1954	1	2017	EV1288	8" SC
Distribution	Valve	Inoperable Emergency Valve	McKnight & 3rd St E	1954	1	2017	EV1290	4" SC
Distribution	Valve	Inoperable Emergency Valve	McKnight & Hudson Rd	1954	1	2017	EV1291	8" SC
Distribution	Valve	Inoperable Emergency Valve	St. Albans & Alley South of Selby, STP	1974	1	2018	EV1373	4" SC
Distribution	Valve	Inoperable Emergency Valve	Victoria & St. Anthony, STP	Unknown	1	2018	EV1069	6" SC
Distribution	Valve	Inoperable Emergency Valve	Henry Ave & Fleming Field, SSTP	Unknown	1	2018	EV1245	12" SC
Distribution	Valve	Inoperable Emergency Valve	Hamline & County Road "B", RSV	N/A	1	2018	R063 bypass	4" SC
Distribution	Valve	Inoperable Emergency Valve	Forest & Rose, STP	1974	1	2018	EV1202	12" SC
Distribution	Valve	Inoperable Emergency Valve	Robert & Page, STP	1963	1	2018	EV1178	8" SC
Distribution	Valve	Inoperable Emergency Valve	Snelling & Englewood, STP	Unknown	1	2019	EV1020	12" SC
Distribution	Valve	Inoperable Emergency Valve	Fairview & Juno, STP	1974	1	2019	EV1030	16" SC
Distribution	Valve	Inoperable Emergency Valve	Fairview & Montreal, STP	1976	1	2019	EV1037	16" SC
Distribution	Valve	Inoperable Emergency Valve	Fairview & Montreal, STP	1974	1	2019	EV1038	16" SC
Distribution	Valve	Inoperable Emergency Valve	Fairview & Montreal, STP	1975	1	2019	EV1316	16" SC
Distribution	Valve	Inoperable Emergency Valve	Algonquin & Iroquois, STP	1975	1	2019	EV1275	12" SC
Distribution	Valve	Inoperable Emergency Valve	Algonquin & Iroquois, STP	1975	1	2019	EV1276	6" SC
Distribution	Valve	Inoperable Emergency Valve	Hwy 19 W TBS	2002	1	2019	EV3512	8" SC
Distribution	Valve	Inoperable Emergency Valve	Hwy 19 W TBS	2002	1	2019	EV3513	6" SC
Distribution	Valve	Inoperable Emergency Valve	St Albans & Arlington, STP	Unknown	1	2021	EV1074	12" SC
Distribution	Valve	Inoperable Emergency Valve	Dodd Rd & Hwy 110, Mendota Heights	1977	2	2021	EV1107 EV1108	12" SC
Distribution	Valve	Inoperable Emergency Valve	Victoria St N & Co Rd C W, Roseville	1973	1	2021	DV6781	4" SC
Distribution	Valve	Inoperable Emergency Valve	Victoria St N & Woodhill Dr, Roseville	1974	1	2021	EV6149	4" SC
Distribution	Valve	Inoperable Emergency Valve	Marion St & Thomas Ave, St Paul	1974	1	2021	DV1397	3" Steel
Distribution	Valve	Inoperable Emergency Valve	Radio Dr & Dale Rd, Woodbury	1989	1	2021	EV4162	4" PE

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Calculation of Estimated Annual GUIC-Related Retirements for 2012-2022

2015 Mains and Services Replacements

NSP-MN Main & Services DIMP Replacements					Main Footage			Service		
Division	Project	WO	Year Retired Main was Installed	Remaining Depreciable Service Life 1/1/2010 [1]	Estimate	Actual Replaced	Actual Installed from Passport	Estimate	Replaced	Transferred
St. Paul	STP/ARLINGTON, NEVADA, NEBRASKA BTN. WHITE BEAR & FURNESS	11935351	1977	12	12,760	7,100	12,760	230	223	4
	ROSEVILLE/ COHANSEY ST. PROJECT/ INSTALL 7500' OF 2" PE	12118923	1965	0	7,500	4,530	7,517	74	71	2
	STP / CLARENCE ST BTN ARLINGTON AVE E & HOYT AVE E / DIMP PR	12096468	1967	2	2,600	1,300	1,300	48	46	4
	Barclay/Dieter	12185039	Unknown	-	3,750	2,675	3,925	60	58	4
	STP / IVY AVE E XST: RUTH ST / LOW PRESSURE DIMP PROJECT	12088590	1953	0	16,000	11,350	16,031	218	224	0
	STP / 7TH ST W BTN ALTON & RANKIN ST	12217850	1972	7	2,326	4,660	2,326	24	21	4
	Idaho / Barclay / Clarence	12227467	1960	0	7,350	4,775	7,467	99	93	8
	ROSEVILLE/ GALTIER ST/ INSTALL 4600' OF 2" PE MAIN (DIMP)	12122749	Unknown	-	4,400	2,405	4,560	49	48	0
White Bear Lake	VADNAIS HEIGHTS-5-STAR MOBILE ESTATES-INSTALL 10,480' 2" PE	12100647	1974	9	10,480	9,225	10,124	190	112	77
	LAKE ELMO-CIMARRON MOBILE HOME PARK-SOUTH HALF-RENEW MAIN	12148971	1970	5	15,000	15,234	15,234	250	228	0
	LAKE ELMO-CIMARRON MOBILE HOME PARK-NORTH HALF-RENEW MAIN*	12225339	1970	5	16,709	16,064	16,709	252	237	0
	WBL/OPH/Area D	12200298	1962	0	5,000	4,520	5,097	12	14	7
	Vad Heights - North Star Estates	12226824	1972	7	10,000	7,040	9,485	172	161	8
	BAYPORT 5TH ST S INSTALL 3900' OF 2"PE MAIN RENEW 43 SVCS	12093773	Unknown	-	2,900	2,000	3,845	43	16	23
	NO ST PAUL / 14th AVE E	11945105	1978	13	3,865	2,105	3,999	48	40	6
Wyoming	Forest Lake - Carry-over from 2014	12185020	1968	3	9,000	10,850	8,741	93	68	28
	Forest Lake - 11th Ave & 6th St	12233388	1968	3	4,100	3,310	3,310	36	41	6
	Forest Lake - 1st Ave / 2nd Ave / 8th St / 7th St / 6th St	12234310	Unknown	-	4,650	3,750	4,642	27	43	9
Newport	Cloman Way & Lower 67th St	12262781	1971	6	5,500	3,900	6,322	152	154	0
	ST PAUL PARK /2015 DIMP/ DIXON / BLOSSOM	12148969	Unknown	-	2,204	950	2,224	26	26	0
	2015 DIMP / ST PAUL PK / DIXON DR	12149144	Unknown	-	2,581	1,600	2,549	29	29	0
	2015 DIMP / ST PAUL PK / GARY/ SELBY / DAYTON	12149707	Unknown	-	9,274	5,050	9,274	110	110	0
	ST PAUL PARK / 2015 DIMP / PORTLAND AVE / 13TH / 15TH	12101212	1972	7	1,800	1,240	1,764	16	11	5
	SOUTH ST PAUL / 2015 DIMP / BUTLER / KASSAN	12089427	1974	9	2,224	2,980	2,224	20	15	3
	SOUTH ST PAUL / 2015 DIMP BUTLER AVE / BUTLER CT	12101218	1974	9	2,298	1,200	2,298	30	26	6
	Denton	12255539	1973	8	4,828	4,220	4,828	75	75	0
	Burns Ave	12170859	Unknown	-	6,901	3,900	6,902	85	73	11
St. Cloud	DLH / DIMP / RIVER'S EDGE PARKING	12188957	Unknown	-	250	256	270	2	0	0
	St Cloud - Lincoln Ave*	12223516	Unknown	-	7,750	5,990	6,273	36	18	11
	Watertown	12162124	Unknown	-	10,200	7,030	10,210	95	73	37
	Sauk Rapids - 7th St NE (@ 2nd Ave NE)	12227154	Unknown	-	286	250	250	3	3	0
Southeast	GOODVIEW-LAKE VILLAGE MOBILE HOME PARK	12157111	1974	9	9,989	6,930	8,455	230	192	0
	Northfield Viking Ter	12241776	1970	5	10,550	8,525	7,677	180	180	0
	7th St S - Lake City	12205025	1971	6	1,400	-	1,256	6	0	0
	Hallstrom Dr & Burton St - Red Wing	12218584	1971	6	17,000	14,482	14,482	270	136	25
	Bluffview - Winona	12231997	1971	6	2,000	1,120	1,626	5	12	3
	Bush St & Langsford Ave - Red Wing	12212950	1972	7	5,950	5,100	6,337	85	69	7
	Hillsdale - Hidden Valley Mobile Home Park	12162836	1976	11	10,064	8,115	10,699	185	176	0
Moorhead	Moorehead 30th Ave & 8th St S	12215066 & 12208317	Unknown	-	975	-		1	0	0
	Moorehead Dale & 5th St S	12215099 & 12210767	Unknown	-	1,608	-	1,599	32	0	0
	Service Materials									
2015 DIMP Main and Service Replacements Total					**254,022**	**195,731**	**244,591**	**3,598**	**3,122**	**298**

[1] Remaining Service Life at start of 2010 Test Year in 2010 Gas Rate Case (Docket No. G002/GR-09-1153). Based on Gas Distribution Main Depreciation Average Service Life of 45 Years (Approved in Docket No. E,G002/D-07-1528)

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Calculation of Estimated Annual GUIC-Related Retirements
for 2012-2022

2016 Mains and Services Replacements

NSP-MN Main & Services DIMP Replacement Projects 2016						
Area	Work Order Number	Description	Year Retired Main was Installed	Remaining Depreciable Service Life 1/1/2010 [1]	Total Design FT.	Tot. Svc
St. Paul	12092489	ST PAUL - ARMSTRONG AVE XST: CHATSWORTH ST S	1990	25	1,350	28
	12328949	ST PAUL - ARMSTRONG AVE	1990	25	7,506	150
	12381180	ST PAUL - ATLANTIC, DULUTH & LARPENTEUR	1955	-	8,900	118
	12294860	ROSEVILLE - GLENHILL, WOODLYNN, CLARMAR	1955	-	7,810	81
	12398688	LAUDERDALE - EUSTIS ST	Unknown	-	1,100	17
	12380740	ROSEVILLE - WEWERS RD	Unknown	-	1,400	15
	12404989	ST PAUL - DOWNTOWN - 10TH-MINNESOTA	1957	-	1,200	5
	12344852	ROSEVILLE - COUNTY RD C, FISK, AVON, GROTTO	1958	-	23,400	305
	12444470	ST PAUL - DOWN TOWN (Kellogg)	1956	-	150	-
	12361662	ST PAUL - JUNO CONTRACTOR PORTION	1980	15	4,750	56
	12358730	ST PAUL - JUNO LOCAL PORTION	1980	15	1,260	20
	12364882	ST PAUL - AURORA - LOCAL PORTION	1980	15	960	36
	12369728	ST PAUL - AURORA - CONTRACTOR PORTION	1980	15	3,875	100
	12317526	ST PAUL - BERKELY-STANFORD-WELLESLY	1980	15	10,440	195
	12294862	ROSEVILLE - SKILLMAN-ELDRIDGE	1963	-	6,700	79
White Bear Lake	12344860	LAKE ELMO - 32ND ST	Unknown	-	8,600	77
	12293638	LAKE ELMO - LAKE ELMO AVE	Unknown	-	6,800	51
	12334697	NORTH ST PAUL - 19TH AVE	1956	-	7,000	85
	12371725	BAYTOWN TWP/ 13606 30TH ST N	Unknown	-	320	5
	12320156	OAKDALE - GROSPOINT AVE	1960	-	16,200	178
	12317855	WHITE BEAR LAKE - FLORENCE ST	1976	11	16,600	109
	12320058	MAPLEWOOD - ROSELAWN AVE	1954	-	12,900	179
	12320143	OAKDALE - GERSHWIN AVE	1967	2	9,500	70
	12320392	SHOREVIEW - DEBRA LN	1976	11	11,200	105
	12317856	SHOREVIEW NANCY PL	1971	6	7,600	85
	12275730	OAKDALE GREENE AVE	Unknown	-	2,150	22
Wyoming	12334677	FOREST LAKE - 2ND ST SE	1972	7	10,900	128
Newport	12346387	SOUTH ST PAUL - 3RD AVE S - 6TH ST S	Unknown	-	1,680	28
	12352620	MENDOTA HTS - 3RD ST-VANDALL-SOMERSET	1968	3	1,900	22
	12352631	ST PAUL PARK - 13TH-14TH-CHICAGO	Unknown	-	8,815	100
	12346491	SOUTH ST PAUL - 2ND AVE S - MARIE AVE	Unknown	-	7,530	120
	12346357	MENDOTA HTS - HWY 13 - WACHTER AVE	Unknown	-	911	5
St. Cloud	12342575	ST JOSEPH - 1ST AVE NE - CTY RD 75	1966	1	9,150	79
	12403875	SARTELL - MISSISSIPPI RIVER CROSSING	1973	8	1,700	-
	12249351	DELANO	Unknown	-	14,800	127
Southeast	12385504	WINONA - 3RD ST BTW GALE ST-MECHANIC ST	1974	9	8,100	127
	12354151	NORTHFIELD - FLORELLAS CT	1968	3	1,550	22
	12328936	FARIBAULT - 8TH ST SW	Unknown	-	5,320	48
	12345274	FARIBAULT - 7TH ST NW	1980	15	4,900	43
	12350531	FARIBAULT - 8TH ST SW, BOTSFORD, CARLTON	Unknown	-	3,000	49
Moorhead	12359542	MOORHEAD - REGAL ESTATES	Unknown	-	10,500	210
2016 DIMP Main and Service Replacements Total					**270,427**	**3,279**

[1] Remaining Service Life at start of 2010 Test Year in 2010 Gas Rate Case (Docket No. G002/GR-09-1153). Based on Gas Distribution Main Depreciation Average Service Life of 45 Years (Approved in Docket No. E,G002/D-07-1528)

Note: Please note that replaced assets shown in our retirement and net book value estimate (Pages 2-18) do not directly correlate to this listing. See our Petition for an explanation of our retirement process.

Calculation of Estimated Annual GUIC-Related Retirements
for 2012-2022

2017 Mains and Services Replacements

NSP-MN Main & Services DIMP Replacement Projects 2017						
Area	**Work Order Number**	**Description**	**Year Retired Main was Installed**	**Remaining Depreciable Service Life 1/1/2010 [1]**	**Total Design FT.**	**Tot. Svc**
St. Paul	12294045	ROSEVILLE - FERNWOOD ST	1955	-	3,760	44
	12315892	ST PAUL - CASE AVE BTN EDGERTON-EARL	1979	14	11,300	177
	12328310	ST PAUL - HAGUE/SELBY	1978	13	6,745	128
	12326608	ST PAUL - EDMOND	Unknown	-	5,290	113
	N/A	ST PAUL - ST PETER, FORD 4TH	1963	-	4,200	62
	12320752	ST PAUL - ETNA-BIRMINGHAM-WINCHELL	1962	-	9,600	141
White Bear Lake	12317581	ARDEN HILLS - ARDEN VIEW DR	Unknown	-	2,300	34
	12320389	ARDEN HILLS - GLENPAUL AVE	1955	-	4,700	58
	12319969	MAHTOMEDI - GRIFFIN AVE	1968	3	3,200	39
	12092590	BAYPORT - 7TH ST	1964	-	1,000	11
Wyoming	12320014	FOREST LAKE - 11TH AVE SW (LAKE ST)	Unknown	-	2,100	25
	12320051	FOREST LAKE - 208TH-209TH ST	1969	4	4,000	47
	12320027	FOREST LAKE - IVERSON AVE	1967	2	3,700	53
	N/A	FOREST LAKE - HEATH AVE	1968	3	3,600	34
Newport	12352434	COTTAGE GROVE - IRONWOOD	1971	6	3,338	100
	12438126	ST PAUL - BURNS-RUTH	1955	-	11,715	147
	DE 522036	COTTAGE GROVE - HYDE	1961	-	3,710	41
	DE 521888	COTTAGE GROVE - PT DOUGLAS RD, IDEAL AVE	1961	-	4,735	56
	DE 521609	COTTAGE GROVE - IDEAL-85TH ST	1962	-	4,160	36
	DE 521021	MENDOTA HTS - BACHELOR-SUTTON-MARIE	1973	8	10,570	77
	DE 526906	INVER GROVE HTS - DAWN-UPPER 75TH-77TH	1971	6	5,160	89
	DE 519457	INVER GROVE HTS - CONROY CT	1972	7	5,400	142
St. Cloud	N/A	ST CLOUD - 16TH AVE - 3RD ST N	1972	7	4,100	26
	12412846	ST CLOUD - 44TH AVE N, APPOLLO BY VA	1972	7	2,500	10
Southeast	DE 525652	WINONA - 3RD ST BTW WINONA ST-LIBERTY ST	1968	3	8,500	154
	12320940	NORTHFIELD - WOODLEY ST E	1977	12	500	13
	12344771	NORTHFIELD - ARCHIBALD ST/ASTER	1981	16	3,500	55
	12356426	LAKE CITY - LAKEWOOD AVE	1972	7	4,250	79
	12360394	RED WING - SPRUCE/SOUTHWOOD	Unknown	-	6,000	86
	12356414	WINONA - 9TH/52ND	1977	12	3,500	42
	N/A	NORTHFIELD - EDWARDS LN	1968	3	1,660	42
	DE 525650	RED WING - BUSH ST - PLUM ST	1983	18	3,250	76
	N/A	RED WING - WRIGHT/FINRUD	1975	10	10,400	130
Moorhead	12410474	MOORHEAD-MOBILE MANOR-1224 15TH AVE. N	1972	7	1,260	38
	12422040	DILWORTH - 1ST AVE SE	1972	7	5,000	48
2017 DIMP Main and Service Replacements Total					**168,703**	**2,453**

[1] Remaining Service Life at start of 2010 Test Year in 2010 Gas Rate Case (G002/GR-09-1153). Based on Gas Distribution Main Depreciation Average Service Life of 45 Years (Approved in E,G002/D-07-1528)

Note: Please note that replaced assets shown in our retirement and net book value estimate (Pages 2-18) do not directly correlate to this listing. See our Petition for an explanation of our retirement process.

Calculation of Estimated Annual GUIC-Related Retirements for 2012-2022

2018 Mains and Service Replacements

NSP-MN Main & Services DIMP Replacement Projects 2018						
Area	Work Order Number	Description	Year Retired Main was Installed	Remaining Depreciable Service Life 1/1/2010 [1]	Total Design FT.	Tot. Svc
St Paul	102002462	ROSEVILLE / CO RD 2 & LAKEVIEW / DIMP	Unknown	-	14,150	70
	101157888	RSV/OXFORD ST/ DIMP/ INSTALL 1200' 2" PE	Unknown	-	1,200	4
	101746906	ST PAUL - ISABELL / CONGRESS	1965	-	4,700	2
	101592642	STP/ 2018 DIMP / AREA N-UPP AFTON	1960	-	7,510	106
White Bear Lake/Wyoming	100382714	01432348 NO ST PAUL 18TH AVE INSTALL 560	Unknown	-	560	2
	101756642	MPW/Raditz Ave/ Install 3800' of 2"	1965	-	3,800	26
	100412206	MWD/ EDGERTON ST/ INSTALL 4200' OF 2" PE	1955	-	4,200	1
	101509812	BIR / 2018 DIMP / BIRCHWOOD AVE	1968	3	2,921	39
	101776492	DIMP OAK GERSHWIN AVE INST 1100' - 2" PE	1970	5	1,100	-
	101879289	DIMP OAK GRAFTON AVE INST 1600' 2" MAIN	1970	5	1,600	10
	102146268	DIMP OAK GRANADA AVE 4100' - 2" MAIN	1970	-	4,100	24
	101359567	Forest Lake / 2018 DIMP / HARROW AVE N	1969	4	1,900	7
	100441816	LTC/ EDGERTON ST/ DIMP	1968	3	5,000	29
	100441817	LTC/ LABORE RD/ DIMP	1969	4	5,400	33
	101756827	LTL / 2018 DIMP / EDGERTON N OF LITTLE C	1968	3	8,500	35
	101155888	LTL / GREENBRIER ST /DIMP/ 5100' of 2"	1970	5	5,400	42
	100920813	LTL-WESTWIND DR-DIMP-INSTALL 2700' 2" PE	1969	4	2,700	19
	101946663	MAPLEWOOD - ROSELAWN	1954	-	2,400	7
	101947593	MAPLEWOOD / COPE AVE	1957	-	3,500	32
	101947594	MAPLEWOOD / CRAIG PL	1959	-	5,700	44
	101834990	MAPLEWOOD / HOLLOWAY / DIMP	1955	-	3,500	28
	101947595	MAPLEWOOD / JACKSON ST	1956	-	4,800	36
	101692533	MPW / 2018 DIMP / MAYHILL - MINNEHAHA #4	1961	-	5,500	43
	101756635	MPW/ /ARCADE ST/DIMP/INSTALL 5000' OF 2"	1966	1	5,000	23
	101163818	MPW/ BEAUMONT ST/ DIMP/ INSTALL 1400' 2"	1955	-	1,400	16
	101876643	MPW/MARYLAND AVE/DIMP/ INSTALL 1900' 2"	1965	-	1,900	14
	101627154	MWD - ELM ST DIMP	1970	5	1,250	8
	100588988	NEW BRIGHTON / WINDSOR CT - PHASE 3	1967	2	1,850	57
	100439830	NO ST PAUL HILLTOP CT INSTALL	1969	-	2,700	27
	101833922	NORTH ST PAUL / 1ST AVE	1966	1	4,652	44
	102001637	NORTH ST PAUL / 4TH & MARGARET / DIMP	1953	-	4,500	-
	101834533	NORTH ST PAUL / IVY ST N	1970	5	1,048	30
	101524703	NSP / 2018 DIMP / COWERN-HOWARD	1969	4	2,300	28
	101693184	NSP / 2018 DIMP / NAVAJO RD	1958	-	2,300	27
	101693177	NSP / 2018 DIMP / SHOSHONE RD E	1958	-	2,500	25
	101784580	NSP / 2018 DIMP / SKILLMAN	1954	-	9,340	57
	101916855	NSP / 2018 DIMP / WEST SIDE OF IVY ST N	1970	5	800	-
	101919344	NSP / MARY JO LN	1955	-	4,750	37
	101508477	NWB /2018 DIMP / 10th AVE NW	1970	5	4,180	-
	101985751	SHOREVIEW / HODGSON / DIMP	1962	-	4,600	-
	101693170	SHV / 2018 DIMP / BRIGADOON DR	1968	3	2,500	44
	101496871	SHV / 2018 DIMP / MERCURY-WOODLAND	1967	2	3,840	17
	101582735	SHV / 2018 DIMP / SNAIL LK RD & JANSA	1962	-	7,354	12
	101383583	SLL/ OLIVE ST W/ RECON/ INS 2400' 2" PE	Unknown	-	2,350	23
	101960298	SLL/SYCAMORE ST W/ INSTALL 5000' 2" PE	1968	3	4,700	32
	101582727	WBL / 2018 DIMP / CLARENCE ST	1968	3	4,163	-
	101688133	WHITE BEAR LAKE - STILLWATER ST-BALD-GARDEN	1961	-	14,049	89
	101660586	WHITE BEAR LAKE / EAST COUNTY LINE	1961	-	2,175	17
	101556528	WHITE BEAR LAKE / SOUTHWOOD	1968	3	3,461	35
	101832776	WHITE BEAR TOWNSHIP / BELLAIRE / DIMP	1961	-	7,000	38
	101838144	FOREST LAKE / FONDANT / DIMP	1970	5	5,000	31
	101463010	SHV / 2018 DIMP / VIRGINIA AVE	1968	3	1,800	-
Newport	101547248	COTTAGE GROVE - IDEAL-85TH ST DIMP	1961	-	4,160	35
	101876838	CTG / 2018 DIMP / HAMLET-HALLMARK-HALE	1959	-	6,950	83
	101478741	CTG / DIMP / HEARTHSIDE RD / RNW MAIN	1964	-	2,300	14
	101587426	IGH - CONROY CT DIMP	1972	7	5,385	-
	101886606	IGH / 2018 DIMP / DAWN AVE - UPPER 75TH	1955	-	4,300	-
	102028709	MEH / 2018 DIMP / WINSTON CT-DOWNING	1968	3	4,600	20
	101692530	MPW / 2018 DIMP / CRESTVIEW-HIGHWOOD	1969	4	11,000	61
	101685475	MEH / 2018 DIMP / MARIE-OVERLOOK	1969	4	5,700	41
	101692534	MPW / 2018 DIMP / MAYHILL-UPP AFTON (Metz)	1959	-	3,827	8
	101417261	SPP / DIMP / SUMMIT AVE / RENEW MAIN	Unknown	-	3,900	36
	101697233	WSP / 2018 DIMP / MENDOTA RD W	1969	4	2,940	10
St Cloud	101379226	SCL / 2018 DIMP / KINGS WAY	Unknown	-	1,600	16
	101714442	ST CLOUD / 6TH ST / 11TH AVE / 10TH AVE / DIMP	Unknown	-	1,630	12
	101579939	ST CLOUD / PROSPER DR-PROGRESS RD	1970	5	2,870	3
	101602512	STC - 4TH AVE N / DIMP	1970	5	5,055	39
Southeast	101804538	RDW / 2018 DIMP / 21ST ST	1960	-	1,300	16
	101802475	RDW / 2018 DIMP / CENTRAL PARK-18TH ST	1955	-	1,600	17
	101711329	RDW / 2018 DIMP / FINRID-WRIGHT	1971	6	10,400	105
	101794997	RED WING 189784 - 9TH ST	1955	-	850	2
	101728125	WINONA / DIMP / 107558 - E 7TH ST	1964	-	3,500	46
	101591201	WINONA / DIMP / 107603 - 7TH ST W	1966	1	5,800	23
	101780666	WINONA 107542 - E 10TH ST	1965	-	3,000	37
	101889468	WINONA 107587 - E 9TH ST	1961	-	1,400	11
	101913103	WNA / 2018 DIMP / 44TH AVE-VARIOUS	1961	-	4,300	34
	101544613	WNA / 2018 DIMP / COLLEGE VIEW-PARK	1960	-	2,515	18
	101692535	WNA / 2018 DIMP / CONRAD - WINCREST	1961	-	6,860	44
	101747565	WNA / 2018 DIMP / KNOLLWOOD LN	1969	4	1,950	4
	101903273	WNA / 2018 DIMP / W 9TH-ORRIN-WAYNE	1960	-	3,400	21
Moorhead	101490329	MHD / 2018 DIMP / CEDAR LANE	1970	5	4,215	34
	101483693	MHD / 2018 DIMP/Cedar-BIRCH	1970	5	4,000	30
2018 DIMP Main and Service Replacements Total					**334,910**	**2,190**

[1] Remaining Service Life at start of 2010 Test Year in 2010 Gas Rate Case (G002/GR-09-1153). Based on Gas Distribution Main Depreciation Average Service Life of 45 Years (Approved in E,G002/D-07-1528)

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Calculation of Estimated Annual GUIC-Related Retirements
for 2012-2022

2019 Mains and Services Replacements

NSP-MN Main & Services DIMP Replacement Projects 2019					
Area	**Description**	**Year Retired Main was Installed**	**Remaining Depreciable Service Life 1/1/2010 [1]**	**Total Design FT.**	**Tot.Svc**
Moorhead	MHD / 2019 DIMP / 11TH & 12TH St S	1961	-	8,341	40
Newport	CTG / 2019 DIMP / HYDE AVE S	1961	-	3,834	81
	CTG / 2019 DIMP / E PT DOUGLAS - IDEAL	1961	-	4,723	-
	MEH / 2019 DIMP / LANSFORD - STANWICH	1967	2	6,562	38
	MEH / 2019 DIMP / FREMONT - CHIPPEWA	1954	-	8,814	77
Northwest	MHD / 2019 DIMP / 19TH ST S - 24TH AVE S	1967	2	9,743	87
Southeast	LKC / 2019 DIMP / 10TH ST - W IOWA	1972	7	2,737	22
	LKC / 2019 DIMP / LILAC LN_PINE GROVE LN	1971	6	8,012	67
	WAB/DIMP/INDUSTRIAL CT & HWY 61	1970	5	4,814	16
	WNA / DIMP / EDGEWOOD RD	1965	-	3,656	39
	WNA / DIMP / E 8TH ST-BRIDGE	1960	-	4,658	51
	WNA / 2019 DIMP / SUNSET-VARIOUS	1960	-	17,135	143
	WNA / DIMP / LAIRD ST & E.BROADWAY	1960	-	475	1
	WNA / DIMP / W 6TH ST 54TH AVE	1963	-	3,722	39
	WNA / DIMP / HILBERT ST & W.6TH ST	1948	-	7,679	33
St. Paul	RSV / DIMP / CO RD C2 - LAKEVIEW	1954	-	3,551	-
	RSV / 2019 DIMP / LEXINGTON - DIONNE	1954	-	2,136	46
	TP / 2019 DIMP / BATTLE CREEK 1	1960	-	5,005	47
	STP / 2019 DIMP / BATTLE CREEK 2	1960	-	15,593	142
White Bear Lake	MWP / DIMP / CENTURY AVE	1962	-	4,097	20
	NSP / 2019 DIMP / INDIAN WAY - 2ND ST N	1959	-	4,197	54
	MPW/ Keller Pkwy/ 1120' 2"" PE - DIMP	1969	4	1,174	1
	SHV / DIMP / HODGSON RD	1964	-	5,390	17
	SHV / 2019 DIMP / CHURCHILL - HARRIET	1963	-	3,034	-
	SHV / 2019 DIMP / KENT ST - HARRIET AVE	1972	7	6,837	36
	SHV / 2019 DIMP / INGERSON RD	1955	-	6,257	67
	VDH / 2019 DIMP / MC MENEMY	1973	8	8,625	36
2019 DIMP Main and Service Replacements - Non-Urban Project Subtotal				**160,801**	**1,200**

Northwest	Downtown St Cloud LPS Retirement Prj	1972	7	5,487	-
Southeast	RDW/ DIMP/ W MAIN - 3RD ST.	1958	-	2,584	56
St. Paul	STP / 2019 DIMP / CONGRESS-ISABEL	1965	-	6,667	42
	STP / 2019 DIMP / ROBIE ST E	1971	6	3,066	43
	STP/ 2019 DIMP/ Flandrau St	1953	-	2,188	1
	STP / 2019 DIMP / ST. PETER STREET	1951	-	3,801	12
	STP / 2019 DIMP / LOWERTOWN	1956	-	2,833	1
White Bear Lake	LTL / DIMP / EDGERTON N OF LITTLE C	1965	-	2,227	-
	NWB / 2019 DIMP / BRIGHTON SQ	1968	3	2,499	60
2019 DIMP Main and Service Replacements - Urban Project Subtotal				**31,352**	**215**

2019 DIMP Main and Service Replacements Total				**192,153**	**1,415**

[1] Remaining Service Life at start of 2010 Test Year in 2010 Gas Rate Case (G002/GR-09-1153). Based on Gas Distribution Main Depreciation Average Service Life of 45 Years (Approved in E,G002/D-07-1528)

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2020 Mains and Services Replacements

NSP-MN Main & Services DIMP Replacement Projects 2020					
Area	Description	Year Retired Main was Installed	Remaining Depreciable Service Life 1/1/2010 [1]	Total Design FT.	Tot.Svc
Grand Forks	Grand Forks - Gateway Dr NE (MN Side)	1970	5	2502	0
Moorhead	Moorhead - 30th Ave S	1970	5	4312	0
	Moorhead - 2nd Ave/6th Street	1965	-	5564	27
	Moorhead - Appletree Ln	1971	6	4252	27
	Moorhead - Rensvold Blvd	1973	8	4788	22
	Moorhead - Maple Lane	1970	5	4166	37
Newport	122935 - Cottage Grove Grospoint	1958	-	2931	35
	122943 - Cottage Grove - Grenadier	1958	-	2779	32
	122954 - Cottage Grove - Greystone	1958	-	3102	35
	Newport - 377436 5th Ave & 3rd Ave	1958	-	8836	47
	South St. Paul - Wentworth Ave	1955	-	678	0
Southeast	Bayport - 3rd Street	1961	-	3886	24
	Faribault 109442 - Irving Ave	1971	6	3512	36
	Faribault - Division St W	Unknown	-	240	1
	Goodview - 44th Ave S Phase 2	1961	-	9628	96
	117747 - Lake City - Garden and Prarie	1975	10	7798	48
	117698 - Lake City - Camp Lakeview Rd	1965	-	3922	5
	Lake City - South 7th Street	1966	1	8379	79
	Lake City - Woodburn Street	1964	-	13871	72
	Lake City - Washington St	1964	-	8125	35
	Northfield - 321 ST W	1967	2	5378	26
	Red Wing 189276 - Woodland Dr	1969	4	5077	39
	195249 - Red Wing - Maple 1	1959	-	8758	84
	Red Wing 189336 - Reding Ave	1968	3	6067	26
	195287 Maple St 2 - Red Wing	1957	-	16280	145
	189424 - Hawthorne St Red Wing	1954	-	7446	81
	Winona - Goodview Phase 1	1961	-	17259	117
	Winona - Kansas & 3rd 98289	1960	-	1672	7
	Winona - Bundy Blvd	Unknown	-	1535	1
	Winona - Carimona St	1960	-	9094	80
St. Cloud	Sauk Rapids - Hwy 23 Renew	Unknown	-	3040	11
	215835 34th Ave N St. Cloud	1964	-	7148	54
	215817 35th Ave N St. Cloud	1965	-	5262	61
	198334 - 11th St S St Cloud	1967	2	2456	35
	Westminster Ave, Watertown 356007	1965	-	7289	122
	Watertown - Angel Ave	1965	-	10401	95
St. Paul	Falcon Heights - Tatum St	1956	-	2557	24
	Falcon Heights - Arona St	1957	-	4186	43
	Roseville - Victoria Street	Unknown	-	2559	12
	Roseville - Roseville Shopping Ctr	1969	4	426	0
	Roseville - Perimeter Drive	1971	6	3570	9
	St. Paul - South of Upper Afton Phase 1	1960	-	10454	124
	St. Paul - South of Upper Afton Phase 2	1960	-	7238	93
	St. Paul - Valley View/Highwood	1967	2	4178	29
	St. Paul - Cypress & Reaney	1960	-	8478	63
	St. Paul - Highwood Ave	1967	2	2279	9
	St. Paul - Hampden	1954	-	17	0
	St. Paul - 10th St. W	1951	-	1757	0
White Bear Lake	Dellwood - Old Hwy 8	1965	-	158	0
	Lake Elmo - 31st/Jamley/Janero	1967	2	6568	34
	336199 - Lake Elmo - Stillwater Blvd.	1967	2	3746	13
	Mahtomedil - Neptune	1962	-	1524	7
	18354 - Maplewood - Larpenteur Ave E	1954	-	2389	17
	Maplewood - County B E	1968	3	4552	16
	9th Avenue New Brighton	1957	-	4865	70
	12th Avenue New Brighton	1957	-	3075	26
	365726 - 10th Avenue New Brighton	1957	-	3570	39
	11th Avenue New Brighton	1957	-	3780	47
	347751 Poppyseed Drive New Brighton	1969	4	8015	71
	North Oaks - Spring Farm Lane	1965	-	8852	30
	North Oaks - Mallard Rd	1969	4	535	0
	North St. Paul - 15th Ave E	1953	-	5942	46
	North St. Paul - Oakhill Pl	Unknown	-	600	1
	North St. Paul - Division St. Phase 1	1953	-	7184	49
	North St. Paul - Division St. Phase 2	1953	-	17508	206
	North St. Paul - 11th Ave E	1968	3	2045	8
	Oakdale - 52nd Street North	1963	-	3711	20
	Shoreview - Victoria St	1959	-	4415	17
	Shoreview - Ingerson Rd	1955	-	6257	4
	Shoreview - Pinewood Dr	1970	5	9153	54
	Shoreview - Brigadoon Dr	1969	4	7737	89
	White Bear Township - South Shore Blvd - 2020	1970	5	9823	56
	White Bear Lake - Lincoln Avenue	1963	-	2467	22
	White Bear Lake - Bellaire Ave	Unkown	-	268	0
Wyoming	Forest Lake - 210th St N	1967	2	2872	16
	Wyoming - E Viking Blvd	1971	6	7175	78
	Wyoming - Forest Blvd N	1966	1	8646	20
2020 DIMP Main and Service Replacements Total				**412,564**	**3,104**

Calculation of Estimated Annual GUIC-Related Retirements for 2012-2022

2021 Mains and Services Replacements

NSP-MN Main & Services DIMP Replacement Projects 2021					
Area	**Description**	**Year Retired Main was Installed**	**Remaining Depreciable Service Life 1/1/2010 [1]**	**Total Design FT.**	**Tot.Svc**
Grand Forks	BW/EGF/GD/DIMP/3rd ST NW&3rd Ave NW	Unknown	-	3,344	42
Moorhead	Moorhead - S 8th Street	1965	-	1,800	15
	Moorhead - Concordia College	1962	-	2,190	1
	Moorhead - S 30th Ave	1973	8	20,950	30
	Moorhead Center Mall	1972	7	2,950	4
Newport	Cottage Grove - Grenadier	1958	-	600	7
	Cottage Grove - Hyde	Unknown	-	200	3
	Concord St - St. Paul	1967	2	13,300	87
	West St. Paul - Moreland Avenue	Unknown	-	2,800	54
	South St. Paul - Marie Ave	Unknown	-	5,180	66
	SSP - Messer & Malden	Unknown	-	1,250	7
Northwest	St. Cloud - 14th Ave NE	Unknown	-	1,000	7
	St. Cloud - 6th Ave S	1979	14	4,100	33
	St. Cloud - Rusan Street	1969	4	8,500	20
	St. Cloud - Sherwood Mobile Home Park	1968	3	6,000	100
	St. Cloud - Cloverleaf Trailer	Unknown	-	7,500	157
	W. St. Germain St. - St. Cloud	1977	12	5,000	31
St. Paul	IGH - S Robert Trail	1970	5	6,050	31
	Roseville - Terminal Road	1966	1	3,175	27
	County B 2 - DIMP/RECON	1967	2	2,850	16
	Cleveland Ave N	Unknown	-	3,680	9
	St. Paul - Churchill	1920	-	8,400	152
	STP 139651 - COMO Ave	1955	-	6,100	74
	Saint Paul - Water Street	1961	-	4,250	28
	Saint Paul - Snelling & Concordia	Unknown	-	2,750	44
	Larpenteur & Jackson	1959	-	4,600	0
	St. Paul - Ohio Street	1931	-	1,050	6
	Edgerton & Wheelock	1927	-	1,400	12
	Whitall Ave	1955	-	400	8
Southeast	Woodland Dr & Greenleaf Rd Faribault	1971	6	7,170	84
	Faribault - Downtown	1959	-	7,920	284
	Lincoln Ave NW & 2nd St NW Farib	1971	6	7,300	72
	Faribault - Greenwood Place	1968	3	4,007	83
	Goodview - 54th	1961	-	5,250	44
	Old W Main & Jackson - Red Wing	1960	-	1,020	9
	West Ave & 9th St	1955	-	100	2
	Old Zumbrota St & Guernsey Ln - Red Wing	1977	12	3,970	28
	Red Wing - Levee Road	1955	-	1,000	2
	Red Wing - W 5th St	1967	2	3,450	22
	Red Wing - Featherstone Rd	1972	7	1,790	15
	Winona - Cottonwood Dr	1977	12	1,200	8
	Winona - Marian & Gale	1965	-	5,190	94
	Winona - Theurer Blvd	Unknown	-	4,200	9
	Winona - Industrial Park Rd	1965	-	5,820	19
	Winona - Frontenac Dr & Menard Rd	1975	10	3,250	16
	Lion's Park - Winona	Unknown	-	190	2
White Bear Lake	Arden Hills - Lexington Ave	1965	-	7,000	35
	Little Canada - S Owasso Blvd	1961	-	2,200	9
	Little Canada - Country Drive	1972	7	9,600	38
	Maplewood - Kohlman Avenue	1970	5	8,400	26
	Arden Hills - Red Fox Rd	1968	3	2,000	11
	Mahtomedi - Wildwood Road	1962	-	2,000	32
	Maplewood Mall PEA	1973	8	800	3
	New Brighton 7th St NW	1959	-	5,750	48
	Windsor Court - New Brighton	1967	2	3,600	80
	HWY 36 - Castle Ave	1970	5	3,550	14
	Lexington & Cannon	1961	-	14,000	132
	Shoreview - Rice/Marie Street	1967	2	2,000	20
	Victoria St (former Cty Rd E) - Shoreview	1970	5	1,850	3
	Lakewood Ave - WBL	1959	-	12,000	180
Wyoming	Forest Lake - Harrow Ave	1968	3	6,000	0
	Forest Lake - Lake St & 4th Ave SW	1961	-	3,300	38
	Broadway St - Lindstrom	1966	1	2,500	30
2021 DIMP Main and Service Replacements Total				**280,746**	**2,563**

	2020	2021	2022	2023	2024	2025	2026
	Actual	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
TIMP Projects							
NSPM Transmission Pipeline Assessments O&M	1,702,683	1,887,917	600,000	1,200,000	1,400,000	800,000	1,000,000
State of Minnesota Load Dispatch Jurisdictional Al	88.78%	88.68%	88.14%	88.45%	88.23%	88.1360%	88.0713%
TIMP O&M allocated to MN Jurisdiction	**1,511,612**	**1,674,213**	**528,843**	**1,061,350**	**1,235,181**	**705,088**	**880,713**
DIMP Projects							
DIMP O&M direct assigned to MN Jurisdiction	246,827	391,083	250,000	250,000	250,000	250,000	250,000
Total Operations & Maintenance Expenses	**1,758,439**	**2,065,296**	**778,843**	**1,311,350**	**1,485,181**	**955,088**	**1,130,713**

	2022
Cap Structure (Last Authorized)	
Long Term Debt %	45.81%
Long Term Debt Cost	4.75%
Short Term Debt %	1.69%
Short Term Debt Cost	4.31%
Weighted Cost of Debt	2.25%
Common Stock %	52.50%
Common Stock Cost	9.04%
Weighted Cost of Equity	4.75%
Rate of Return	7.00%
Tax Rates	
Income Tax Rates	
State Income Tax Rate	9.80%
Federal Income Tax Rate	21.00%
Composite Income Tax Rate	
State Composite Income Tax Rate	28.742%
Company Composite Income Tax Rate	28.032%
Property Tax Rate	1.50%
Book Depreciation Lives	
Transmission	63.41
Distribution	37.55
Software	3.08
Net Salvage %	
Transmission	-15.00%
Distribution	-22.82%
Software	-
Book Depreciation Rates	
Transmission	1.44%
Distribution	2.33%
Software	20.80%

*Note: Book Depreciation Rates reflect Average Remaining Life

Magnitude of GUIC in Relation to
Last Approved Natural Gas Rate Case
Docket No. G002/GR-09-1153

" Minn. Stat. § 216B.1635 Subd. 3 (VII) magnitude of GUIC in relation to gas utility's rate base revenue approved by the Commission in gas utility's most recent general rate case, exclusive of gas purchase costs and transportation charges "

" Minn. Stat. § 216B.1635 Subd. 3 (VIII) magnitude of GUIC in relation to gas utility's capital expenditures since its most recent general rate case "

2010 Rate Case, Cost of Service Study - Docket G002/GR-09-1153
($000s)

Operating Revenues	2010 TY	
Retail	588,179	Fn 1
Operating Expenses:		
Fuel & Purchased Energy	429,081	
Base Revenue, Net of Gas Purchase Costs & Transportation Charges	159,098	[A]
Capital Expenditures (CWIP)	29,890	[B]

Proposed Gas Utility Infrastructure Costs (GUIC) Rider
(Dollars in Thousands)

	2021	2022	
Revenue Requirement Forecast	26,048	27,281	[C] Fn 2
% of GUIC Revenue as Compared to Base Revenue Approved in Docket G-002/GR-09-1153 (2010 TY)	16.37%	17.15%	= [C] / [A]
Capital Expenditures Forecast	58,659	61,132	[D]
% of GUIC Capital Expenditures as Compared to Expenditures Approved in Docket G-002/GR-09-1153 (2010 TY)	196.25%	204.52%	= [D] / [B]

Notes

Fn 1 Excludes $4.69 million of other operating income for customer-related charges not included in retail rates. See Compliance Filing in Docket G002/GR-09-1153: “Income Statement Adjustment Schedules”, Page 13, Line No. 4

Fn 2 Reflects forecasted revenue recovery for gas costs eligible for rider recovery under Minnesota 2013 Statute §216B.1635 Recovery of Gas Utility Infrastructure Costs, including:
(a) revenue requirements associated with new gas utility infrastructure projects, and
(b) deferred costs include implementation of the inspection and remediation of sewer/natural gas line conflicts approved in Docket No. G002/M-10-422 and costs to comply with gas pipeline safety programs approved in Docket No. G002/M-12-248

Amounts in $000's	GUIC Rider			Base Rates & PGA			MN Gas 2020 Annual Report			Annual Report Page Reference
	Dec - 2019	Dec - 2020	BOY/EOY Avg	Dec - 2019	Dec - 2020	BOY/EOY Avg	Dec - 2019	Dec - 2020	BOY/EOY Avg	
Rate Base										
Plant Investment	$ 160,438	$ 225,303	$ 192,870	$ 1,250,887	$ 1,394,228	$ 1,322,558	$ 1,411,325	$ 1,619,531	$ 1,515,428	G-2; G-16 + G-16A; G-34A
Depreciation Reserve	$ 4,191	$ 10,324	$ 7,258	599,581	636,267	617,924	603,772	$ 646,591	$ 625,182	G-2; G-19 + G-19A; G-34A
Net Utility Plant	156,247	214,979	185,613	651,306	757,961	704,633	807,553	972,940	890,246	
CWIP				33,036	24,763	28,900	33,036	24,763	$ 28,900	G-2; G-34A
Accumulated Deferred Taxes	18,073	21,448	$ 19,761	175,541	194,086	184,814	193,614	215,534	204,574	sum G-29A
DTA - NOL Average Balance			-	-	-	-	-	-	-	G-29A; G-34B
Total Accum Deferred Taxes	18,073	21,448	19,761	175,541	194,086	184,814	193,614	215,534	204,574	G-29A
Cash Working Capital										
Materials and Supplies				1,130	1,182	1,182	1,130	1,182	1,182	G-34A
Fuel Inventory				17,635	15,518	15,518	17,635	15,518	15,518	G-34A
Non-plant Assets and Liabilities				3,903	36,224	36,224	3,903	36,224	36,224	G-34A
Prepaids and Other				562	3,521	3,521	562	3,521	3,521	G-34A
Regulatory Amortizations										
Total Other Rate Base Items				23,231	56,445	56,445	23,231	56,445	56,445	
Total Rate Base	**$ 138,174**	**$ 193,531**	**$ 165,852**	**$ 532,032**	**$ 645,083**	**$ 605,164**	**$ 670,206**	**$ 838,613**	**$ 771,016**	**G-34; G-34A**
	20.62%	23.08%	21.51%	79.38%	76.92%	78.49%	100.00%	100.00%	100.00%	

Amounts in $000's	2020	2020	2020	
Revenues				
Retail Revenues	$ 19,035 *calendar yr revenue collections	$ 423,233	$ 442,268	G-2; G-30; G-34
Expenses				
Operating Expenses:				
Production				G-33
Purchased Gas		231,767	231,767	G-33
Natural Gas Storage		5,296	5,296	G-33
Gas Transmission	1,512	986	2,498	G-33
Gas Distribution	247	34,596	34,843	G-33
Customer Accounting		12,547	12,547	G-33
Customer Service & Information		19,081	19,081	G-33
Sales, Econ Dvlp & Other		28	28	G-33
Administrative & General		21,436	21,436	G-33
Total Operating Expenses	1,758	325,740	327,499	G-2; G-30
Book Depreciation	3,381	40,699	44,081	G-30
Amortization		2,786	2,786	G-30; G-30-1
Total Depreciation and Amortization	3,381	43,485	46,867	G-2
Taxes:				
Total Federal Income Taxes		4,580	4,580	G-30
Total State Income Taxes		2,370	2,370	G-30
Property Taxes	2,848	15,045	17,892	G-30
Deferred Income Tax & ITC	3,375	(2,384)	991	G-30
Payroll & Other Taxes		2,384	2,384	G-30
Total Taxes Other Than Income	6,223	15,044	21,267	G-30
Total Taxes	6,223	21,994	28,217	G-30
Total Expenses	11,362	391,220	402,582	G-2; G-30; G-34
Net Operating Income	7,673	32,013	39,686	G-30; G-34
AFUDC		3,234	3,234	G-2; G-32; G-34
Net Income	**$ 7,673**	**$ 35,248**	**$ 42,920**	**G-2; G-34**
	17.88%	82.12%	100.00%	
Revenue Requirements Calculation				
ROR	7.00%	7.36%	7.36%	
Average Rate Base	170,813 from rider model	605,164	771,016	
Required Operating Income	11,957	44,540	56,747	
Net Income	7,673	35,248	42,920	
Income Deficiency	4,284	9,292	13,826	
Revenue Conversion Factor	1.403351	1.403351	1.403351	
Revenue Deficiency	6,012	13,041	19,403	
Revenue Requirements	**$ 25,047**	**$ 436,273**	**$ 452,663**	
	5.53%	96.38%	100.00%	

Notes:
Rate Base Calculation in Rate Base section reflects BOY/EOY, similar to the annual report; rider model uses BOM/EOM average
Revenue amount is 2020 calendar year collections, which is not the collection period for the 2020 GUIC revenue requirements

	2020 Actual	2021 Forecast	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026 Forecast
Operations & Maintenance Expenses							
TIMP	1,511,611	1,674,213	528,843	1,061,350	1,235,181	705,088	880,713
DIMP	246,827	391,083	250,000	250,000	250,000	250,000	250,000
Total Operations & Maintenance Expenses	1,758,438	2,065,295	778,843	1,311,350	1,485,181	955,088	1,130,713
Capital-Related Revenue Requirements							
TIMP	9,163,873	13,810,064	13,901,833	14,472,741	15,998,305	17,573,637	18,998,488
DIMP and Mandated Relocations	12,320,892	16,479,243	20,698,521	30,837,552	35,954,697	41,007,454	45,873,286
Total Capital-Related Revenue Requirments	21,484,765	30,289,307	34,600,354	45,310,293	51,953,002	58,581,091	64,871,774
Regulatory Treatment							
GUIC Retirement Revenue Credits	(625,218)	(703,999)	(815,408)	-	-	-	-
Revenue Requirement in Base Rates	(480,000)	(846,937)	(846,937)	(846,937)	(846,937)	(846,937)	(846,937)
Other Disallowances	(2,989,248)	(5,265,812)	(6,436,223)	(7,725,515)	(9,246,159)	(10,778,903)	(12,246,081)
Revenue Requirement Subtotal	**19,148,738**	**25,537,854.45**	**27,280,630**	**38,049,191**	**43,345,086**	**47,910,340**	**52,909,469**
Prior Year Carryover	490,176	510,411.61	-	-	-	-	-
Revenue Requirement (RR)	**19,638,913**	**26,048,266.07**	**27,280,630**	**38,049,191**	**43,345,086**	**47,910,340**	**52,909,469**
Revenue Collections (RC)	19,128,501	26,048,266	27,280,630	38,049,191	43,345,086	47,910,340	52,909,469
Carryover Balance (RR - RC)	510,412	-	-	-	-	-	-

*2020 amounts contain 12 months of actual data; Final Compliance filing in Docket G002/M-19-664 contained 10 months of actual capital related data

	Jan-20 Actual	Feb-20 Actual	Mar-20 Actual	Apr-20 Actual	May-20 Actual	Jun-20 Actual	Jul-20 Actual	Aug-20 Actual	Sep-20 Actual	Oct-20 Actual	Nov-20 Actual	Dec-20 Actual	2020 Annual
Operations & Maintenance Expenses													
TIMP	(4,448)	27,965	35,698	28,735	30,028	50,045	139,146	329,765	334,548	97,101	342,778	100,251	1,511,611
DIMP	-	-	-	-	-	15,516	17,011	182,705	32,012	(6,403)	1,305	4,680	246,827
Total Operations & Maintenance Expenses	(4,448)	27,965	35,698	28,735	30,028	65,561	156,157	512,470	366,560	90,698	344,083	104,931	1,758,438
Capital-Related Revenue Requirements													
TIMP	811,463	805,538	786,677	765,999	733,797	725,436	705,174	400,921	751,648	841,157	966,883	869,180	9,163,873
DIMP and Mandated Relocations	973,266	948,040	1,017,990	993,405	980,573	987,445	974,923	981,364	1,079,617	1,094,472	1,095,858	1,193,938	12,320,892
Total Capital-Related Revenue Requirements	1,784,729	1,753,577	1,804,668	1,759,404	1,714,369	1,712,881	1,680,097	1,382,285	1,831,265	1,935,629	2,062,741	2,063,118	21,484,765
Revenue Requirement in Base Rates	(40,000)	(40,000)	(40,000)	(40,000)	(40,000)	(40,000)	(40,000)	(40,000)	(40,000)	(40,000)	(40,000)	(40,000)	(480,000)
Regulatory Treatment	(1,362,995)	(168,073)	(168,104)	(175,012)	(184,403)	(191,806)	(204,692)	(216,936)	(225,315)	(233,646)	(240,170)	(243,315)	(3,614,466)
Revenue Requirement Subtotal	**377,287**	**1,573,469**	**1,632,262**	**1,573,127**	**1,519,994**	**1,546,636**	**1,591,562**	**1,637,818**	**1,932,511**	**1,752,681**	**2,126,655**	**1,884,735**	**19,148,738**

Prior Year Carryover Balance	490,176
Total Revenue Requirements	19,638,913
Revenue Collections (Mar 21 - Feb 22)	19,128,501
Current Year Carryover Balance	510,412

	Jan-21 Actual	Feb-21 Actual	Mar-21 Actual	Apr-21 Actual	May-21 Actual	Jun-21 Actual	Jul-21 Forecast	Aug-21 Forecast	Sep-21 Forecast	Oct-21 Forecast	Nov-21 Forecast	Dec-21 Forecast	2021 Annual
Operations & Maintenance Expenses													
TIMP	1,505	19,358	8,058	13,035	14,674	6,752	11,516	321,814	317,380	321,814	334,229	304,078	1,674,213
DIMP	3,369	5,715	21,143	(4,628)	3,923	-	560	70,000	75,000	70,000	56,000	90,000	391,083
Total Operations & Maintenance Expenses	4,875	25,073	29,201	8,406	18,597	6,752	12,077	391,814	392,380	391,814	390,229	394,078	2,065,295
Capital-Related Revenue Requirements													
TIMP	1,132,435	1,574,199	1,133,122	1,021,945	1,123,414	1,120,666	1,111,645	1,118,549	1,118,650	1,118,861	1,120,959	1,115,620	13,810,064
DIMP and Mandated Relocations	1,397,062	1,317,558	1,303,209	1,218,552	1,207,430	1,230,348	1,302,316	1,351,804	1,451,244	1,515,772	1,570,549	1,613,401	16,479,243
Total Capital-Related Revenue Requirements	2,529,497	2,891,757	2,436,331	2,240,497	2,330,844	2,351,013	2,413,961	2,470,353	2,569,894	2,634,632	2,691,508	2,729,020	30,289,307
Revenue Requirement in Base Rates	(70,578)	(70,578)	(70,578)	(70,578)	(70,578)	(70,578)	(70,578)	(70,578)	(70,578)	(70,578)	(70,578)	(70,578)	(846,937)
Regulatory Treatment	(2,716,324)	(255,708)	(257,244)	(262,207)	(274,496)	(289,877)	(298,099)	(304,954)	(314,618)	(322,590)	(331,662)	(342,032)	(5,969,811)
Revenue Requirement Subtotal	**(252,531)**	**2,590,545**	**2,137,709**	**1,916,119**	**2,004,367**	**1,997,311**	**2,057,360**	**2,486,635**	**2,577,077**	**2,633,278**	**2,679,496**	**2,710,488**	**25,537,854**

Prior Year Carryover Balance	510,412
Total Revenue Requirements	26,048,266
Revenue Collections (Mar 22 - Feb 23)	26,048,266
Current Year Carryover Balance	-

2022 Monthly Tracker Summary - Revenue Requirements

	Jan-22 Forecast	Feb-22 Forecast	Mar-22 Forecast	Apr-22 Forecast	May-22 Forecast	Jun-22 Forecast	Jul-22 Forecast	Aug-22 Forecast	Sep-22 Forecast	Oct-22 Forecast	Nov-22 Forecast	Dec-22 Forecast	2022 Annual
Operations & Maintenance Expenses													
TIMP	44,070	44,070	44,070	44,070	44,070	44,070	44,070	44,070	44,070	44,070	44,070	44,070	528,843
DIMP	20,833	20,833	20,833	20,833	20,833	20,833	20,833	20,833	20,833	20,833	20,833	20,833	250,000
Total Operations & Maintenance Expenses	64,904	64,904	64,904	64,904	64,904	64,904	64,904	64,904	64,904	64,904	64,904	64,904	778,843
Capital-Related Revenue Requirements													
TIMP	1,164,262	1,163,256	1,161,362	1,160,364	1,159,372	1,125,994	1,128,955	1,165,587	1,166,905	1,167,756	1,169,012	1,169,009	13,901,833
DIMP and Mandated Relocations	1,629,626	1,635,532	1,755,842	1,597,871	1,566,739	1,622,540	1,653,454	1,693,794	1,757,764	1,801,864	1,850,342	2,133,153	20,698,521
Total Capital-Related Revenue Requirements	2,793,887	2,798,788	2,917,204	2,758,235	2,726,111	2,748,533	2,782,410	2,859,381	2,924,669	2,969,620	3,019,354	3,302,162	34,600,354
Revenue Requirement in Base Rates	(70,578)	(70,578)	(70,578)	(70,578)	(70,578)	(70,578)	(70,578)	(70,578)	(70,578)	(70,578)	(70,578)	(70,578)	(846,937)
Regulatory Treatment	(2,885,257)	(357,544)	(358,884)	(363,673)	(375,868)	(391,213)	(399,323)	(406,038)	(415,582)	(423,395)	(432,297)	(442,558)	(7,251,631)
Revenue Requirement Subtotal	**(97,044)**	**2,435,570**	**2,552,645**	**2,388,888**	**2,344,568**	**2,351,646**	**2,377,412**	**2,447,669**	**2,503,413**	**2,540,551**	**2,581,382**	**2,853,930**	**27,280,630**

Prior Year Carryover Balance	-
Total Revenue Requirements	**27,280,630**

Revenue Requirements Category Descriptions

Attachments G and H to this Petition respectively provide the TIMP and DIMP annual revenue requirements for 2022. The rate base categories in our proposed revenue requirements analysis and rationale for including or excluding costs in each category are explained below.

Plus Plant in Service: This is an addition to rate base. This category reflects the original cost of gas plant that has been put into service. In the specific case of the annual 2022 plant in service for gas utility infrastructure projects (GUIC), the $131.1 million for TIMP (Attachment G) and $239.0 million for DIMP and Mandated Relocations (Attachment H) reflect the dollar-value portion of the project in service as of December 31, 2022, which results in an increase to rate base. Standard ratemaking methodology calls for the inclusion of this item in the determination of rate base.

Less Book Depreciation Reserve: This is a reduction to rate base. It reflects the accumulated recovery of the amount invested in plant in service. In the specific case of the 2022 book depreciation reserve for GUIC projects, the $13.0 million for TIMP (Attachment G) and $7.1 million for DIMP and Mandated Relocations (Attachment H) reflect the amount of the plant in service that has been recovered as of December 31, 2022, which results in an increase to rate base. Standard ratemaking methodology calls for the exclusion of this credit balance in an asset account (contra-asset) from plant in service in the determination of rate base.

Less Accum Deferred Taxes: This is a reduction to rate base. It reflects the tax timing differences between book and tax depreciation lives and other non-plant book/tax timing differences, multiplied by the tax rate. Over the life of an asset, the Accumulated Deferred Tax is zero. In the specific case of the 2022 accumulated deferred taxes for GUIC projects, the $14.6 million for TIMP (Attachment G) and $15.6 million for DIMP and Mandated Relocations (Attachment H) reflect the accumulation of tax timing differences between book and tax depreciation through December 31, 2022, which results in a decrease to rate base. Standard ratemaking methodology calls for the exclusion of this timing-related asset in the determination of rate base.

Below we describe the categories we use to calculate the return in our proposed revenue requirements analysis, and our rationale for including costs in each category. We note that for both items below, standard ratemaking methodology calls for the inclusion of these items in the calculation of revenue requirements.

Plus Debt Return: This category reflects the return the Company is allowed in order to recover its weighted cost of debt for financing its capital investments. In the specific case of the annual 2022 debt return for GUIC return the Company is allowed in order to recover its weighted cost of debt for financing its capital projects, the $2.3 million for TIMP (Attachment G) and $3.4 million for DIMP and Mandated Relocations (Attachment H) reflect the amount of debt return the Company is allowed for January 2022 - December 2022 based on the cost of debt and ratios most recently approved in GUIC Docket No. G002/M-19-664.

Plus Equity Return: This category reflects the return the Company is allowed in order to recover its weighted cost of equity for financing its capital investments. In the specific case of the annual 2022 equity return for GUIC projects, the $4.9 million for TIMP (Attachment G) and $7.2 million for DIMP and Mandated Relocations (Attachment H) reflect the amount of return on equity the Company is allowed for January 2022 - December 2022 based on the equity ratio most recently approved in GUIC Docket No. G002/M-19-664 and the return on equity proposed in the present GUIC docket.

The types of income statement categories, description, and rationale for including costs in each category in the Company's proposed revenue requirements analysis are described below. For all four items, standard ratemaking methodology calls for the inclusion of these items in the calculation of revenue requirements.

Plus Property Taxes: This category reflects the estimated property taxes billed from local taxing authorities that the Company must pay based on the original cost of the Company's assets. Property taxes accrued are based on the original cost on December 31 from the prior year, and then paid the following year. In the specific case of the estimated annual 2022 property tax amount for GUIC projects, the $2.3 million for TIMP (Attachment G) and $2.8 million for DIMP and Mandated Relocations (Attachment H) reflect property tax rates based on ending plant in service as of December 31, 2020 payable in 2022.

Plus Book Depreciation: This category reflects the monthly/annual depreciation expense that is accumulated in the book depreciation reserve defined in part a) subsection ii). In the specific case of the annual 2022 book depreciation for GUIC projects, the $2.4 million for TIMP (Attachment G) and $4.1 million for DIMP and Mandated Relocations (Attachment H) reflect the amount of plant in service that is being recovered through depreciation expense from January 2022-December 2022 and results in an increase to revenue requirements.

Plus Deferred Taxes: This category reflects the monthly/annual deferred tax expense that is accumulated in the accumulated deferred reserve defined in part a) subsection iii). In the specific case of the annual 2022 deferred taxes for GUIC projects, the $1.7 million for TIMP (Attachment G) and $2.7 million for DIMP and Mandated Relocations (Attachment H) reflect the January 1, 2022 - December 31, 2022 tax timing difference when book expense differs from tax expense and results in an increase to revenue requirements.

Plus Gross Up for Income Taxes: This category reflects the current income taxes the Company is anticipated to pay based on its taxable income. In the specific case of the annual 2022 current taxes for GUIC projects, the $0.2 million for TIMP (Attachment G) and $0.4 million for DIMP and Mandated Relocations (Attachment H) reflect the amount of current income taxes the Company is anticipating paying as a result of the taxable income being generated by GUIC projects.

Monthly Collection Pattern

	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21
Revenue Requirement Subtotal	1,632,262	1,573,127	1,519,994	1,546,636	1,591,562	1,637,818	1,932,511	1,752,681	2,126,655	1,884,735	(252,531)	2,590,545
Revenue Collections	2,205,239	1,602,749	869,550	583,110	467,577	469,767	598,200	1,582,800	2,136,209	3,056,328	3,320,619	3,469,930
Carryover Rollforward:												
Carryover Beginning Balance	(1,189,269)	20,279,277	17,044,266	16,174,716	15,591,606	15,124,029	14,654,261	14,056,062	12,473,261	10,337,052	7,280,725	3,960,105
Activity (Under/(Over) Collection)	(572,977)	(29,622)	650,444	963,526	1,123,984	1,168,051	1,334,311	169,881	(9,554)	(1,171,593)	(3,573,150)	(879,385)
Deferral Impact	22,041,523	(3,205,389)	(1,519,994)	(1,546,636)	(1,591,562)	(1,637,818)	(1,932,511)	(1,752,681)	(2,126,655)	(1,884,735)	252,531	(2,590,545)
Carryover Ending Balance	20,279,277	17,044,266	16,174,716	15,591,606	15,124,029	14,654,261	14,056,062	12,473,261	10,337,052	7,280,725	3,960,105	490,176

2019 Annual Revenue Requirements (Jan 2019-Dec 2019)	22,041,523
Carryover Balance at beginning of collection period	(1,189,269)
Total 2019 Revenue Requirement	20,852,254
Revenue Collections from Mar 2020-Feb 2021	20,362,078
Carryover Balance at End of collection period	490,176

Rate by Class:	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual
Estimated Revenue Collections	**Mar-20**	**Apr-20**	**May-20**	**Jun-20**	**Jul-20**	**Aug-20**	**Sep-20**	**Oct-20**	**Nov-20**	**Dec-20**	**Jan-21**	**Feb-21**
Residential	1,524,980	1,150,196	554,812	304,449	239,242	252,259	366,821	1,065,461	1,490,329	2,163,222	2,370,755	2,483,388
Commercial Firm	470,751	312,746	167,252	132,508	68,514	84,338	114,807	325,224	460,402	677,525	701,810	743,709
Commercial Demand Billed	45,224	32,758	28,667	18,726	17,531	21,474	20,250	32,966	43,294	41,484	50,763	55,411
Interruptible	123,993	72,876	64,473	59,911	53,819	50,572	54,547	97,179	110,320	119,282	133,036	126,953
Transport	40,291	34,173	54,347	67,516	88,471	61,125	41,775	61,969	31,863	54,814	64,257	60,469
	2,205,239	1,602,749	869,550	583,110	467,577	469,767	598,200	1,582,800	2,136,209	3,056,328	3,320,619	3,469,930

	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual
Sales by Customer Group	**Jul-20**	**Aug-20**	**Sep-20**	**Oct-20**	**Nov-20**	**Dec-20**	**Jan-21**	**Feb-21**
Residential	6,529,092	6,882,674	9,458,670	23,955,123	43,935,111	63,407,345	71,554,830	58,905,765
Commercial Firm	3,483,037	4,289,327	5,604,285	14,219,133	25,172,443	36,952,155	39,217,264	33,136,987
Commercial Demand Billed	1,183,517	1,449,678	1,354,702	2,055,543	3,048,409	2,955,324	3,660,379	3,397,486
Interruptible	5,320,725	4,948,603	5,188,624	8,810,311	10,978,157	11,922,682	13,356,617	11,285,910
Transport	55,336,157	39,408,020	27,146,430	41,820,102	19,645,082	35,622,120	40,383,826	36,199,130
Total Sales	71,852,528	56,978,302	48,752,712	90,860,212	102,779,202	150,859,626	168,172,917	142,925,278

Allocated Cost Per therm
- Residential
- Commercial Firm
- Commercial Demand Billed
- Interruptible
- Transport

Monthly Collection Pattern

	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22
Revenue Requirement Subtotal	2,137,709	1,916,119	2,004,367	1,997,311	2,057,360	2,486,635	2,577,077	2,633,278	2,679,496	2,710,488	(97,044)	2,435,570
Revenue Collections	2,186,730	1,420,000	848,115	510,703	448,146	449,540	542,701	1,265,746	2,147,770	3,060,184	3,411,314	2,837,553
Carryover Rollforward:												
Carryover Beginning Balance	490,176	19,589,892	16,032,183	15,184,068	14,673,365	14,225,219	13,775,679	13,232,979	11,967,232	9,819,462	6,759,278	3,347,964
Activity (Under/(Over) Collection)	(49,021)	496,119	1,156,252	1,486,608	1,609,214	2,037,095	2,034,377	1,367,531	531,726	(349,697)	(3,508,358)	(401,983)
Deferral Impact	19,148,738	(4,053,828)	(2,004,367)	(1,997,311)	(2,057,360)	(2,486,635)	(2,577,077)	(2,633,278)	(2,679,496)	(2,710,488)	97,044	(2,435,570)
Carryover Ending Balance	19,589,892	16,032,183	15,184,068	14,673,365	14,225,219	13,775,679	13,232,979	11,967,232	9,819,462	6,759,278	3,347,964	510,412

matches Docket M-19-664 Compliance
matches DR-15 Att A in 20-798
matches Docket M-19-664 Compliance

matches Docket M-19-664 Compliance
matches Docket M-19-664 Compliance

2020 Annual Revenue Requirements (Jan 2020-Dec 2020)	19,148,738
Carryover Balance at beginning of collection period	490,176
Total 2020 Revenue Requirement	19,638,913
Revenue Collections from Mar 2021-Feb 2022	19,128,501
Carryover Balance at End of collection period	510,412
Total Sales from Revenue Collection Period	1,196,011,326
Annual Cost Per Therm	0.016420

Rate by Class:	Actual	Actual	Actual	Actual	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Estimated Revenue Collections	**Mar-21**	**Apr-21**	**May-21**	**Jun-21**	**Jul-21**	**Aug-21**	**Sep-21**	**Oct-21**	**Nov-21**	**Dec-21**	**Jan-22**	**Feb-22**
Residential	1,539,963	964,757	522,954	249,389	221,101	233,075	320,308	811,216	1,487,819	2,147,226	2,423,133	1,994,785
Commercial Firm	486,481	290,778	165,051	105,569	64,687	79,661	104,083	264,078	467,503	686,275	728,343	615,420
Commercial Demand Billed	48,688	32,189	28,440	21,872	17,357	21,261	19,868	30,147	44,708	43,343	53,683	49,828
Interruptible	65,373	70,585	55,036	48,719	56,352	52,411	54,953	93,310	116,270	126,273	141,460	119,529
Transport	46,226	61,691	76,634	85,155	88,649	63,132	43,489	66,996	31,471	57,067	64,695	57,991
	2,186,730	1,420,000	848,115	510,703	448,146	449,540	542,701	1,265,746	2,147,770	3,060,184	3,411,314	2,837,553

	Actual	Actual	Actual	Actual	**Reflects last twelve months of actual sales (June 2020 - July 2021)**							
Sales by Customer Group	**Mar-21**	**Apr-21**	**May-21**	**Jun-21**	**Jul-21**	**Aug-21**	**Sep-21**	**Oct-21**	**Nov-21**	**Dec-21**	**Jan-22**	**Feb-22**
Residential	51,028,310	26,414,594	14,340,847	7,635,191	6,529,092	6,882,674	9,458,670	23,955,123	43,935,111	63,407,345	71,554,830	58,905,765
Commercial Firm	30,179,072	14,847,935	8,444,670	5,810,707	3,483,037	4,289,327	5,604,285	14,219,133	25,172,443	36,952,155	39,217,264	33,136,987
Commercial Demand Billed	3,666,745	2,178,058	1,924,907	1,509,174	1,183,517	1,449,678	1,354,702	2,055,543	3,048,409	2,955,324	3,660,379	3,397,486
Interruptible	7,214,301	6,730,101	5,235,765	4,725,787	5,320,725	4,948,603	5,188,624	8,810,311	10,978,157	11,922,682	13,356,617	11,285,910
Transport	30,369,782	37,994,240	48,405,971	54,174,390	55,336,157	39,408,020	27,146,430	41,820,102	19,645,082	35,622,120	40,383,826	36,199,130
Total Sales	122,458,210	88,164,929	78,352,160	73,855,249	71,852,528	56,978,302	48,752,712	90,860,212	102,779,202	150,859,626	168,172,917	142,925,278

Allocated Cost Per therm												
Residential					$0.0338640	$0.0338640	$0.0338640	$0.0338640	$0.0338640	$0.0338640	$0.0338640	$0.0338640
Commercial Firm					$0.0185720	$0.0185720	$0.0185720	$0.0185720	$0.0185720	$0.0185720	$0.0185720	$0.0185720
Commercial Demand Billed					$0.0146660	$0.0146660	$0.0146660	$0.0146660	$0.0146660	$0.0146660	$0.0146660	$0.0146660
Interruptible					$0.0105910	$0.0105910	$0.0105910	$0.0105910	$0.0105910	$0.0105910	$0.0105910	$0.0105910
Transport					$0.0016020	$0.0016020	$0.0016020	$0.0016020	$0.0016020	$0.0016020	$0.0016020	$0.0016020
					Rate from compliance filing in Docket M-19-664							

Monthly Collection Pattern

	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23
Revenue Requirement Subtotal	2,552,645	2,388,888	2,344,568	2,351,646	2,377,412	2,447,669	2,503,413	2,540,551	2,581,382	2,853,930	1,380,321	3,226,764
Revenue Collections	3,327,131	1,801,182	1,084,491	709,109	605,756	607,992	734,441	1,710,983	2,901,899	4,130,743	4,604,552	3,829,989
Carryover Rollforward:												
Carryover Beginning Balance	510,412	25,273,781	20,919,954	19,835,463	19,126,354	18,520,598	17,912,606	17,178,166	15,467,183	12,565,284	8,434,541	3,829,989
Activity (Under/(Over) Collection)	(774,485)	587,706	1,260,078	1,642,537	1,771,656	1,839,677	1,768,972	829,568	(320,517)	(1,276,813)	(3,224,231)	(603,225)
Deferral Impact	25,537,854	(4,941,533)	(2,344,568)	(2,351,646)	(2,377,412)	(2,447,669)	(2,503,413)	(2,540,551)	(2,581,382)	(2,853,930)	(1,380,321)	(3,226,764)
Carryover Ending Balance	25,273,781	20,919,954	19,835,463	19,126,354	18,520,598	17,912,606	17,178,166	15,467,183	12,565,284	8,434,541	3,829,989	-

19,148,738 slight change from 20-xx Reply comments due to additional two months of actuals

19,638,913

has not been filed anywhere yet

2021 Annual Revenue Requirements (Jan 2021-Dec 2021)	25,537,854
Carryover Balance at beginning of collection period	510,412
Total 2021 Revenue Requirement	26,048,266
Revenue Collections from Mar 2022-Feb 2023	26,048,266
Carryover Balance at End of collection period	-
Total Sales from Revenue Collection Period	1,196,011,326
Annual Cost Per Therm	0.021779

Rate by Class:	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Estimated Revenue Collections	**Mar-22**	**Apr-22**	**May-22**	**Jun-22**	**Jul-22**	**Aug-22**	**Sep-22**	**Oct-22**	**Nov-22**	**Dec-22**	**Jan-23**	**Feb-23**
Residential	2,326,655	1,204,383	653,876	348,129	297,696	313,818	431,272	1,092,243	2,003,238	2,891,081	3,262,569	2,685,830
Commercial Firm	755,003	371,457	211,264	145,369	87,137	107,308	140,205	355,726	629,750	924,448	981,115	829,002
Commercial Demand Billed	70,699	41,995	37,114	29,099	22,820	27,951	26,120	39,633	58,777	56,982	70,576	65,507
Interruptible	110,966	103,519	80,534	72,689	81,840	76,117	79,809	135,515	168,860	183,388	205,444	173,594
Transport	63,808	79,827	101,703	113,822	116,263	82,798	57,036	87,866	41,275	74,843	84,848	76,056
	3,327,131	1,801,182	1,084,491	709,109	605,756	607,992	734,441	1,710,983	2,901,899	4,130,743	4,604,552	3,829,989

	Reflects last twelve months of actual sales (June 2020 - July 2021)											
Sales by Customer Group	**Mar-22**	**Apr-22**	**May-22**	**Jun-22**	**Jul-22**	**Aug-22**	**Sep-22**	**Oct-22**	**Nov-22**	**Dec-22**	**Jan-23**	**Feb-23**
Residential	51,028,310	26,414,594	14,340,847	7,635,191	6,529,092	6,882,674	9,458,670	23,955,123	43,935,111	63,407,345	71,554,830	58,905,765
Commercial Firm	30,179,072	14,847,935	8,444,670	5,810,707	3,483,037	4,289,327	5,604,285	14,219,133	25,172,443	36,952,155	39,217,264	33,136,987
Commercial Demand Billed	3,666,745	2,178,058	1,924,907	1,509,174	1,183,517	1,449,678	1,354,702	2,055,543	3,048,409	2,955,324	3,660,379	3,397,486
Interruptible	7,214,301	6,730,101	5,235,765	4,725,787	5,320,725	4,948,603	5,188,624	8,810,311	10,978,157	11,922,682	13,356,617	11,285,910
Transport	30,369,782	37,994,240	48,405,971	54,174,390	55,336,157	39,408,020	27,146,430	41,820,102	19,645,082	35,622,120	40,383,826	36,199,130
Total Sales	122,458,210	88,164,929	78,352,160	73,855,249	71,852,528	56,978,302	48,752,712	90,860,212	102,779,202	150,859,626	168,172,917	142,925,278
Allocated Cost Per therm												
Residential	$0.0455954	$0.0455954	$0.0455954	$0.0455954	$0.0455954	$0.0455954	$0.0455954	$0.0455954	$0.0455954	$0.0455954	$0.0455954	$0.0455954
Commercial Firm	$0.0250174	$0.0250174	$0.0250174	$0.0250174	$0.0250174	$0.0250174	$0.0250174	$0.0250174	$0.0250174	$0.0250174	$0.0250174	$0.0250174
Commercial Demand Billed	$0.0192811	$0.0192811	$0.0192811	$0.0192811	$0.0192811	$0.0192811	$0.0192811	$0.0192811	$0.0192811	$0.0192811	$0.0192811	$0.0192811
Interruptible	$0.0153814	$0.0153814	$0.0153814	$0.0153814	$0.0153814	$0.0153814	$0.0153814	$0.0153814	$0.0153814	$0.0153814	$0.0153814	$0.0153814
Transport	$0.0021010	$0.0021010	$0.0021010	$0.0021010	$0.0021010	$0.0021010	$0.0021010	$0.0021010	$0.0021010	$0.0021010	$0.0021010	$0.0021010
Rate needed to fully recover 2021 Revenue Requirement in this period - will be updated with final Commission Order												

	Revenue Apportionment	GUIC $ recovered in Mar22-Feb23	Mar22-Feb23 Sales therms	Mar22-Feb23 GUIC Factors $/therm
Residential	67.224%	17,510,791	384,047,551	0.045595
Commercial Firm	21.260%	5,537,783	221,357,015	0.025017
Commercial Demand Billed	2.101%	547,274	28,383,924	0.019281
Interruptible	5.652%	1,472,274	95,717,586	0.015381
Transportation	3.763%	980,144	466,505,250	0.002101
Total		26,048,266	1,196,011,326	

Monthly Collection Pattern

	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24
Revenue Requirement Subtotal	3,230,626	3,203,751	3,133,325	3,178,780	3,244,459	3,340,752	3,419,358	3,500,216	3,565,157	3,625,683	1,482,701	3,712,752
Revenue Collections	3,459,249	1,895,450	1,166,161	789,352	685,841	666,401	781,371	1,796,498	2,988,940	4,294,260	4,781,993	3,975,113
Carryover Rollforward:												
Carryover Beginning Balance	-	27,052,007	21,925,930	20,759,770	19,970,418	19,284,577	18,618,176	17,836,805	16,040,307	13,051,367	8,757,107	3,975,113
Activity (Under/(Over) Collection)	(228,623)	1,308,300	1,967,164	2,389,428	2,558,619	2,674,350	2,637,987	1,703,718	576,216	(668,578)	(3,299,292)	(262,362)
Deferral Impact	27,280,630	(6,434,377)	(3,133,325)	(3,178,780)	(3,244,459)	(3,340,752)	(3,419,358)	(3,500,216)	(3,565,157)	(3,625,683)	(1,482,701)	(3,712,752)
Carryover Ending Balance	27,052,007	21,925,930	20,759,770	19,970,418	19,284,577	18,618,176	17,836,805	16,040,307	13,051,367	8,757,107	3,975,113	0

2022 Annual Revenue Requirements (Jan 2022-Dec 2022)	27,280,630
Carryover Balance at beginning of collection period	-
Total 2022 Revenue Requirement	27,280,630
Revenue Collections from Mar 2023-Feb 2024	27,280,630
Carryover Balance at End of collection period	-
Total Sales from Revenue Collection Period	1,196,011,326
Annual Cost Per Therm	0.022810

Rate by Class:	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Estimated Revenue Collections	**Mar-23**	**Apr-23**	**May-23**	**Jun-23**	**Jul-23**	**Aug-23**	**Sep-23**	**Oct-23**	**Nov-23**	**Dec-23**	**Jan-24**	**Feb-24**
Residential	2,436,729	1,261,363	684,811	364,599	311,780	328,665	451,675	1,143,917	2,098,011	3,027,859	3,416,921	2,812,897
Commercial Firm	790,724	389,032	221,259	152,247	91,259	112,385	146,838	372,556	659,545	968,185	1,027,534	868,224
Commercial Demand Billed	103,247	125,899	163,059	181,984	184,529	129,384	87,289	139,239	64,882	119,754	136,775	123,642
Interruptible	128,549	119,158	97,031	90,522	98,272	95,968	95,568	140,786	166,503	178,462	200,763	170,351
Transport	-	-	-	-	-	-	-	-	-	-	-	-
	3,459,249	1,895,450	1,166,161	789,352	685,841	666,401	781,371	1,796,498	2,988,940	4,294,260	4,781,993	3,975,113

	Reflects last twelve months of actual sales (June 2020 - July 2021)											
Sales by Customer Group	**Mar-23**	**Apr-23**	**May-23**	**Jun-23**	**Jul-23**	**Aug-23**	**Sep-23**	**Oct-23**	**Nov-23**	**Dec-23**	**Jan-24**	**Feb-24**
Residential	51,028,310	26,414,594	14,340,847	7,635,191	6,529,092	6,882,674	9,458,670	23,955,123	43,935,111	63,407,345	71,554,830	58,905,765
Commercial Firm	30,179,072	14,847,935	8,444,670	5,810,707	3,483,037	4,289,327	5,604,285	14,219,133	25,172,443	36,952,155	39,217,264	33,136,987
Commercial Demand Billed	29,630,167	36,130,738	46,795,189	52,226,314	52,956,794	37,130,958	25,050,552	39,959,095	18,620,051	34,367,424	39,252,185	35,483,086
Interruptible	11,620,661	10,771,661	8,771,455	8,183,037	8,883,605	8,675,343	8,639,204	12,726,861	15,051,597	16,132,702	18,148,637	15,399,440
Transport												
Total Sales	122,458,210	88,164,929	78,352,160	73,855,249	71,852,528	56,978,302	48,752,712	90,860,212	102,779,202	150,859,626	168,172,917	142,925,278
Allocated Cost Per therm												
Residential	$0.0477525	$0.0477525	$0.0477525	$0.0477525	$0.0477525	$0.0477525	$0.0477525	$0.0477525	$0.0477525	$0.0477525	$0.0477525	$0.0477525
Commercial Firm	$0.0262011	$0.0262011	$0.0262011	$0.0262011	$0.0262011	$0.0262011	$0.0262011	$0.0262011	$0.0262011	$0.0262011	$0.0262011	$0.0262011
Commercial Demand Billed	$0.0034845	$0.0034845	$0.0034845	$0.0034845	$0.0034845	$0.0034845	$0.0034845	$0.0034845	$0.0034845	$0.0034845	$0.0034845	$0.0034845
Interruptible	$0.0110621	$0.0110621	$0.0110621	$0.0110621	$0.0110621	$0.0110621	$0.0110621	$0.0110621	$0.0110621	$0.0110621	$0.0110621	$0.0110621
Transport												

Revised Revenue Apportionment discussed in Petition

	Revenue Apportionment	GUIC $ recovered in Mar23-Feb24	Mar23-Feb24 Sales therms	Mar23-Feb24 GUIC Factors $/therm
Residential	67.224%	18,339,227	384,047,551	0.047752
Commercial Firm	21.260%	5,799,787	221,357,015	0.026201
Demand	5.717%	1,559,683	447,602,554	0.003485
Interruptible	5.799%	1,581,932	143,004,206	0.011062
		-	-	
Total		27,280,630	1,196,011,326	

Carryover Rollforward

GUIC Over / Under Collection

Carryover Rollforward:	**Mar-20**	**Apr-20**	**May-20**	**Jun-20**	**Jul-20**	**Aug-20**	**Sep-20**	**Oct-20**	**Nov-20**	**Dec-20**	**Jan-21**	**Feb-21**
Carryover Beginning Balance	(1,189,269)	20,279,277	17,044,266	16,174,716	15,591,606	15,124,029	14,654,261	14,056,062	12,473,261	10,337,052	7,280,725	3,960,105
Revenue Requirement	1,632,262	1,573,127	1,519,994	1,546,636	1,591,562	1,637,818	1,932,511	1,752,681	2,126,655	1,884,735	(252,531)	2,590,545
Deferral Impact	22,041,523	(3,205,389)	(1,519,994)	(1,546,636)	(1,591,562)	(1,637,818)	(1,932,511)	(1,752,681)	(2,126,655)	(1,884,735)	252,531	(2,590,545)
Revenue Collections												
Residential												
Commercial Firm												
Commercial Demand Billed												
Interruptible												
Transport												
Total Revenue Collections	2,205,239	1,602,749	869,550	583,110	467,577	469,767	598,200	1,582,800	2,136,209	3,056,328	3,320,619	3,469,930
Activity (Under/(Over) Collection)	**20,279,277**	**17,044,266**	**16,174,716**	**15,591,606**	**15,124,029**	**14,654,261**	**14,056,062**	**12,473,261**	**10,337,052**	**7,280,725**	**3,960,105**	**490,176**

GUIC Over / Under Collection

Carryover Rollforward:	**Mar-21**	**Apr-21**	**May-21**	**Jun-21**	**Jul-21**	**Aug-21**	**Sep-21**	**Oct-21**	**Nov-21**	**Dec-21**	**Jan-22**	**Feb-22**
Carryover Beginning Balance	490,176	19,589,892	16,032,183	15,184,068	14,673,365	14,225,219	13,775,679	13,232,979	11,967,232	9,819,462	6,759,278	3,347,964
Revenue Requirement	2,137,709	1,916,119	2,004,367	1,997,311	2,057,360	2,486,635	2,577,077	2,633,278	2,679,496	2,710,488	(97,044)	2,435,570
Deferral Impact	19,148,738	(4,053,828)	(2,004,367)	(1,997,311)	(2,057,360)	(2,486,635)	(2,577,077)	(2,633,278)	(2,679,496)	(2,710,488)	97,044	(2,435,570)
Revenue Collections					Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Residential					221,101	233,075	320,308	811,216	1,487,819	2,147,226	2,423,133	1,994,785
Commercial Firm					64,687	79,661	104,083	264,078	467,503	686,275	728,343	615,420
Commercial Demand Billed					17,357	21,261	19,868	30,147	44,708	43,343	53,683	49,828
Interruptible					56,352	52,411	54,953	93,310	116,270	126,273	141,460	119,529
Transport					88,649	63,132	43,489	66,996	31,471	57,067	64,695	57,991
Total Revenue Collections	2,186,730	1,420,000	848,115	510,703	448,146	449,540	542,701	1,265,746	2,147,770	3,060,184	3,411,314	2,837,553
Activity (Under/(Over) Collection)	**19,589,892**	**16,032,183**	**15,184,068**	**14,673,365**	**14,225,219**	**13,775,679**	**13,232,979**	**11,967,232**	**9,819,462**	**6,759,278**	**3,347,964**	**510,412**

GUIC Over / Under Collection

Carryover Rollforward:	**Mar-22**	**Apr-22**	**May-22**	**Jun-22**	**Jul-22**	**Aug-22**	**Sep-22**	**Oct-22**	**Nov-22**	**Dec-22**	**Jan-23**	**Feb-23**
Carryover Beginning Balance	510,412	25,273,781	20,919,954	19,835,463	19,126,354	18,520,598	17,912,606	17,178,166	15,467,183	12,565,284	8,434,541	3,829,989
Revenue Requirement	2,552,645	2,388,888	2,344,568	2,351,646	2,377,412	2,447,669	2,503,413	2,540,551	2,581,382	2,853,930	1,380,321	3,226,764
Deferral Impact	25,537,854	(4,941,533)	(2,344,568)	(2,351,646)	(2,377,412)	(2,447,669)	(2,503,413)	(2,540,551)	(2,581,382)	(2,853,930)	(1,380,321)	(3,226,764)
Revenue Collections	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Residential	2,326,655	1,204,383	653,876	348,129	297,696	313,818	431,272	1,092,243	2,003,238	2,891,081	3,262,569	2,685,830
Commercial Firm	755,003	371,457	211,264	145,369	87,137	107,308	140,205	355,726	629,750	924,448	981,115	829,002
Commercial Demand Billed	70,699	41,995	37,114	29,099	22,820	27,951	26,120	39,633	58,777	56,982	70,576	65,507
Interruptible	110,966	103,519	80,534	72,689	81,840	76,117	79,809	135,515	168,860	183,388	205,444	173,594
Transport	63,808	79,827	101,703	113,822	116,263	82,798	57,036	87,866	41,275	74,843	84,848	76,056
Total Revenue Collections	3,327,131	1,801,182	1,084,491	709,109	605,756	607,992	734,441	1,710,983	2,901,899	4,130,743	4,604,552	3,829,989
Activity (Under/(Over) Collection)	**25,273,781**	**20,919,954**	**19,835,463**	**19,126,354**	**18,520,598**	**17,912,606**	**17,178,166**	**15,467,183**	**12,565,284**	**8,434,541**	**3,829,989**	**-**

GUIC Over / Under Collection

Carryover Rollforward:	**Mar-23**	**Apr-23**	**May-23**	**Jun-23**	**Jul-23**	**Aug-23**	**Sep-23**	**Oct-23**	**Nov-23**	**Dec-23**	**Jan-24**	**Feb-24**
Carryover Beginning Balance	-	27,052,007	21,925,930	20,759,770	19,970,418	19,284,577	18,618,176	17,836,805	16,040,307	13,051,367	8,757,107	3,975,113
Revenue Requirement	3,230,626	3,203,751	3,133,325	3,178,780	3,244,459	3,340,752	3,419,358	3,500,216	3,565,157	3,625,683	1,482,701	3,712,752
Deferral Impact	27,280,630	(6,434,377)	(3,133,325)	(3,178,780)	(3,244,459)	(3,340,752)	(3,419,358)	(3,500,216)	(3,565,157)	(3,625,683)	(1,482,701)	(3,712,752)
Revenue Collections	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Residential	2,436,729	1,261,363	684,811	364,599	311,780	328,665	451,675	1,143,917	2,098,011	3,027,859	3,416,921	2,812,897
Commercial Firm	790,724	389,032	221,259	152,247	91,259	112,385	146,838	372,556	659,545	968,185	1,027,534	868,224
Commercial Demand Billed	103,247	125,899	163,059	181,984	184,529	129,384	87,289	139,239	64,882	119,754	136,775	123,642
Interruptible	128,549	119,158	97,031	90,522	98,272	95,968	95,568	140,786	166,503	178,462	200,763	170,351
Transport	-	-	-	-	-	-	-	-	-	-	-	-
Total Revenue Collections	3,459,249	1,895,450	1,166,161	789,352	685,841	666,401	781,371	1,796,498	2,988,940	4,294,260	4,781,993	3,975,113
Activity (Under/(Over) Collection)	**27,052,007**	**21,925,930**	**20,759,770**	**19,970,418**	**19,284,577**	**18,618,176**	**17,836,805**	**16,040,307**	**13,051,367**	**8,757,107**	**3,975,113**	**0**

Redline

APPLICABILITY
Applicable to bills for natural gas service provided under the Company's retail rate schedules.

RIDER
The Gas Utility Infrastructure Cost (GUIC) Rider is designed to collect the costs of assessments, modifications, and replacement of natural gas facilities as required to comply with state and federal pipeline safety programs. There shall be included on each customer's monthly bill a GUIC Rider charge, which shall be calculated by multiplying the monthly applicable billing therms for natural gas service by the GUIC Rider Factor for the appropriate customer group. ~~T~~ ~~T~~

DETERMINATION OF GUIC RIDER FACTORS
A separate GUIC Rider Factor shall be calculated for the following ~~five~~four customer groups: (1) Residential, (2) Commercial Firm, (3) Commercial Demand Billed, and (4) Interruptible~~, and (5) Transportation~~. The GUIC Rider Factor for each customer group shall be the value obtained by multiplying the balance of the GUIC Rider Tracker Account by each customer group's allocation factor, divided by the forecasted sales for the customer group in the recovery period. T T ~~T~~ ~~T~~

The GUIC Rider Factor for each customer group may be adjusted annually with approval of the Minnesota Public Utilities Commission (Commission). On or before November 1, the Company will file a GUIC Rider Annual Report with request to change the GUIC Rider Factor. ~~T~~ ~~T~~ ~~T~~

The current GUIC Rider Factor for each customer group is: ~~T~~

Residential	~~$0.033864~~$0.047752 per therm	R
Commercial Firm	~~$0.018572~~$0.026201 per therm	R
Commercial Demand Billed	~~$0.014666~~$0.003485 per therm	R
Interruptible	~~$0.010591~~$0.011062 per therm	R
~~Transportation~~	~~$0.001602 per therm~~	~~R~~D

Recoverable GUIC Rider Expenses ~~T~~
Recoverable GUIC Rider Expenses shall be the annual revenue requirements for costs associated with natural gas infrastructure projects eligible for recovery under Minnesota Statute Sections 216B.1635 or 216B.16, subd. 11 that are determined by the Commission to be eligible for recovery under this GUIC Rider. A standard model will be used to calculate the total forecasted revenue requirements for eligible projects for the designated period. All costs appropriately charged to the GUIC Rider Tracker Account shall be eligible for recovery through this Rider, and all revenues recovered from the GUIC Rider Factor shall be credited to the GUIC Rider Tracker Account. The GUIC Rider Tracker Account includes adjustments for forecasted revenue requirements compared to actual revenue requirements and for actual revenue requirements compared to actual revenue recovery. ~~T~~ ~~T~~ ~~T~~

(Continued on Sheet No. 5-65)

Clean

GAS UTILITY INFRASTRUCTURE COST RIDER

APPLICABILITY
Applicable to bills for natural gas service provided under the Company's retail rate schedules.

RIDER
The Gas Utility Infrastructure Cost (GUIC) Rider is designed to collect the costs of assessments, modifications, and replacement of natural gas facilities as required to comply with state and federal pipeline safety programs. There shall be included on each customer's monthly bill a GUIC Rider charge, which shall be calculated by multiplying the monthly applicable billing therms for natural gas service by the GUIC Rider Factor for the appropriate customer group.

DETERMINATION OF GUIC RIDER FACTORS
A separate GUIC Rider Factor shall be calculated for the following four customer groups: (1) Residential, (2) Commercial Firm, (3) Commercial Demand Billed, and (4) Interruptible. The GUIC Rider Factor for each customer group shall be the value obtained by multiplying the balance of the GUIC Rider Tracker Account by each customer group's allocation factor, divided by the forecasted sales for the customer group in the recovery period. T T

The GUIC Rider Factor for each customer group may be adjusted annually with approval of the Minnesota Public Utilities Commission (Commission). On or before November 1, the Company will file a GUIC Rider Annual Report with request to change the GUIC Rider Factor.

The current GUIC Rider Factor for each customer group is:

Residential	$0.047752 per therm	R
Commercial Firm	$0.026201 per therm	R
Commercial Demand Billed	$0.003485 per therm	R
Interruptible	$0.011062 per therm	R
		D

Recoverable GUIC Rider Expenses
Recoverable GUIC Rider Expenses shall be the annual revenue requirements for costs associated with natural gas infrastructure projects eligible for recovery under Minnesota Statute Sections 216B.1635 or 216B.16, subd. 11 that are determined by the Commission to be eligible for recovery under this GUIC Rider. A standard model will be used to calculate the total forecasted revenue requirements for eligible projects for the designated period. All costs appropriately charged to the GUIC Rider Tracker Account shall be eligible for recovery through this Rider, and all revenues recovered from the GUIC Rider Factor shall be credited to the GUIC Rider Tracker Account. The GUIC Rider Tracker Account includes adjustments for forecasted revenue requirements compared to actual revenue requirements and for actual revenue requirements compared to actual revenue recovery.

(Continued on Sheet No. 5-65)

Xcel Energy	**Gas Utility Infrastructure Cost (GUIC) Rider Performance Metrics**

Introduction

This attachment discusses our proposal for metrics to measure the appropriateness of GUIC expenditures and is provided pursuant to Order Point 2 of the Minnesota Public Utilities Commission's August 18, 2016 Order[1] in Docket No. G002/M-15-808. That Order required that:

> *The Company develop metrics to measure the appropriateness of GUIC expenditures, to be included in future GUIC filings, and provide stakeholders the opportunity for meaningful involvement.*

The Commission also instructed that:

> *Each metric should include reconciliation to the pertinent TIMP/DIMP rules, and/or if not tied to TIMP/DIMP requirement, the Company must identify what goal, benefit, and/or requirement it addresses.*

The Company made our initial metrics proposal, in compliance with that Order, as a supplemental filing in our 2017 GUIC Rider filing.[2] Before submitting the original proposal, the Company engaged with stakeholders to gather input on the proposed metrics. The same proposed metrics were included in our 2018 GUIC Rider request.[3]

In its February 8, 2018 Order,[4] the Commission declined to adopt the proposed metrics and ordered us to continue to discuss metrics with other parties. The Company continued the discussion with stakeholders on metrics prior to submitting the metrics proposal below, through meetings with stakeholders from the Commission Staff, the Department of Commerce (Department), Minnesota Office of Pipeline Safety (MNOPS), and Office of the Attorney General (OAG), on September 26, 2018 and again on August 27, 2019.

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[1] ORDER REQUIRING UPDATED REPORT, APPROVING RIDER RECOVERY, AND REQUIRING METRICS TO EVALUATE GUIC EXPENDITURES, Docket No. G002/M-15-808 (August 18, 2016).
[2] *See* Supplement and Compliance Metrics Proposal, Docket No. G002/M-16-891 (January 13, 2017).
[3] *See* Petition, Compliance Filing, and Annual Report, Page 42, Docket No. G002/M-17-787 (November 1, 2017).
[4] *See* ORDER APPROVING RIDER WITH MODIFICATIONS, Docket No. G002/M-16-891 (February 8, 2018).

The Commission also declined to approve the performance metrics we proposed in our 2019 GUIC Rider filing and required continued discussions to gain consensus.[5] In late 2019, the Company asked stakeholders to provide informal comments on the current proposal. Both the Department and OAG provided information laying out their positions on metrics for the GUIC. Based on the comments provided by the parties, the differences between the Company and parties appeared to be small.

On September 16, 2020, the Department filed Comments in our 2020 GUIC Rider docket and discussed their current position on metrics. They stated:

> *Given Xcel's ongoing efforts to address the Department's concerns, the Department is reassured that the Company will continue to refine performance metrics reporting as it is able to. Therefore, the Department is no longer opposed to the metrics currently proposed by the Company.*[6]

Given the Department's statement, we believe we have reached a consensus on a baseline set of GUIC Rider metrics that we can start with. We take to heart their understanding that we will continue to refine our metrics over time in order to provide a level of information that will make the review of our GUIC Rider filings easier.

In its May 3, 2021 Order[7], the Commission stated it would not establish any specific performance metrics or related requirements in the Order, and that the Commission anticipates that it will have the opportunity to evaluate a proposal for specific, concrete performance metrics in Xcel's 2021 GUIC Petition.

On June 23, 2021, the Department filed Comments in our 2021 GUIC Rider docket and discussed their current position on metrics. They stated:

> *The Department also reviewed the performance metric outcomes of Xcel's prior years' project work, included in Attachment U, and concludes that Xcel's reported performance results appear reasonable.*[8]

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[5] *See* ORDER AUTHORIZING RIDER RECOVERY WITH MODIFICATIONS, Docket No. G002/M-18-692 (January 9, 2020), Order Point 18.
[6] *See* Comments of the Minnesota Department of Commerce, Division of Energy Resources, Docket No. G002/M-19-664 (September 16, 2020), Pages 15-16.
[7] *See* ORDER AUTHORIZING RIDER RECOVERY WITH MODIFICATIONS, Docket No. G002/M-19-664 (May 3,2021), Order Point 6.
[8] *See* Comments of the Minnesota Department of Commerce, Division of Energy Resources, Docket No. G002/M-20-799 (June 23, 2021), Pages 18-19.

Within these Comments the Department also recommended that the Company (1) establish metrics for new programs (a) Casing Renewal Program (both TIMP and DIMP) and (b) Mandated Relocations; and (2) add an additional metric to its Distribution Valve Replacement program (DIMP) for the new aspect of the project work. In response to these comments, we proposed new cost and effectiveness performance metrics for the casing renewal and mandated relocation programs, and additional metrics for the new portion of our distribution valve replacement program. These proposed metrics are relevant measurements of performance. We look forward to continuing our work with the Department to refine these metrics over time.

We need actual experience data to provide metric results. Since these were new programs starting GUIC Rider work in 2021, we are not yet able to provide metric results. We anticipate providing this information in a future GUIC Rider filing once we have full experience data from 2021.

Table 1 below shows the TIMP and DIMP performance metrics we believe would be most useful at this time.

Table 1

Recommended Performance Metrics - TIMP

Program	Project	Cost Performance Metric	Effectiveness Performance Metric
TIMP	Transmission Pipeline Integrity Assessments	Estimated versus actual costs per project	Anomalies repaired by type
	ASVs and RCVs	Estimated versus actual costs per project	Reduction in response time per project
	Programmatic Replacement and MAOP Remediation	Estimated versus actual costs per project	Percentage of high/medium risk projects system-wide
	Casing Renewal	Estimated versus actual costs per project	Percentage of Planned Casings Remediated

Table 1 (continued)

Recommended Performance Metrics - DIMP

Program	Project	Cost Performance Metric	Effectiveness Performance Metric
DIMP	Poor Performing Main Replacement	Poor performing main replacement unit cost (per foot)	Leak rate by vintage
	Poor Performing Service Replacement	Poor performing service replacement unit cost (per foot)	Leak rate by vintage
	Distribution Pipeline Integrity Assessment	Estimated versus actual costs per project	Anomalies repaired by type
	Distribution Valve Replacement	Estimated versus actual costs per project	Percentage of Inoperable Valves Replaced
			Reduction in potential customer outage
	Casing Renewal	Estimated versus actual costs per project	Percentage of Planned Casings Remediated
Mandated Relocations		Estimated versus actual costs per project	Number of Planned vs. Actual Relocations

A. TIMP Metrics

The goal of projects under the Company's TIMP is to detect and repair pipe anomalies and to mitigate the consequence of a failure. The detection and repair of anomalies is achieved primarily through Pipeline Assessments, Replacement, and MAOP remediation. The potential consequences of a pipe failure are mitigated primarily by the installation of Remote-Control Valves (RCVs).

1) Transmission Pipeline Integrity Assessments

2020 Estimated vs. Actual Project Costs

($ Millions)

	2020 Capital, As Filed	2020 Capital Actuals	Variance	% Capital Variance	2020 O&M, As Filed	2020 O&M Actuals	Variance	% O&M Variance
Capital/O&M Expenditure	$2.33	$0.48	($1.85)	(79.40%)	$1.70	$1.70	$0.90	0.00%

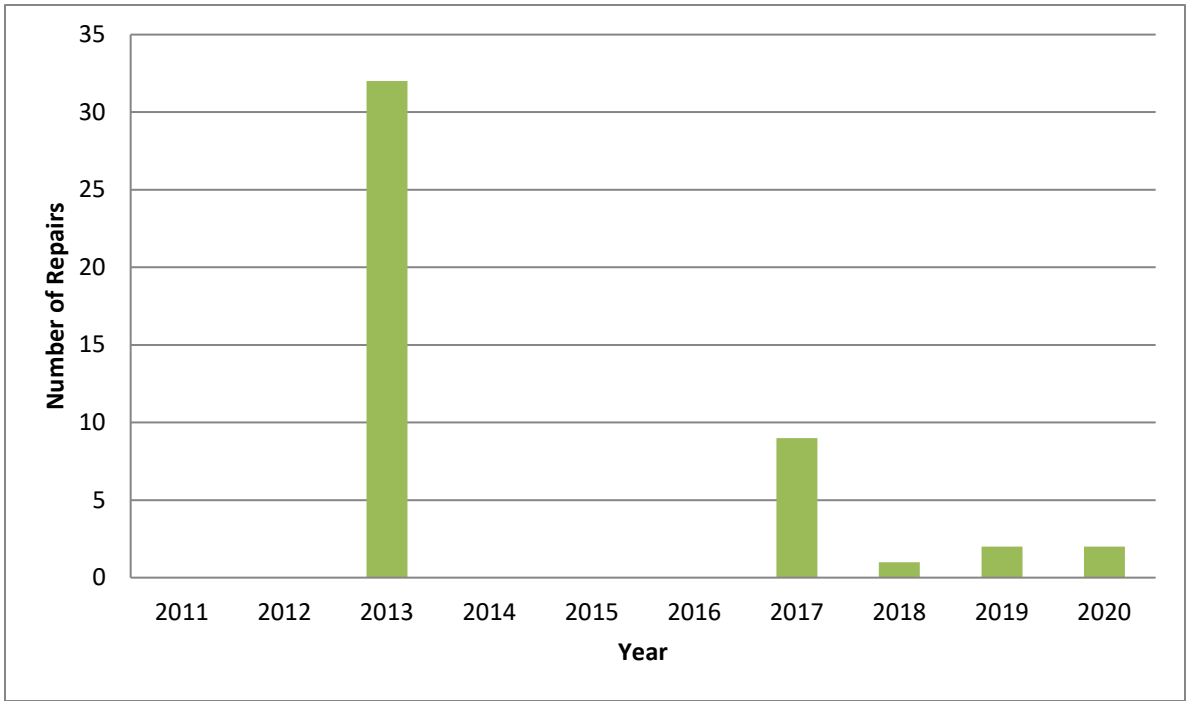
Variance Explanation

Capital: The majority of the decrease in capital expenditures is due to modifying the assessment method for East County Line 20-inch from primarily in-line inspection to primarily direct assessment. A detailed evaluation of the pipeline configuration, operating conditions, risk assessment, and threat identification determined that a direct assessment was the most appropriate method to address the threats to the East County Line 20-inch pipeline. Costs for direct assessments are classified as O&M per the Company's capitalization policy. This decrease was partially offset by the installation of a permanent receiver on the Crossover Line 12-inch pipeline. This work was planned for late 2019 and shifted to 2020.

O&M: None.

Figure 1

NSPM Gas Transmission Number of Anomalies Repaired



Anomaly repairs are expected to vary from year to year as different pipelines are inspected or assessed each year. However, as assessments continue and anomalies are repaired, the Company anticipates the number of repairs to ultimately reduce.

Table 2 below shows the anomalies repaired, by type of anomaly repaired.

Table 2

TIMP Repairs by Anomaly Type

Anomaly Type	Number of Repairs
External Corrosion	13
Internal Corrosion	0
Stress Corrosion Cracking	0
Manufacturing	2
Construction	4
Equipment	0
Third-Party Damage	27
Incorrect Operations	0
Weather and Outside Force	0
Total	46

2) ASVs and RCVs

2020 Estimated vs. Actual Project Costs

($ Millions)

	2020 Capital, As Filed	2020 Capital Actuals	Variance	% Capital Variance	2020 O&M, As Filed	2020 O&M Actuals	Variance	% O&M Variance
Capital/O&M Expenditure	$0.75	$0.44	($0.31)	(41.33%)	$0.00	$0.00	$0.00	0.00%

Variance Explanation

Capital: The decrease in capital expenditures is due to updated cost estimates with reductions in labor and materials. As work began at the Linwood & Century Ave project, an existing stopple was identified on the pipeline. This enabled the installation of the new valve without the need to purchase a new stopple fitting.

O&M: None.

Figure 2

Reduction in Response Time per Project

Line #	Line Name	RCV Location	Nearest Service Center	Response Time (Min)
TL0209	East County Line	Linwood & Century Ave	Newport	10
TL0209	East County Line – West of Mississippi	South St. Paul Station Outlet	Newport	5

As mentioned previously, the potential consequences of a pipe failure are mitigated primarily by the installation of Remote-Control Valves (RCVs). Installation of RCVs reduces the response time needed to shut off the flow of gas in the event of an incident.

3) Programmatic Replacement / MAOP Remediation

2020 Estimated vs. Actual Project Costs

($ Millions)

	2020 Capital, As Filed	2020 Capital Actuals	Variance	% Capital Variance	2020 O&M, As Filed	2020 O&M Actuals	Variance	% O&M Variance
Capital/O&M Expenditures	$32.08	$24.43	($7.65)	(23.85%)	$0.00	$0.00	$0.00	0.00%

Variance Explanation

Capital: The main drivers of the capital expenditure decrease for the County Road B (NSP to Rice) project was due to favorable weather, fewer underground foreign utilities than expected, and minimized field offsets and fittings. Throughout the project there was close communication and coordination with local counties, which kept hard and soft surface costs to a minimum. The project also concluded two weeks ahead of schedule.

O&M: None.

Figure 3

Percentage of High Risk Projects System-Wide

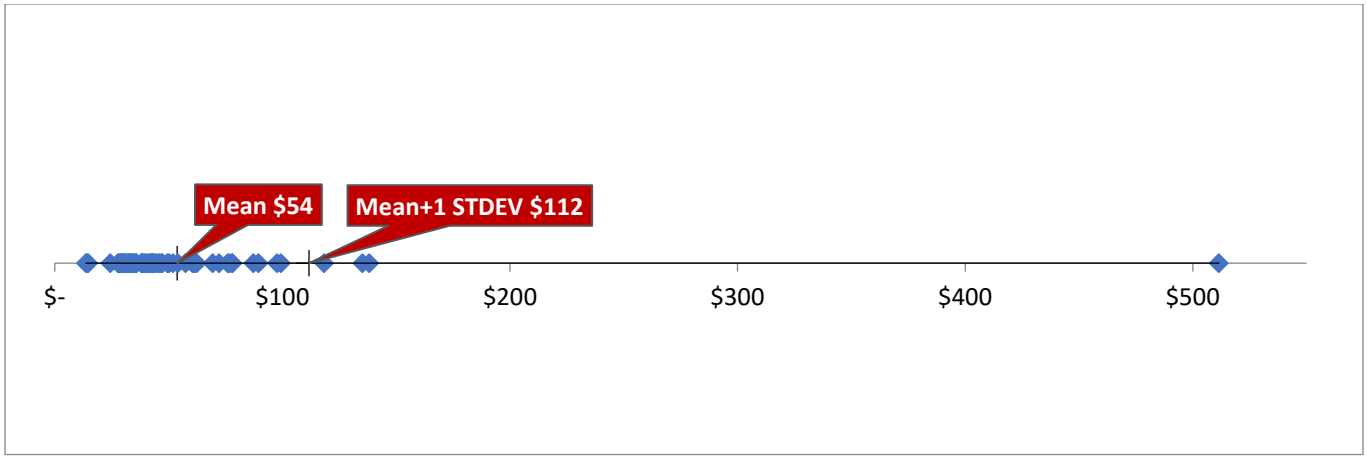
Risk Category	Project Risk Scores Range	Number of pipelines identified as of December 31, 2020	Percentage
High	Risk Score ≥ 5	10	59%
Low	Risk < 5	1	6%
No Risk	Risk Score = 0	0	0%
Under Evaluation	TBD	6	35%
Total	All	17	

B. DIMP Metrics

49 CFR Part 192.1007(e) currently requires performance metrics for DIMP, including the total number of leaks either eliminated or repaired, categorized by cause.

1) Poor Performing Main Replacement

Figure 4
2020 NSPM Poor Performing Main Replacement Projects
Cost per Unit ($/foot installed)



The cost metric shown in Figure 4 above depicts the distribution of average cost per foot for poor performing main replacement projects. Unit costs may vary for many reasons including differences in soil conditions, paving requirements, traffic-control requirements and permit restrictions. In general, projects that the Company considers urban construction exhibit similar traits: congested right of way that necessitates we utilize more or exclusively open trenching and hydrovac instead of directional boring to avoid damaging and safely excavating around existing facilities. Additionally, these projects often require additional concrete and asphalt restoration that impact productivity, equipment and cost. There were four projects in 2020 that exceeded the mean cost per foot plus one standard deviation ($112 per foot). Three of these projects were urban construction projects.

STP/2019 DIMP/Reaney Ave ($118.29 per foot): Project was in an urban/downtown setting, asphalt and concrete restoration was greater than typical and congested running line led to more vacuum excavation, both of which impacted project cost.

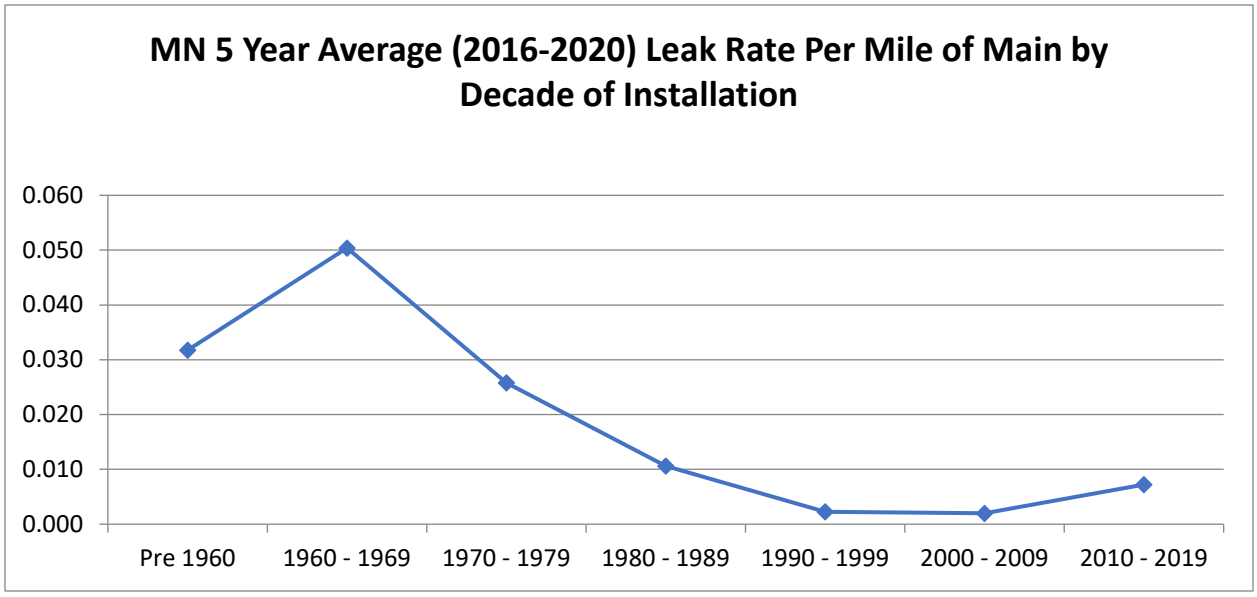
FBT/2020 DIMP/Division St W ($135.10 per foot): This was a short length (240 feet) project in a very congested area, project required vacuum excavation that also impacted the cost.

NPT/2020 DIMP/5th Ave – 3rd Ave ($138.15 per foot): This was an open cut main replacement project through rock; therefore, rock breaking, sand padding and spoil hauling greatly impacted the per unit cost.

STP/844 Hampden 20' 8" Steel to PE DIMP ($511.41 per foot): This project was completed in Downtown St. Paul, asphalt and concrete restoration was greater than typical, and vacuum excavation was needed for the entire 17 feet of installation, resulting in a higher cost per foot relative to other work.

Figure 5

Leak Rate by Vintage



2) Poor Performing Service Replacement

Figure 6

2020 Cost per Unit ($/service installed)

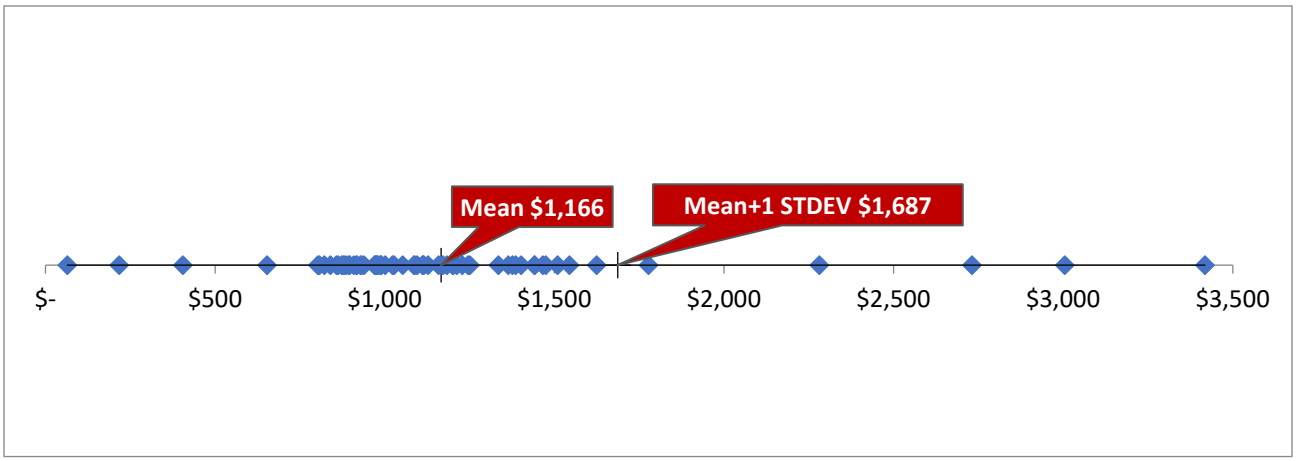


Figure 6 depicts the distribution of cost per average service installation for poor performing services installations. There were five projects that fell above the mean cost per gas service plus one standard deviation ($1,687/service).

NTO/2020 DIMP/Spring Farm Ln ($1,777.85 per service): This project took place in rural area which meant that services were longer than average, contributing to the higher than normal unit pricing.

WYO/2020 DIMP/Forest Blvd N ($2,280.77 per service): Within this project several services were exceptionally long, contributing to the higher than normal unit pricing. A few of the services were commercial, which as compared to residential services have higher unit costs. In addition, increased restoration costs not typical on residential services contributed to the higher cost per unit.

LKC/2019 DIMP/Camp Lakeview Rd ($2,731.02 per service): This project involved primarily commercial services that were exceptionally long installations. These factors attributed to the higher cost per service.

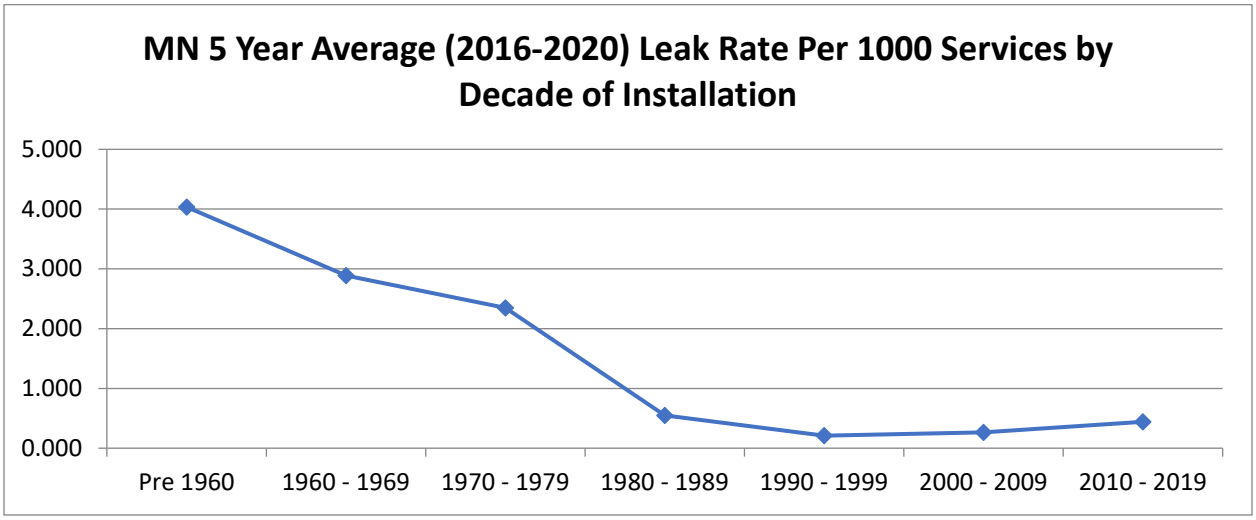
RSV/2020 DIMP/Perimeter Drive ($3,004.49 per service): The service replacements for this project were primarily commercial and longer than average residential services. At this site there were also foreign utilities that had to be considered during

construction. Services were predominantly commercial requiring more asphalt and concrete restoration.

SRP 1646 St Hwy 23 Renew 3700 PEA Main ($3,417.96 per service): Services were primarily commercial and were exceptionally long installations. Since the services were predominantly commercial, as compared to residential services, which are under soft surfaces such as grass, more asphalt and concrete restoration was required.

Figure 7

Leak Rate by Vintage



3) Distribution Pipeline Integrity Assessment

2020 Estimated vs. Actual Project Costs

($ Millions)

	2020 Capital, As Filed	2020 Capital Actuals	Variance	% Capital Variance	2020 O&M, As Filed	2020 O&M Actuals	Variance	% O&M Variance
Capital / O&M Expenditures	$0.49	$1.31	$0.82	167.35%	$0.58	$0.25	($0.33)	(56.90%)

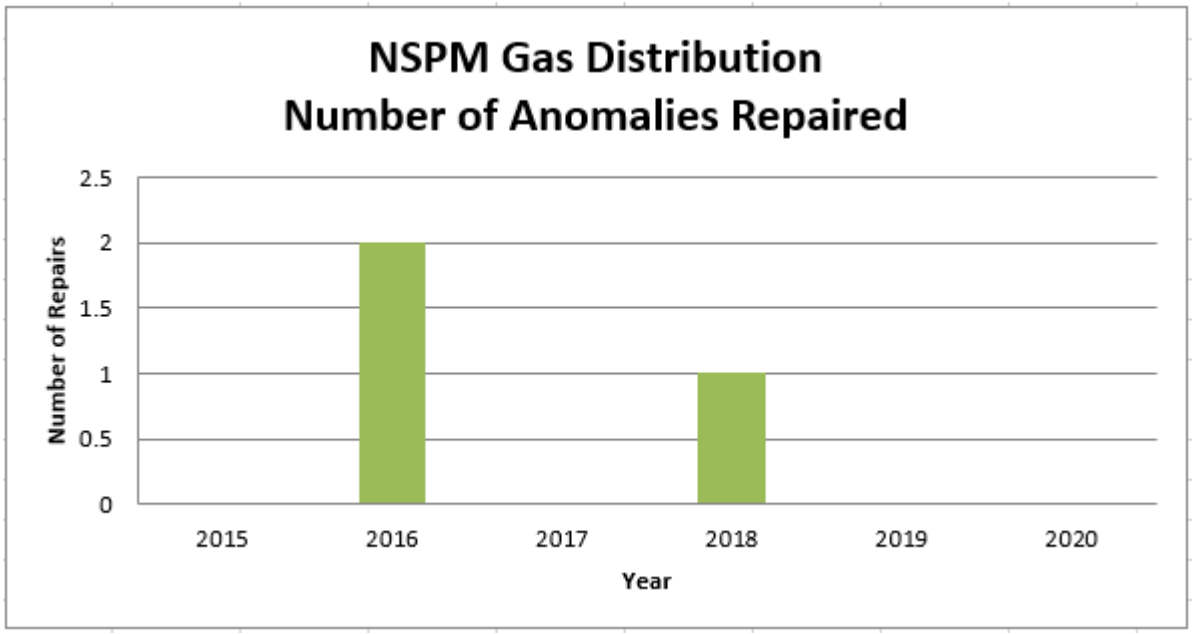
Variance Explanation

Capital: Of the $0.82 million increase, the primary driver was $0.92 million for initial engineering, environmental, permitting and planning for the Langdon Line project. This work was added to the scope of 2020 work for construction to begin in 2021. This increase was offset by lower engineering and permitting costs for the County Rd B – Rice to Hamline project.

O&M: The variance is due to a slight reduction in 2020 survey scope. The ECDA on two laterals in Newport, MN have been removed from the 2020 scope and will instead be surveyed in 2021.

Figure 8

Number of Anomalies Repaired



Since 2015, the Company has completed 15 excavations as part of the Gas Distribution Integrity Assessment project. Two of these excavations identified external corrosion anomalies, one identified a third-party damage anomaly, and the remaining 12 addressed coating anomalies with no associated metal loss. Anomaly repairs are expected to vary from year to year as different pipelines are inspected or assessed each year. However, as assessments continue and anomalies are repaired, the Company anticipates the number of repairs to ultimately reduce.

Table 3 below shows the anomalies repaired, by type of anomaly repaired.

Table 3

DIMP Repairs by Anomaly Type

Anomaly Type	Number of Repairs
External Corrosion	2
Internal Corrosion	0
Stress Corrosion Cracking	0
Manufacturing	0
Construction	0
Equipment	0
Third-Party Damage	1
Incorrect Operations	0
Weather and Outside Force	0
Total	3

4) Distribution Valve Replacement

2020 Estimated vs. Actual Project Costs

($ Millions)

	2020 Capital, As Filed	2020 Capital Actuals	Variance	% Capital Variance	2020 O&M, As Filed	2020 O&M Actuals	Variance	% O&M Variance
Capital / O&M Expenditures	$0.00	$0.06	$0.06	100.00%	$0.00	$0.00	$0.00	0.00%

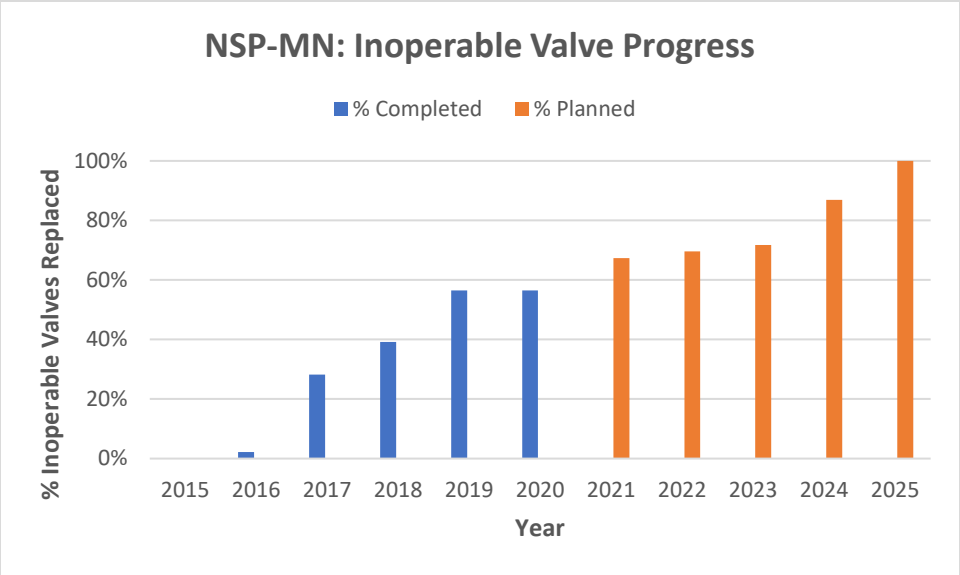
Variance Explanation

Capital: The variance is due to final restoration activities that carried into 2020 from 2019 installs.

O&M: None.

Figure 9

Percentage of Inoperable Valves Replaced



As shown in Figure 9 above, approximately 57 percent of the Company's inoperable valves have been replaced. The Company's distribution valve replacement plan projects 100 percent of inoperable valves will be replaced by 2025.

CERTIFICATE OF SERVICE

I, Mustafa Adam, hereby certify that I have this day served copies or summaries of the foregoing documents on the attached list(s) of persons.

xx by depositing a true and correct copy thereof, properly enveloped with postage paid in the United States Mail at Minneapolis, Minnesota

xx electronic filing

Docket No. G002/M-20-799

Docket No. G002/GR-09-1153

Xcel Energy Miscellaneous Gas Service List

Dated this 29th day of October 2021

/s/

_____

Mustafa Adam
Regulatory Administrator

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Alison C	Archer	aarcher@misoenergy.org	MISO	2985 Ames Crossing Rd Eagan, MN 55121	Electronic Service	No	OFF_SL_20-799_Official Service List 20-799
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